United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

In cooperation with
Virginia Polytechnic
Institute and State
University

Soil Survey of Mecklenburg County, Virginia

How To Use This Soil Survey

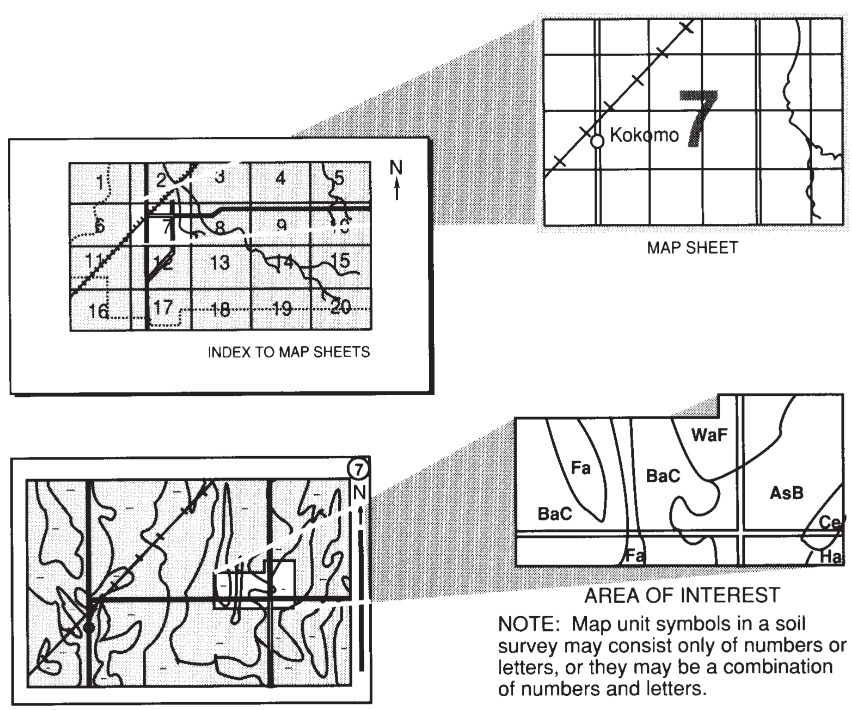
Detailed Soil Maps

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.



MAP SHEET

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 Virginia Polytechnic Institute and State University. The survey is part of the technical assistance furnished to the Southside Soil and Water Conservation District. The Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation and the Mecklenburg County Board of Supervisors provided financial assistance for this survey.

Major fieldwork for this soil survey was completed in 1987. Soil names and descriptions were approved in 1990. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1990. The most current official data are available at http://websoilsurvey.nrcs.usda.gov/.

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.

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Cover Caption

Tobacco in an area of Appling fine sandy loam, 2 to 6 percent slopes.

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 2007

Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys 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 surveys 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 surveys 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.

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

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. 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.

John A. Bricker
State Conservationist
Natural Resources Conservation Service

Soil Survey of Mecklenburg County, Virginia

By Bruce E. Stoneman and Herbert L. Gillispie, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
Virginia Polytechnic Institute and State University, the Mecklenburg County Board of Supervisors, and the Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation

Mecklenburg County is located on the south-central edge of Virginia (fig. 1). The county has an area of 679 square miles, or 434,700 acres. The population of the county was 32,380 in 2000 (USDC, 2000). South Hill and Chase City are the largest towns in the county, and Boydton is the county seat.

This soil survey updates the Soil Survey of Mecklenburg County, Virginia, published in January 1956 (Henry and others, 1956). Field work for the 1956 soil survey was conducted between 1935 and 1942. This newer soil survey provides a photographic base map and includes information and interpretations that were not included in the earlier soil survey.

The soil boundaries on the detailed soil maps of Mecklenburg County match those on the soil maps of adjacent Charlotte and Lunenburg Counties, Virginia, and Vance County, North Carolina. However, some of the soil names do not fully agree. The differences are the result of improvements in the classification of soils, the modification or refinements in soil series concepts, and the differences in the extent of some soils in the survey areas. No other counties adjacent to Mecklenburg County had completed soil surveys at the time when the field portion of this survey was being conducted.

General Nature of the Survey Area

This section provides general information about the survey area. It describes the history; physiography, relief, and drainage; transportation; agriculture; industry; water supply; and climate.

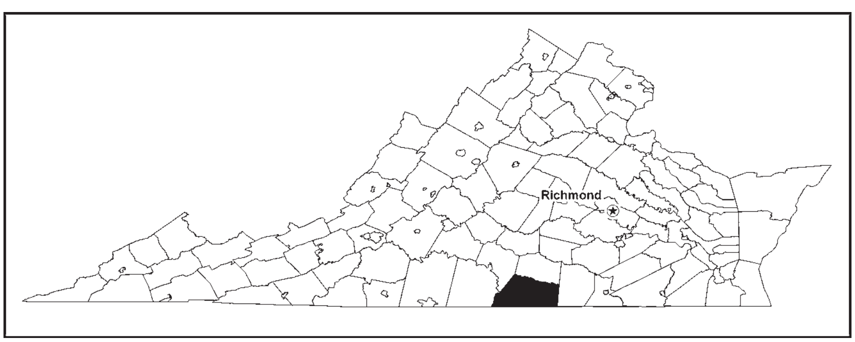

Figure 1.—Location of Mecklenburg County in Virginia.

History

The Occoneechee Indians once inhabited the area along the Roanoke River. They dominated the region from 1250 A.D. until 1676 when they were dispersed by Nathaniel Bacon.

Mecklenburg County was formed in 1764 from part of Lunenburg County and was named for the wife of George III, who was Charlotte of Mecklenburg-Strelitz before marrying the King. The earliest recorded expedition into this area is that of Edward Bland and Abraham Wood in 1650. By 1700, this territory was probably sparsely settled by descendants of the Jamestown Colony, who were of English descent. There were also Scotch, French, Swiss, and Welsh among the early settlers. Immigration to this territory was at its height between 1733 and 1747.

The majority of early English settlers were farmers. Broad, fertile flood plains along the Roanoke River were among the first areas settled and cultivated. Grain, tobacco, and cotton were grown and cattle and hogs were raised. The tobacco, much in demand for snuff-making, was the fire-cured, or shipping, type, which is characterized by a dark, heavy leaf and a relatively high content of gum. After the Civil War, tobacco buyers demanded a lighter-, brighter-colored tobacco and paid the highest prices for a fine-textured, silky leaf. Accordingly, the settlers began planting their tobacco on light, open sandy soils of the uplands that produced the kind of leaf desired for flue-cured tobacco.

In the early days, crop fields or “lots” were laid out as square as possible and little thought was given to plowing on the contour or other conservation practices. With the end of the old plantation system after the Civil War, land misuse increased. Further deterioration due to misuse resulted in many acres of severely eroded soils.

Early transportation included the Boydton and Petersburg Plank Road, which later extended to Clarksville. There was also a connection to the Plank Road from Lawrenceville. The stagecoach schedule called for twelve hours of driving time from Boydton to Petersburg. The Roanoke River provided transportation and shipping downriver to North Carolina, and many trading centers sprang up along the banks of the river.

The twentieth century need for flood control and hydroelectric power led to the development of the John H. Kerr Reservoir and Dam. Buggs Island is a 169-acre island located just downstream of the dam. In Virginia the reservoir is known by locals as Buggs Island Lake, and in North Carolina the reservoir is called John H. Kerr Reservoir, named for the North Carolina Congressman who took a prominent role in supporting its development. Construction on the dam and the 50,000 acre lake began in 1946 and was completed in 1953.

Physiography, Relief, and Drainage

Mecklenburg County is in the Piedmont physiographic province and has gently sloping to steep slopes. The county consists of ridges that are dissected by numerous short drainageways. Slopes generally are steeper near the larger streams. The general slope of the county is southward and eastward. Elevation in the county ranges from about 200 feet above sea level at Lake Gaston to about 580 feet above sea level near Chase City.

The survey area is underlain by igneous and metamorphic rock formations that consist of granite, granite gneiss, mica schist, sericite schist, greenstone, diorite, diabase, gabbro, hornblende gneiss, and slate. Most of the soils in Mecklenburg County formed in material weathered from these rocks.

The northern part of the county is drained primarily by the Meherrin River and its tributaries, which include Finneywood Creek, Horsepen Creek, Blackstone Creek, Kits Creek, Buckhorn Creek, Mountain Creek, and Smith Creek. These streams generally flow to the north and northeast. The southern part of the county is drained by the Roanoke River. Its main tributaries from the north are Bluestone Creek, Peckerwood Branch, Allen Creek, Butcher Creek, Parham Creek, Miles Creek, and Great Creek. The main tributaries from the southern part of the county are Aarons Creek, Buffalo Creek, Beaver Pond Creek, and Smith Creek.

Transportation

Transportation needs of the county are currently met by one interstate highway, two U.S. highways, several state highways, three major railways, and airports near Chase City, Clarksville, La Crosse, and South Hill.

Agriculture

Mecklenburg County has about 581 farms, which make up about 168,150 total acres in the county. Total cropland covers 74,419 acres. About 25,219 acres are in hay, and about 22,052 acres are in pasture (USDA, 2002). The number of farms generally has decreased while the size of farms has increased.

The major crops grown in the county are flue-cured tobacco, soybeans, corn, wheat, barley, oats, sorghum, and rye. Flue-cured tobacco is the major cash crop. A small acreage is used for broccoli and strawberries. Tall fescue and ladino clover are grown for pasture, orchard grass and red clover are grown for pasture and hay, and alfalfa is grown for hay.

The raising of beef cattle is the major livestock enterprise in the county, but hogs and dairy cattle also are raised.

Forestland covers about 60 percent of the county, and about 80 percent of this is privately owned. Most of the forestland is composed of mixed hardwoods and pine. Much of the harvested acreage is planted in loblolly pine. The timber is dominantly harvested for pulpwood, but some of the larger hardwoods and pines are sawed into lumber.

Industry

Most of the manufacturing and business establishments in Mecklenburg County are in or near the towns of South Hill, Chase City, and Clarksville. Some of the major industries in the county produce lumber, furniture, tobacco, textiles, and clothing. South Hill, Chase City, and Clarksville are major markets for flue-cured tobacco and have several tobacco warehouses. Several sawmills are scattered throughout the county. South Hill is also home to a small livestock market.

Water Supply

The water supply of Mecklenburg County comes mainly from wells and springs. Water for South Hill is supplied from the Meherrin River, and the water for Clarksville is supplied from the John H. Kerr Reservoir. In the granite and gneiss areas, mainly in the eastern part of the county, springs are plentiful because numerous fissures and joints in the rocks allow water to flow out freely. In most of these springs, the water is clear and cool. In the western part of the county, the rocks are mostly slates or related rocks. Springs here are less numerous than in the granitic rock belt in the eastern part of the county; dug wells supply most of the water in this area.

Many of the springs, especially in the western part of the county, contain mineral elements said to be medicinal and health-giving. The water of Buffalo Springs contains lithium salts and comes from three distinct springs. These springs come out through a coarse-grained granite rock that was pushed up through slate or greenstone rock by geologic action.

Climate

This section was prepared by the Natural Resources Conservation Service, National Water and Climate Center, Portland Oregon.

Climate data are provided in tables 1, 2, and 3. The data were recorded at the John H. Kerr Dam in the period 1961 to 1990.

Table 1 gives data on temperature and precipitation for the survey area as recorded at the John H. Kerr Dam. 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 38.4 degrees F and the average daily minimum temperature is 27.5 degrees. The lowest temperature on record, which occurred on January 21, 1985, is -5 degrees. In summer, the average temperature is 75.8 degrees and the average daily maximum temperature is 86.9 degrees. The highest recorded temperature, which occurred on August 19, 1988, is 105 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 total annual precipitation is about 42.8 inches. Of this, 25.7 inches, or 60 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 4.15 inches on October 6, 1972. Thunderstorms occur on about 44 days each year, and most occur between May and August.

The average seasonal snowfall is about 5.1 inches. The greatest snow depth at any one time during the period of record was 14 inches, which occurred on February 19, 1989. The heaviest 1-day snowfall on record was 13.0 inches, which occurred on January 27, 1966. On the average, 4 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 54 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 60 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the southwest, except for in August and September when it is from the northeast. Average windspeed is highest, 9 miles per hour, from February through April.

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.

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

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

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

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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, Cecil fine sandy loam, 2 to 6 percent slopes, is a phase of the Cecil series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. 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. Congaree-Chewacla complex, 0 to 2 percent slopes, frequently flooded, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Gullied land, 6 to 30 percent slopes, is an example.

Table 4 lists the map units in this survey area. 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.

AaB—Abell fine sandy loam, 1 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Drainageways and heads of drainageways
Position on the landform: Footslopes and toeslopes

Map Unit Composition

Abell and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 12 inches—brown fine sandy loam

Subsoil:
12 to 25 inches—brownish yellow clay loam
25 to 32 inches—brownish yellow clay loam; yellowish brown masses of oxidized iron
32 to 44 inches—brownish yellow and yellowish red clay; gray iron depletions
44 to 52 inches—brownish yellow sandy clay loam; gray iron depletions

Substratum:
52 to 62 inches—gray loam

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; in similar areas

Similar components:
- Helena soils, which have less clay in the subsoil than the Abell soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.5 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches

Drainage class: Moderately well drained
Depth to seasonal water saturation: About 2.0 to 3.5 feet
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Loamy alluvial and colluvial sediments and underlying residuum

Use and Management Considerations

Cropland
Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Well suited to loblolly pine and northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Seepage limits the proper treatment of the effluent from conventional septic systems and may pollute the water table.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: G
Hydric soil: No

AbB—Altavista fine sandy loam, 0 to 6 percent slopes, rarely flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Low stream terraces
Position on the landform: Treads

Map Unit Composition

Altavista and similar soils: Typically 80 percent, ranging from about 75 to 90 percent

Typical Profile

Surface layer:
0 to 9 inches—brown fine sandy loam; strong brown mottles

Subsoil:
9 to 21 inches—strong brown clay loam; light yellowish brown masses of oxidized iron
21 to 34 inches—strong brown clay loam; light gray iron depletions
34 to 45 inches—strong brown clay loam; light gray iron depletions and red masses of oxidized iron
45 to 57 inches—very pale brown loam; pale yellow iron depletions and reddish yellow masses of oxidized iron

Substratum:
57 to 62 inches—strong brown loam; pale yellow iron depletions and reddish yellow masses of oxidized iron

Minor Components

Dissimilar components:
- Very deep, somewhat poorly drained soils; in similar areas

Similar components:
- Very deep, well drained soils; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 9.5 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 1.5 to 2.5 feet
Water table kind: Apparent
Flooding hazard: Rare
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland
Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Well suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites
- Flooding limits the use of the soil for building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Seepage limits the proper treatment of the effluent from conventional septic systems and may pollute the water table.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: B
Hydric soil: No

ApB—Appling fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, broad summits on ridges

Map Unit Composition

Appling and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

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

Subsoil:
7 to 11 inches—yellowish brown sandy clay loam
11 to 38 inches—yellowish brown clay
38 to 48 inches—brownish yellow and strong brown clay loam; common red mottles

Substratum:
48 to 62 inches—yellowish red and very pale brown sandy loam; many red mottles

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained and have less clay in the subsoil than the Appling soil; in the slightly lower areas
- Helena soils, which are moderately well drained; in the slightly lower areas
- Louisburg soils, which are moderately deep to soft bedrock; in similar areas
- Worsham soils, which are poorly drained; in drainageways

Similar components:
- Cecil soils, which are redder than the Appling soil; in similar areas
- Mattaponi soils, which are moderately well drained; in similar areas
- Wedowee soils, which have a thinner subsoil than the Appling soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from granite or granite gneiss

Use and Management Considerations

Cropland
Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine (fig. 2) and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The low strength of the soil may cause structural damage to local roads and streets.

Figure 2.—Twelve-year-old stand of loblolly pine in an area of Appling fine sandy loam, 2 to 6 percent slopes.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: V
Hydric soil: No

ApC—Appling fine sandy loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Appling and similar soils: Typically 80 percent, ranging from about 75 to 85 percent

Typical Profile

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

Subsoil:
7 to 11 inches—yellowish brown sandy clay loam
11 to 38 inches—yellowish brown clay
38 to 48 inches—brownish yellow and strong brown clay loam; common red mottles

Substratum:
48 to 62 inches—yellowish red and very pale brown sandy loam; many red mottles

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained and have less clay in the subsoil than the Appling soil; in the slightly lower areas
- Helena soils, which are moderately well drained; in the slightly lower areas
- Louisburg soils, which are moderately deep to soft bedrock; in similar areas
- Worsham soils, which are poorly drained; in drainageways

Similar components:
- Cecil soils, which are redder than the Appling soil; in similar areas
- Mattaponi soils, which are moderately well drained; in similar areas
- Wedowee soils, which have a thinner subsoil than the Appling soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite or granite gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and yellow-poplar

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil may cause structural damage to local roads and streets.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: V
Hydric soil: No

ArC—Appling sandy clay loam, 6 to 12 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Appling and similar soils: Typically 75 percent, ranging from about 55 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—yellowish brown sandy clay loam

Subsoil:
4 to 11 inches—yellowish brown sandy clay loam
11 to 38 inches—yellowish brown clay
38 to 48 inches—brownish yellow and strong brown clay loam; common red mottles

Substratum:
48 to 62 inches—yellowish red and very pale brown sandy loam; many red mottles

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained and have less clay in the subsoil than the Appling soil; in the slightly lower areas

- Louisburg soils, which are moderately deep to soft bedrock; in similar areas
- Small gullies; in similar areas

Similar components:
- Cecil soils, which are redder than the Appling soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite or granite gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat; poorly suited to corn, soybeans, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil may cause structural damage to local roads and streets.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: V
Hydric soil: No

BuA—Buncombe loamy fine sand, 0 to 2 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plains
Position on the landform: Nearly level treads

Map Unit Composition

Buncombe and similar soils: Typically 80 percent, ranging from about 75 to 85 percent

Typical Profile

Surface layer:
0 to 12 inches—brown loamy fine sand

Substratum:
12 to 23 inches—brown loamy fine sand
23 to 37 inches—yellowish brown sand
37 to 44 inches—brown loamy fine sand
44 to 53 inches—brown fine sandy loam; pale brown and brownish yellow masses of oxidized iron
53 to 62 inches—brown fine sandy loam; yellowish brown and pale brown masses of oxidized iron

Minor Components

Dissimilar components:
- Toccoa soils, which are well drained and moderately well drained and have finer textures than the Buncombe soil; in the slightly lower areas

Soil Properties and Qualities

Available water capacity: Low (about 4.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Surface fragments: None
Parent material: Sandy alluvial sediments

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat; poorly suited to corn, soybeans, and grass-legume hay

- The limited available water capacity may cause plants to suffer from moisture stress.
- Sandy or coarse-textured layers accelerate the rate at which plant nutrients are leached.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Flooding may damage crops.

Pasture
Suitability: Poorly suited
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.
- Flooding may damage pastures.

Woodland
Suitability: Well suited to loblolly pine and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.

Building sites
- Flooding limits the use of the soil for building site development.

Septic tank absorption fields
- Flooding limits the use of the soil for septic tank absorption fields.

Local roads and streets
- Flooding may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4s
Virginia soil management group: II
Hydric soil: No

CeB—Cecil fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, broad summits on ridges

Map Unit Composition

Cecil and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

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

Subsoil:
7 to 16 inches—yellowish red clay; few red mottles
16 to 45 inches—red clay
45 to 55 inches—red sandy clay loam

Substratum:
55 to 62 inches—red, reddish yellow, yellowish red, and pinkish white sandy loam saprolite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in the slightly lower areas

Similar components:
- Appling soils, which have yellower colors than the Cecil soil; in similar areas
- Cullen soils, which have more clay in the subsoil than the Cecil soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.0 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss

Use and Management Considerations

Cropland
Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn and soybeans (fig. 3)
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Well suited to northern red oak; moderately suited to loblolly pine, southern red oak, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Figure 3.—Soybeans in an area of Cecil fine sandy loam, 2 to 6 percent slopes.

Septic tank absorption fields
- Seepage limits the proper treatment of the effluent from conventional septic systems and may pollute the water table.
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: X
Hydric soil: No

CeC—Cecil fine sandy loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Cecil and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

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

Subsoil:
7 to 16 inches—yellowish red clay; few red mottles
16 to 45 inches—red clay
45 to 55 inches—red sandy clay loam

Substratum:
55 to 62 inches—red, reddish yellow, yellowish red, and pinkish white sandy loam saprolite

Minor Components

Dissimilar components:
- Abell and Helena soils, which are moderately well drained; in the slightly lower areas
- Worsham soils, which are poorly drained; in drainageways

Similar components:
- Appling soils, which have yellower colors than the Cecil soil; in similar areas
- Cullen soils, which have more clay in the subsoil than the Cecil soil; in similar areas
- Pacolet soils, which have a thinner subsoil than the Cecil soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.0 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Well suited to northern red oak; moderately suited to loblolly pine, southern red oak, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Seepage limits the proper treatment of the effluent from conventional septic systems and may pollute the water table.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: X
Hydric soil: No

CgC—Cecil clay loam, 6 to 12 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Cecil and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

Surface layer:
0 to 4 inches—reddish brown clay loam

Subsoil:
4 to 16 inches—yellowish red clay; few red mottles
16 to 45 inches—red clay
45 to 55 inches—red sandy clay loam

Substratum:
55 to 62 inches—red, reddish yellow, yellowish red, and pinkish white sandy loam saprolite

Minor Components

Dissimilar components:
- Abell and Helena soils, which are moderately well drained; in the slightly lower areas

Similar components:
- Appling soils, which have yellower colors than the Cecil soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 6.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat; poorly suited to corn, soybeans, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Seepage limits the proper treatment of the effluent from conventional septic systems and may pollute the water table.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: X
Hydric soil: No

ChA—Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plains
Position on the landform: Nearly level treads

Map Unit Composition

Chewacla and similar soils: Typically 60 percent, ranging from about 55 to 65 percent

Typical Profile

Surface layer:
0 to 6 inches—yellowish brown silt loam; yellowish red masses of oxidized iron

Subsurface layer:
6 to 12 inches—yellowish brown silt loam; yellowish red masses of oxidized iron and black manganese masses

Subsoil:
12 to 18 inches—dark yellowish brown loam; brown masses of oxidized iron and black manganese masses
18 to 44 inches—grayish brown loam; black manganese masses and strong brown masses of oxidized iron

Substratum:
44 to 62 inches—yellowish brown and grayish brown silty clay loam; black manganese masses

Minor Components

Dissimilar components:
- Congaree soils, which are well drained and moderately well drained; in similar areas
- Wehadkee soils, which are poorly drained; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 10.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Somewhat poorly drained
Depth to seasonal water saturation: About 0.5 foot to 1.5 feet
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high

Surface fragments: None
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland
Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Flooding may damage crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture
Suitability: Well suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland
Suitability: Well suited to loblolly pine; moderately suited to yellow-poplar and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- Flooding limits the use of the soil for building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields
- Flooding limits the use of the soil for septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 4w
Virginia soil management group: I
Hydric soil: No

CoA—Congaree silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plains
Position on the landform: Nearly level treads

Map Unit Composition

Congaree and similar soils: Typically 90 percent, ranging from about 80 to 100 percent

Typical Profile

Surface layer:
0 to 10 inches—dark yellowish brown silt loam

Substratum:
10 to 24 inches—yellowish brown silty clay loam
24 to 41 inches—brown silty clay loam; black manganese masses
41 to 58 inches—brown and strong brown silty clay loam; black manganese masses
58 to 62 inches—reddish yellow and brown silty clay loam; black manganese masses

Minor Components

Dissimilar components:
- Chewacla soils, which are somewhat poorly drained; in similar areas

Similar components:
- Toccoa soils, which are well drained or moderately well drained; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 9.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 2.5 to 4.0 feet
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland
Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Flooding may damage crops.

Pasture
Suitability: Well suited
- Flooding may damage pastures.

Woodland

Suitability: Well suited to loblolly pine, yellow-poplar, and sweetgum

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites

- Flooding limits the use of the soil for building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Flooding limits the use of the soil for septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2w
Virginia soil management group: A
Hydric soil: No

CrA—Congaree-Chewacla complex, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plains
Position on the landform: Nearly level treads; Congaree—in the slightly higher landform positions; Chewacla—in the slightly lower landform positions

Map Unit Composition

Congaree and similar soils: Typically 55 percent, ranging from about 40 to 60 percent
Chewacla and similar soils: Typically 35 percent, ranging from about 25 to 45 percent

Typical Profile

Congaree

Surface layer:
0 to 10 inches—dark yellowish brown silt loam

Substratum:
10 to 24 inches—yellowish brown silty clay loam
24 to 41 inches—brown silty clay loam; black manganese masses
41 to 58 inches—brown and strong brown silty clay loam; black manganese masses
58 to 62 inches—reddish yellow and brown silty clay loam; black manganese masses

Chewacla

Surface layer:

0 to 6 inches—yellowish brown silt loam; yellowish red masses of oxidized iron

Subsurface layer:

6 to 12 inches—yellowish brown silt loam; yellowish red masses of oxidized iron and black manganese masses

Subsoil:

12 to 18 inches—dark yellowish brown loam; brown masses of oxidized iron and black manganese masses

18 to 44 inches—grayish brown loam; black manganese masses and strong brown masses of oxidized iron

Substratum:

44 to 62 inches—yellowish brown and grayish brown silty clay loam; black manganese masses

Minor Components

Dissimilar components:

- Wehadkee soils, which are poorly drained; in similar areas

Similar components:

- Toccoa soils, which are well drained or moderately well drained; in similar areas

Soil Properties and Qualities

Available water capacity: Congaree—high (about 9.6 inches); Chewacla—high (about 10.7 inches)

Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)

Depth class: Very deep (more than 60 inches)

Depth to root-restrictive feature: More than 60 inches

Drainage class: Congaree—moderately well drained; Chewacla—somewhat poorly drained

Depth to seasonal water saturation: Congaree—about 2.5 to 4.0 feet; Chewacla—about 0.5 foot to 1.5 feet

Water table kind: Apparent

Flooding hazard: Frequent

Ponding hazard: None

Shrink-swell potential: Low

Runoff class: Congaree—low; Chewacla—very high

Surface fragments: None

Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay

- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Frequent flooding restricts the use of winter grain crops.
- Flooding may damage crops.

Pasture

Suitability: Well suited

- Flooding may damage pastures.

Woodland
Suitability: Well suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- Flooding limits the use of the soil for building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields
- Flooding limits the use of the soil for septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- Flooding may damage local roads and streets.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Chewacla—6w; Congaree—3w
Virginia soil management group: Chewacla—I; Congaree—A
Hydric soil: Chewacla—yes; Congaree—no

CuB—Cullen clay loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, broad summits on ridges

Map Unit Composition

Cullen and similar soils: Typically 95 percent, ranging from about 90 to 98 percent

Typical Profile

Surface layer:
0 to 8 inches—reddish brown clay loam

Subsoil:
8 to 30 inches—red clay
30 to 62 inches—red silty clay

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in the slightly lower areas
- Enott soils, which are deep to soft bedrock and have slower permeability than the Cullen soil; in similar areas

Similar components:
- Georgeville, Herndon, and Pacolet soils, which have less clay in the subsoil than the Cullen soil; in similar areas
- Hiwassee soils, which have less clay in the subsoil than the Cullen soil; on high stream terraces

Soil Properties and Qualities

Available water capacity: Moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from mixed acid and basic crystalline rocks

Use and Management Considerations

Cropland
Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- Clods may form if the soil is tilled when wet.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine, northern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.

- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: N
Hydric soil: No

CuC—Cullen clay loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Cullen and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

Surface layer:
0 to 8 inches—reddish brown clay loam

Subsoil:
8 to 30 inches—red clay
30 to 62 inches—red silty clay

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in the slightly lower areas
- Enott soils, which are deep to soft bedrock and have slower permeability than the Cullen soil; in similar areas

Similar components:
- Pacolet soils, which have less clay in the subsoil than the Cullen soil; in similar areas
- Hiwassee soils, which have less clay in the subsoil than the Cullen soil; on high stream terraces
- Soils that have dark red, clayey subsoils; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from mixed acid and basic crystalline rocks

Use and Management Considerations

Cropland

Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- Clods may form if the soil is tilled when wet.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to loblolly pine, northern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: N
Hydric soil: No

DAM—Dam

Typical Profile

This map units consists of barriers constructed across waterways to control the flow and the level of water in the waterways.

Onsite investigation is needed to determine the suitability of this map unit for specific uses.

EnB—Enott loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, narrow to broad summits on ridges

Map Unit Composition

Enott and similar soils: Typically 80 percent, ranging from about 75 to 85 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loam; iron-manganese concretions

Subsoil:
6 to 12 inches—light yellowish brown loam; yellowish brown masses of oxidized iron and iron-manganese concretions
12 to 17 inches—yellowish brown clay; strong brown masses of oxidized iron and iron-manganese concretions
17 to 24 inches—strong brown clay
24 to 30 inches—yellowish brown clay; pale brown and strong brown masses of oxidized iron
30 to 36 inches—light olive brown clay loam; strong brown masses of oxidized iron

Substratum:
36 to 55 inches—light olive brown clay loam

Soft bedrock:
55 to 62 inches—highly weathered greenish rock

Minor Components

Dissimilar components:
- Cullen soils, which are very deep to bedrock and have more clay in the subsoil than the Enott soil; in similar areas
- Herndon soils, which are very deep to bedrock; in similar areas
- Iredell and Orange soils, which are moderately well drained and somewhat poorly drained, respectively; in the slightly lower areas
- Mattaponi soils, which are very deep to bedrock and are moderately well drained; in similar areas
- Soils that are shallow to bedrock; in similar areas

Similar components:
- Soils that are very deep and deep, have a red, clayey subsoil, and have slow permeability; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.0 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 60 inches to paralithic bedrock

Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from basic crystalline rocks

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn, soybeans, and wheat

- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture

Suitability: Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to yellow-poplar and sweetgum; poorly suited to loblolly pine

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2e
Virginia soil management group: Y
Hydric soil: No

EnC—Enott loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping summits and backslopes

Map Unit Composition

Enott and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loam; iron-manganese concretions

Subsoil:
6 to 12 inches—light yellowish brown loam; yellowish brown masses of oxidized iron and iron-manganese concretions
12 to 17 inches—yellowish brown clay; strong brown masses of oxidized iron and iron-manganese concretions
17 to 24 inches—strong brown clay
24 to 30 inches—yellowish brown clay; pale brown and strong brown masses of oxidized iron
30 to 36 inches—light olive brown clay loam; strong brown masses of oxidized iron

Substratum:
36 to 55 inches—light olive brown clay loam

Soft bedrock:
55 to 62 inches—highly weathered greenish rock

Minor Components

Dissimilar components:
- Abell soils, which are very deep and are moderately well drained; in the slightly lower areas
- Orange soils, which are somewhat poorly drained; in the slightly lower areas
- Tatum soils, which are very deep to bedrock, have moderate permeability, and have redder colors than the Enott soil; in similar areas
- Worsham soils, which are poorly drained; in drainageways
- Soils that are shallow to bedrock; in similar areas

Similar components:
- Soils that are deep, have a red clayey subsoil, and have slow permeability; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.0 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High

Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from basic crystalline rocks

Use and Management Considerations

Cropland
Suitability: Moderately suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to yellow-poplar and sweetgum; poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Y
Hydric soil: No

GeB—Georgeville silt loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, broad summits on ridges

Map Unit Composition

Georgeville and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsurface layer:
9 to 14 inches—strong brown silt loam

Subsoil:
14 to 20 inches—yellowish red silty clay loam
20 to 27 inches—red clay; few yellowish brown mottles
27 to 49 inches—red silty clay
49 to 57 inches—red silty clay loam

Substratum:
57 to 62 inches—red and strong brown silt loam

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained and have less clay in the subsoil than the Georgeville soil; in the slightly lower areas

Similar components:
- Cullen soils, which have more clay in the subsoil than the Georgeville soil; in similar areas
- Herndon soils, which have yellower colors in the subsoil than the Georgeville soil; in similar areas
- Soils that are severely eroded; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 10.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn and soybeans

- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: X
Hydric soil: No

GeC—Georgeville silt loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Georgeville and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsurface layer:
9 to 14 inches—strong brown silt loam

Subsoil:
14 to 20 inches—yellowish red silty clay loam

20 to 27 inches—red clay; few yellowish brown mottles
27 to 49 inches—red silty clay
49 to 57 inches—red silty clay loam

Substratum:
57 to 62 inches—red and strong brown silt loam

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained and have less clay in the subsoil than the Georgeville soil; in the slightly lower areas
- Goldston soils, which are shallow to soft bedrock; in similar areas
- Nason and Tatum soils, which are deep to soft bedrock; in similar areas

Similar components:
- Herndon soils, which have yellower colors in the subsoil than the Georgeville soil; in similar areas
- Soils that are severely eroded; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 10.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Moderately suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.

- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: X
Hydric soil: No

GgB—Georgeville silty clay loam, 2 to 6 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, broad summits on ridges

Map Unit Composition

Georgeville and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

Surface layer:
0 to 7 inches—brown silty clay loam

Subsoil:
7 to 20 inches—yellowish red silty clay loam
20 to 27 inches—red clay; few yellowish brown mottles
27 to 41 inches—red silty clay
41 to 52 inches—red silty clay loam

Substratum:
52 to 62 inches—red and strong brown silt loam

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained and have less clay in the subsoil than the Georgeville soil; in the slightly lower areas

Similar components:
- Herndon soils, which have yellower colors in the subsoil than the Georgeville soil; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 9.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat; poorly suited to corn, soybeans, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: X
Hydric soil: No

GgC—Georgeville silty clay loam, 6 to 12 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Georgeville and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

Surface layer:
0 to 7 inches—brown silty clay loam

Subsoil:
7 to 20 inches—yellowish red silty clay loam
20 to 27 inches—red clay; few yellowish brown mottles
27 to 41 inches—red silty clay
41 to 52 inches—red silty clay loam

Substratum:
52 to 62 inches—red and strong brown silt loam

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained and have less clay in the subsoil than the Georgeville soil; in the slightly lower areas

Similar components:
- Cullen soils, which have more clay in the subsoil than the Georgeville soil; in similar areas
- Herndon soils, which have yellower colors in the subsoil than the Georgeville soil; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 9.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat; poorly suited to corn, soybeans, and grass-legume hay

- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: X
Hydric soil: No

GoC—Goldston channery silt loam, 6 to 20 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping and moderately steep shoulders and backslopes

Note: Although slopes range from 6 to 20 percent, most areas have slopes of 6 to 12 percent.

Map Unit Composition

Goldston and similar soils: Typically 85 percent, ranging from about 75 to 95 percent

Typical Profile

Surface layer:
0 to 1 inch—light yellowish brown channery silt loam

Subsurface layer:
1 to 6 inches—yellowish brown very channery silt loam

Subsoil:
6 to 15 inches—yellowish brown very channery silt loam

Soft bedrock:
15 to 41 inches—multicolored, weathered sericite schist

Hard bedrock:
41 to 44 inches—sericite schist

Minor Components

Dissimilar components:
- Abell soils, which are very deep to bedrock and are moderately well drained; in the slightly lower areas
- Wedowee soils, which are very deep to bedrock and are well drained; in similar areas
- Worsham soils, which are very deep to bedrock and are poorly drained; in drainageways

Similar components:
- Louisburg soils, which are moderately deep to bedrock and are well drained; in similar areas
- Nason and Tatum soils, which are deep to bedrock and are well drained; in similar areas

Soil Properties and Qualities

Available water capacity: Very low (about 1.4 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Shallow (10 to 20 inches)
Depth to root-restrictive feature: 10 to 20 inches to paralithic bedrock; 20 to 41 inches to lithic bedrock
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from slate, phyllite, and sericite schist

Use and Management Considerations

Cropland
Suitability: Unsuited

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland
Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of proper installation of the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: JJ
Hydric soil: No

GuC—Gullied land, 6 to 30 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Variable

Map Unit Composition

Gullied land and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Gullied land consists of areas where erosion has cut a network of V-shaped or U-shaped channels. The channels are about 0.5 foot to 4.0 feet deep and 1.0 foot to 20.0 feet wide. This map unit is scattered throughout the county. The dominantly associated soils are Appling, Cecil, Georgeville, Herndon, Nason, Pacolet, and Tatum. Severely eroded phases of these soils are included in this map unit.

Onsite investigation is needed to determine the suitability for specific uses. This map unit has no interpretive groups.

HaB—Helena fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, broad summits on ridges; toeslopes along drainageways; and heads of drainageways

Map Unit Composition

Helena and similar soils: Typically 90 percent, ranging from about 85 to 100 percent

Typical Profile

Surface layer:
0 to 9 inches—brown fine sandy loam

Subsurface layer:
9 to 12 inches—light yellowish brown sandy loam; brown and yellowish brown masses of oxidized iron

Subsoil:
12 to 24 inches—yellowish brown clay; yellowish red and light yellowish brown masses of oxidized iron
24 to 36 inches—brownish yellow clay; light brownish gray iron depletions
36 to 42 inches—light brownish gray clay; brownish yellow masses of oxidized iron

Substratum:
42 to 54 inches—light olive brown loam saprolite; light brownish gray iron depletions
54 to 62 inches—yellow loam saprolite; light brownish gray iron depletions

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in colluvial and alluvial areas
- Pacolet and Wedowee soils, which are well drained; in similar areas
- Louisburg soils, which are moderately deep to bedrock; in similar areas
- Worsham soils, which are poorly drained; in drainageways

Similar components:
- Enott soils, which are deep to soft bedrock; in similar areas
- Mattaponi soils, which are moderately well drained; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 1.5 to 2.5 feet
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from mixed acid and basic crystalline rocks

Use and Management Considerations

Cropland
Suitability: Moderately suited to grass-legume hay, poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.
- This soil is well suited to haul roads and log landings.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: KK
Hydric soil: No

HbC—Helena-Worsham complex, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands

Position on the landform: Strongly sloping shoulders and backslopes along drainageways and around heads of drainageways; Helena—in the higher, more sloping areas; Worsham—in the lower areas

Map Unit Composition

Helena and similar soils: Typically 60 percent, ranging from about 45 to 75 percent
Worsham and similar soils: Typically 20 percent, ranging from about 15 to 25 percent

Typical Profile

Helena
Surface layer:
0 to 9 inches—brown fine sandy loam

Subsurface layer:
9 to 12 inches—light yellowish brown sandy loam; brown and yellowish brown masses of oxidized iron

Subsoil:
12 to 24 inches—yellowish brown clay; yellowish red and light yellowish brown masses of oxidized iron
24 to 36 inches—brownish yellow clay; light brownish gray iron depletions
36 to 42 inches—light brownish gray clay; brownish yellow masses of oxidized iron

Substratum:
42 to 54 inches—light olive brown loam saprolite; light brownish gray iron depletions
54 to 62 inches—yellow loam saprolite; light brownish gray iron depletions

Worsham
Organic layer:
0 to 2 inches—loose leaves and twigs

Surface layer:
2 to 3 inches—very dark grayish brown fine sandy loam

Subsurface layer:
3 to 6 inches—grayish brown and light brownish gray sandy loam; black manganese coatings
6 to 12 inches—light brownish gray sandy loam; yellowish brown masses of oxidized iron

Subsoil:
12 to 26 inches—light brownish gray clay; brownish yellow masses of oxidized iron
26 to 40 inches—gray clay loam; yellow masses of oxidized iron
40 to 49 inches—light gray sandy clay loam

Substratum:
49 to 62 inches—light gray sandy loam

Minor Components

Dissimilar components:
- Wedowee soils, which are well drained; in similar areas
- Louisburg soils, which are moderately deep to bedrock; in similar areas

Similar components:
- Enott soils, which are deep to soft bedrock; in similar areas
- Iredell soils, which are deep to soft bedrock and are moderately well drained or somewhat poorly drained; in the lower areas
- Mattaponi soils, which are moderately well drained; in similar areas

Soil Properties and Qualities

Available water capacity: Helena—moderate (about 7.7 inches); Worsham—moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Helena—moderately low (about 0.06 in/hr); Worsham—low (about 0.001 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Helena—moderately well drained; Worsham—poorly drained
Depth to seasonal water saturation: Helena—about 1.5 to 2.5 feet; Worsham—about 0 to 1.0 foot
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Helena—high; Worsham—moderate
Runoff class: Helena—medium; Worsham—very high
Surface fragments: None
Parent material: Helena—residuum weathered from mixed acid and basic crystalline rocks; Worsham—clayey local alluvial and colluvial sediments

Use and Management Considerations

Cropland
Suitability: Moderately suited to grass-legume hay; poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.
- These soils are well suited to haul roads and log landings.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The use of the soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Helena—3e; Worsham—4w
Virginia soil management group: Helena—KK; Worsham—HH
Hydric soil: Helena—no; Worsham—yes

HeB—Herndon silt loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, narrow to broad summits on ridges

Map Unit Composition

Herndon and similar soils: Typically 90 percent, ranging from about 80 to 100 percent

Typical Profile

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

Subsurface layer:
6 to 11 inches—yellowish brown silt loam

Subsoil:
11 to 16 inches—strong brown silty clay loam
16 to 41 inches—strong brown silty clay
41 to 59 inches—yellowish brown, brownish yellow, and yellowish red silt loam

Substratum:
59 to 62 inches—brownish yellow, yellowish red, and red silt loam saprolite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in colluvial and alluvial areas
- Enott soils, which are deep to bedrock and have thinner sola and slower permeability than the Herndon soil; in similar areas
- Orange soils, which are deep to bedrock and have thinner sola and slower permeability than the Herndon soil; in similar areas
- Goldston soils, which are shallow to soft bedrock; in similar areas

Similar components:
- Appling and Cecil soils, which have less silt in the subsoil than the Herndon soil; in similar areas

- Georgeville soils, which have a redder subsoil than the Herndon soil; in similar areas
- Nason soils, which are deep to bedrock; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 10.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e

Virginia soil management group: V
Hydric soil: No

HeC—Herndon silt loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Herndon and similar soils: Typically 85 percent, ranging from about 80 to 95 percent

Typical Profile

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

Subsurface layer:
6 to 11 inches—yellowish brown silt loam

Subsoil:
11 to 16 inches—strong brown silty clay loam
16 to 41 inches—strong brown silty clay
41 to 59 inches—yellowish brown, brownish yellow, and yellowish red silt loam

Substratum:
59 to 62 inches—brownish yellow, yellowish red, and red silt loam saprolite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in colluvial and alluvial areas
- Worsham soils, which are poorly drained; in drainageways
- Soils that are poorly drained; along drainageways

Similar components:
- Appling and Wedowee soils, which have less silt in the subsoil than the Herndon soil; in similar areas
- Georgeville soils, which have a redder subsoil than the Herndon soil; in similar areas
- Nason soils, which are deep to bedrock; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 10.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Moderately suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: V
Hydric soil: No

HwB—Hiwassee clay loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: High terraces
Position on the landform: Gently sloping treads

Map Unit Composition

Hiwassee and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

Surface layer:
0 to 12 inches—dark reddish brown clay loam

Subsoil:
12 to 28 inches—dark reddish brown clay; black manganese masses
28 to 48 inches—dark red clay
48 to 62 inches—red clay loam

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in colluvial and alluvial areas

Similar components:
- Cullen soils, which have more clay in the subsoil than the Hiwassee soil; on uplands

Soil Properties and Qualities

Available water capacity: Moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Old alluvium derived from mixed acid and basic crystalline rocks

Use and Management Considerations

Cropland
Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to southern red oak and northern red oak; poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: O
Hydric soil: No

IrB—Iredell loam, 1 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Nearly level and gently sloping, broad, flat areas; swales; and slight depressions

Map Unit Composition

Iredell and similar soils: Typically 90 percent, ranging from about 80 to 100 percent

Typical Profile

Surface layer:
0 to 9 inches—yellowish brown loam

Subsoil:
9 to 12 inches—light olive brown clay loam
12 to 24 inches—yellowish brown clay
24 to 30 inches—light olive brown clay
30 to 35 inches—light olive brown clay; light brownish gray iron depletions
35 to 40 inches—pale olive and light olive brown clay loam; greenish gray iron depletions

Substratum:
40 to 49 inches—greenish gray, olive yellow, and light brownish gray sandy loam

Soft bedrock:
49 to 62 inches—yellowish brown, olive yellow, and greenish gray rock

Minor Components

Dissimilar components:
- Worsham soils, which are very deep to bedrock and are poorly drained; in drainageways

Similar components:
- Enott soils, which are well drained; in the higher areas
- Helena soils, which are very deep to bedrock and are well drained; in the higher areas

- Orange soils, which are deep to bedrock; in similar areas
- Soils that are well drained and have red clayey subsoils; in the slightly higher areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.5 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 1.0 foot to 2.0 feet
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Very high
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from basic crystalline rocks

Use and Management Considerations

Cropland
Suitability: Moderately suited to grass-legume hay; poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2e
Virginia soil management group: KK
Hydric soil: No

IrC—Iredell loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Iredell and similar soils: Typically 75 percent, ranging from about 65 to 85 percent

Typical Profile

Surface layer:
0 to 9 inches—yellowish brown loam

Subsoil:
9 to 12 inches—light olive brown clay loam
12 to 24 inches—yellowish brown clay
24 to 30 inches—light olive brown clay
30 to 35 inches—light olive brown clay; light brownish gray iron depletions
35 to 40 inches—pale olive and light olive brown clay loam; greenish gray iron depletions

Substratum:
40 to 49 inches—greenish gray, olive yellow, and light brownish gray sandy loam

Soft bedrock:
49 to 62 inches—yellowish brown, olive yellow, and greenish gray rock

Minor Components

Dissimilar components:
- Abell soils, which are very deep to bedrock and are moderately well drained; in similar areas
- Louisburg soils, which are moderately deep and are well drained; in similar areas
- Wedowee soils, which are very deep and are well drained; in the higher areas
- Soils that are shallow to hard, basic rock; in similar areas

Similar components:
- Enott soils, which are well drained; in the higher areas
- Helena soils, which are very deep to bedrock and are well drained; in the higher areas
- Orange soils, which are deep to bedrock; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.5 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 1.0 foot to 2.0 feet
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Very high
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from basic crystalline rocks

Use and Management Considerations

Cropland
Suitability: Moderately suited to grass-legume hay; poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: KK
Hydric soil: No

LoB—Louisburg sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping summits on ridges

Map Unit Composition

Louisburg and similar soils: Typically 85 percent, ranging from about 70 to 100 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—dark grayish brown sandy loam
2 to 9 inches—brown sandy loam

Subsurface layer:
9 to 15 inches—light yellowish brown sandy loam

Subsoil:
15 to 29 inches—brownish yellow sandy loam and yellowish brown sandy clay loam

Soft bedrock:
29 to 46 inches—multicolored rock

Hard bedrock:
46 to 48 inches—hard gneiss and granite rock

Minor Components

Dissimilar components:
- Wedowee soils, which are very deep to bedrock and are well drained; in similar areas

Similar components:
- Soils that are shallow to bedrock; in similar areas

Soil Properties and Qualities

Available water capacity: Low (about 3.4 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite or granite gneiss

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and wheat; poorly suited to soybeans

- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- The limited available water capacity may cause plants to suffer from moisture stress.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture

Suitability: Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Bedrock may interfere with the construction of haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of proper installation of the effluent distribution lines is increased.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: FF
Hydric soil: No

LoC—Louisburg sandy loam, 6 to 20 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping and moderately steep shoulders and backslopes

Map Unit Composition

Louisburg and similar soils: Typically 85 percent, ranging from about 70 to 100 percent

Typical Profile

Organic layer:
0 to 1 inch—moderately decomposed plant material

Surface layer:
1 to 2 inches—dark grayish brown sandy loam
2 to 9 inches—brown sandy loam

Subsurface layer:
9 to 15 inches—light yellowish brown sandy loam

Subsoil:
15 to 29 inches—brownish yellow sandy loam and yellowish brown sandy clay loam

Soft bedrock:
29 to 46 inches—multicolored rock

Hard bedrock:
46 to 48 inches—hard gneiss and granite rock

Minor Components

Dissimilar components:
- Abell soils, which are very deep and are moderately well drained; in colluvial and alluvial areas
- Appling soils, which are very deep and are well drained; in similar areas
- Enott soils, which are well drained and have slow permeability; in similar areas
- Helena soils, which are very deep and are moderately well drained; in similar areas

Similar components:
- Pacolet and Wedowee soils, which are very deep and are well drained; in similar areas
- Stony areas on slopes of 20 to 45 percent; in similar areas
- Soils that are shallow; in similar areas

Soil Properties and Qualities

Available water capacity: Low (about 3.4 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)

Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from granite or granite gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- The limited available water capacity may cause plants to suffer from moisture stress.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland
Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of proper installation of the effluent distribution lines is increased.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: FF
Hydric soil: No

MdB—Masada fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: High terraces
Position on the landform: Gently sloping treads

Map Unit Composition

Masada and similar soils: Typically 85 percent, ranging from about 80 to 95 percent

Typical Profile

Surface layer:
0 to 3 inches—dark yellowish brown fine sandy loam
3 to 8 inches—yellowish brown fine sandy loam

Subsoil:
8 to 11 inches—yellowish brown sandy clay loam
11 to 17 inches—strong brown clay
17 to 23 inches—yellowish red, brownish yellow, and red clay
23 to 41 inches—red, brownish yellow, and yellowish red clay loam

Substratum:
41 to 58 inches—red and brownish yellow clay loam; common very pale brown mottles
58 to 62 inches—brownish yellow and red loam; common very pale brown mottles

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in colluvial and alluvial areas

Similar components:
- Cecil soils, which can have redder colors and have angular quartz gravel; on uplands
- Cullen soils, which have more clay in the subsoil than the Masada soil; on uplands
- Hiwassee soils, which have a dark red subsoil; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 9.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Old alluvium derived from acid crystalline rocks

Use and Management Considerations

Cropland
Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine, southern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.
- This soil is well suited to haul roads and log landings.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: L
Hydric soil: No

MtB—Mattaponi fine sandy loam, 1 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Nearly level and gently sloping broad summits on ridges

Map Unit Composition

Mattaponi and similar soils: Typically 90 percent, ranging from about 85 to 100 percent

Typical Profile

Surface layer:
0 to 9 inches—yellowish brown fine sandy loam

Subsurface layer:
9 to 16 inches—light yellowish brown fine sandy loam

Subsoil:
16 to 23 inches—brownish yellow clay; strong brown and brownish yellow masses of oxidized iron
23 to 35 inches—brownish yellow clay; red and brownish yellow masses of oxidized iron
35 to 51 inches—brownish yellow clay; red and very pale brown masses of oxidized iron
51 to 58 inches—yellowish brown clay; light gray iron depletions and red masses of oxidized iron

Substratum:
58 to 62 inches—yellowish brown clay loam; light gray iron depletions and red masses of oxidized iron

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in colluvial and alluvial areas

Similar components:
- Cecil soils, which are well drained; on uplands
- Cullen soils, which have more clay in the subsoil than the Masada soil; on uplands
- Hiwassee soils, which have a dark red subsoil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 3.0 to 5.0 feet
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Clayey marine sediments

Use and Management Considerations

Cropland
Suitability: Well suited to soybeans, wheat, and grass-legume hay; moderately suited to corn
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and sweetgum

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: R
Hydric soil: No

MtC—Mattaponi fine sandy loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Mattaponi and similar soils: Typically 90 percent, ranging from about 85 to 100 percent

Typical Profile

Surface layer:
0 to 9 inches—yellowish brown fine sandy loam

Subsurface layer:
9 to 16 inches—light yellowish brown fine sandy loam

Subsoil:
16 to 23 inches—brownish yellow clay; strong brown and brownish yellow masses of oxidized iron
23 to 35 inches—brownish yellow clay; red and brownish yellow masses of oxidized iron
35 to 51 inches—brownish yellow clay; red and very pale brown masses of oxidized iron
51 to 58 inches—yellowish brown clay; light gray iron depletions and red masses of oxidized iron

Substratum:
58 to 62 inches—yellowish brown clay loam; light gray iron depletions and red masses of oxidized iron

Minor Components

Dissimilar components:
- Louisburg soils, which are moderately deep to bedrock and are well drained; in similar areas

Similar components:
- Abell soils, which have less clay than the Mattaponi soil; in drainageways and around the heads of drainageways
- Appling soils, which are well drained; in similar areas
- Cecil soils, which are well drained; in similar areas
- Helena soils, which have a slower permeability than the Mattaponi soil and developed from residuum; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 8.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 3.0 to 5.0 feet
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Clayey marine sediments

Use and Management Considerations

Cropland
Suitability: Well suited to grass-legume hay; moderately suited to corn, soybeans, wheat, and alfalfa hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: R
Hydric soil: No

NaD—Nason silt loam, 12 to 20 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Moderately steep backslopes

Map Unit Composition

Nason and similar soils: Typically 70 percent, ranging from about 55 to 85 percent

Typical Profile

Organic layer:
0 to 2 inches—partially decomposed leaves and twigs

Surface layer:
2 to 5 inches—brown silt loam

Subsurface layer:
5 to 13 inches—yellowish brown silt loam

Subsoil:
13 to 25 inches—strong brown silty clay
25 to 30 inches—strong brown channery silty clay loam

Substratum:
30 to 58 inches—strong brown, yellowish red, and reddish yellow channery silt loam

Soft bedrock:
58 to 62 inches—sericite schist

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in drainageways and around heads of drainageways
- Goldston soils, which are shallow to bedrock; in similar areas

Similar components:
- Georgeville soils, which are very deep to bedrock and are redder in the subsoil than the Nason soil; in similar areas
- Herndon soils, which are very deep to bedrock; in similar areas
- Tatum soils, which have a redder subsoil than the Nason soil; in similar areas

Soil Properties and Qualities

Available water capacity: High (about 10.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- The slope may restrict the use of some mechanical planting equipment.

- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: V
Hydric soil: No

OaB—Orange silt loam, 1 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Nearly level and gently sloping, broad, flat areas; swales; and slight depressions

Map Unit Composition

Orange and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam; very dark grayish brown iron-manganese concretions

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

Subsoil:
15 to 22 inches—yellowish brown clay
22 to 30 inches—yellowish brown clay; gray iron depletions
30 to 36 inches—yellowish brown clay; light brownish gray iron depletions and strong brown masses of oxidized iron
36 to 41 inches—brown clay; light brownish gray iron depletions and strong brown masses of oxidized iron

Soft bedrock:
41 to 48 inches—dark greenish gray, brownish yellow, and olive weathered rock

Hard bedrock:
48 to 58 inches—mixed basic and phyllite rock

Minor Components

Dissimilar components:
- Goldston soils, which are shallow to bedrock and are excessively drained; in similar areas
- Herndon soils, which are very deep to bedrock and are well drained; in similar areas
- Enott soils, which are deep to bedrock and are well drained; in similar areas

Similar components:
- Iredell soils, which are deep to bedrock and are moderately well drained; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 6.4 inches)
Slowest saturated hydraulic conductivity: Low (about 0.001 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 55 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Depth to seasonal water saturation: About 1.0 foot to 3.0 feet
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from basic crystalline rocks or mixed acid and basic rocks

Use and Management Considerations

Cropland
Suitability: Moderately suited to grass-legume hay; poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland
Suitability: Moderately suited to loblolly pine and northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: KK
Hydric soil: No

OaC—Orange silt loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Orange and similar soils: Typically 70 percent, ranging from about 40 to 95 percent

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam; very dark grayish brown iron-manganese concretions

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

Subsoil:
15 to 22 inches—yellowish brown clay
22 to 30 inches—yellowish brown clay; gray iron depletions
30 to 36 inches—yellowish brown clay; light brownish gray iron depletions and strong brown masses of oxidized iron
36 to 41 inches—brown clay; light brownish gray iron depletions and strong brown masses of oxidized iron

Soft bedrock:
41 to 48 inches—dark greenish gray, brownish yellow, and olive weathered rock

Hard bedrock:
48 to 58 inches—mixed basic and phyllite rock

Minor Components

Dissimilar components:
- Enott soils, which are deep to bedrock and are well drained; in similar areas
- Worsham soils, which are very deep to bedrock and are poorly drained; in areas along drainageways

Soil Properties and Qualities

Available water capacity: Moderate (about 6.4 inches)
Slowest saturated hydraulic conductivity: Low (about 0.001 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 55 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Depth to seasonal water saturation: About 1.0 foot to 3.0 feet
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from basic crystalline rocks or mixed acid and basic rocks

Use and Management Considerations

Cropland
Suitability: Moderately suited to grass-legume hay; poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland
Suitability: Moderately suited to loblolly pine and northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.

- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: KK
Hydric soil: No

PaB—Pacolet fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Gently sloping, broad summits on ridges

Map Unit Composition

Pacolet and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

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

Subsurface layer:
3 to 9 inches—yellowish brown fine sandy loam

Subsoil:
9 to 13 inches—red clay loam; common brownish yellow mottles
13 to 24 inches—red clay
24 to 36 inches—red clay loam

Substratum:
36 to 62 inches—strong brown, red, and yellowish brown sandy loam saprolite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in areas along drainageways

Similar components:
- Cecil soils, which have a thicker subsoil than the Pacolet soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss

Use and Management Considerations

Cropland
Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine (fig. 4) and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- This soil is well suited to septic tank absorption fields.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.

Figure 4.—Thinned stand of loblolly pine in an area of Pacolet fine sandy loam, 2 to 6 percent slopes.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2e
Virginia soil management group: X
Hydric soil: No

PaC—Pacolet fine sandy loam, 6 to 12 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Strongly sloping shoulders and backslopes

Map Unit Composition

Pacolet and similar soils: Typically 90 percent, ranging from about 80 to 100 percent

Typical Profile

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

Subsurface layer:
3 to 9 inches—yellowish brown fine sandy loam

Subsoil:
9 to 13 inches—red clay loam; common brownish yellow mottles
13 to 24 inches—red clay
24 to 36 inches—red clay loam

Substratum:
36 to 62 inches—strong brown, red, and yellowish brown sandy loam saprolite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in areas along drainageways
- Louisburg soils, which are moderately deep to bedrock; in similar areas

Similar components:
- Cecil soils, which have a thicker subsoil than the Pacolet soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to corn, soybeans, wheat, and grass-legume hay
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: X
Hydric soil: No

PaD—Pacolet fine sandy loam, 12 to 20 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Moderately steep backslopes

Map Unit Composition

Pacolet and similar soils: Typically 85 percent, ranging from about 70 to 95 percent

Typical Profile

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

Subsurface layer:
3 to 9 inches—yellowish brown fine sandy loam

Subsoil:
9 to 13 inches—red clay loam; common brownish yellow mottles
13 to 24 inches—red clay
24 to 36 inches—red clay loam

Substratum:
36 to 62 inches—strong brown, red, and yellowish brown sandy loam saprolite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in areas along drainageways
- Helena soils, which are moderately well drained; in similar areas
- Enott soils, which are deep to bedrock and have a slower permeability than the Pacolet soil; in similar areas
- Louisburg soils, which are moderately deep to bedrock; in similar areas
- Worsham soils, which are poorly drained; in areas along drainageways

Similar components:
- Wedowee soils, which have a yellower subsoil than the Pacolet soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained

Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: X
Hydric soil: No

PcD—Pacolet clay loam, 12 to 20 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Moderately steep backslopes

Map Unit Composition

Pacolet and similar soils: Typically 85 percent, ranging from about 80 to 95 percent

Typical Profile

Surface layer:
0 to 3 inches—reddish brown clay loam

Subsoil:
3 to 13 inches—red clay loam; common brownish yellow mottles
13 to 22 inches—red clay
22 to 30 inches—red clay loam

Substratum:
30 to 62 inches—strong brown, red, and yellowish brown sandy loam saprolite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in areas along drainageways
- Helena soils, which are moderately well drained; in similar areas
- Louisburg soils, which are moderately deep to bedrock; in similar areas
- Worsham soils, which are poorly drained; in areas along drainageways

Similar components:
- Wedowee soils, which have a yellower subsoil than the Pacolet soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss

Use and Management Considerations

Cropland
Suitability: Unsuited

Pasture
Suitability: Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to yellow-poplar; poorly suited to loblolly pine

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets

- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: X
Hydric soil: No

TaD—Tatum silt loam, 12 to 20 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Moderately steep backslopes

Map Unit Composition

Tatum and similar soils: Typically 80 percent, ranging from about 75 to 85 percent

Typical Profile

Organic layer:
0 to 2 inches—partially decomposed leaves and twigs

Surface layer:
2 to 4 inches—dark yellowish brown silt loam

Subsoil:
4 to 8 inches—red silty clay loam

8 to 20 inches—red silty clay
20 to 41 inches—red and yellowish red silty clay loam

Substratum:
41 to 48 inches—yellowish red and red silt loam; many strong brown mottles

Soft bedrock:
48 to 62 inches—multicolored, weathered phyllite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in areas along drainageways
- Goldston soils, which are shallow to bedrock; in similar areas
- Worsham soils, which are poorly drained; in areas along drainageways

Similar components:
- Georgeville soils, which are very deep to bedrock; in similar areas
- Herndon soils, which are very deep to bedrock and have a yellower subsoil than the Tatum soil; in similar areas
- Nason soils, which have a yellower subsoil than the Tatum soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pasture
Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Well suited to chestnut oak; moderately suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: X
Hydric soil: No

TcD—Tatum silty clay loam, 12 to 20 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Moderately steep backslopes

Map Unit Composition

Tatum and similar soils: Typically 95 percent, ranging from about 90 to 100 percent

Typical Profile

Organic layer:
0 to 1 inch—partially decomposed leaves and twigs

Surface layer:
1 to 3 inches—brown silty clay loam

Subsoil:
3 to 8 inches—red silty clay loam
8 to 20 inches—red silty clay
20 to 38 inches—red and yellowish red silty clay loam

Substratum:
38 to 42 inches—yellowish red and red silt loam; many strong brown mottles

Soft bedrock:
42 to 62 inches—multicolored, weathered phyllite

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in areas along drainageways

Similar components:
- Nason soils, which have a yellower subsoil than the Tatum soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 6.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Deep (40 to 60 inches)
Depth to root-restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from phyllite and sericite schist

Use and Management Considerations

Cropland
Suitability: Unsuited

Pasture
Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Well suited to chestnut oak; moderately suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.

- The low strength of the soil may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- Slow water movement limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: X
Hydric soil: No

ToA—Toccoa fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plains
Position on the landform: Nearly level treads

Map Unit Composition

Toccoa and similar soils: Typically 85 percent, ranging from about 75 to 100 percent

Typical Profile

Surface layer:
0 to 12 inches—dark yellowish brown fine sandy loam

Substratum:
12 to 19 inches—dark yellowish brown fine sandy loam; light yellowish brown masses of oxidized iron
19 to 29 inches—yellowish brown fine sandy loam
29 to 41 inches—dark yellowish brown fine sandy loam; very pale brown and strong brown masses of oxidized iron
41 to 47 inches—dark yellowish brown loam; very pale brown and strong brown masses of oxidized iron
47 to 55 inches—light yellowish brown, yellowish red, and dark yellowish brown fine sandy loam
55 to 62 inches—dark yellowish brown loam; very pale brown and yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Buncombe soils, which are excessively drained and have textures that are sandier than the Toccoa soil; in similar areas
- Chewacla soils, which are somewhat poorly drained; in similar areas

Similar components:
- Congaree soils, which have more clay in the subsoil than the Toccoa soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 6.6 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 2.5 to 5.0 feet
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Surface fragments: None
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans
- Flooding may damage crops.

Pasture
Suitability: Moderately suited
- Flooding may damage pastures.

Woodland
Suitability: Well suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.

Building sites
- Flooding limits the use of the soil for building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields
- Flooding limits the use of the soil for septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- Flooding may damage local roads and streets.

Interpretive Groups

Prime farmland: Prime farmland in all areas
Land capability class: 2w
Virginia soil management group: II
Hydric soil: No

W—Water

Typical Profile

This map unit is made up of ponds, lakes, streams, and reservoirs. No interpretations are given for this map unit.

WdD—Wedowee fine sandy loam, 12 to 20 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Moderately steep backslopes

Map Unit Composition

Wedowee and similar soils: Typically 80 percent, ranging from about 75 to 90 percent

Typical Profile

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

Subsurface layer:
3 to 8 inches—brown fine sandy loam

Subsoil:
8 to 14 inches—yellowish brown sandy clay loam
14 to 24 inches—strong brown clay; few yellowish red mottles
24 to 30 inches—strong brown clay loam; common red mottles
30 to 36 inches—yellowish brown, strong brown, and yellowish red sandy clay loam

Substratum:
36 to 62 inches—yellow, yellowish red, and strong brown sandy loam

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in areas along drainageways
- Helena soils, which are moderately well drained and have a significantly slower permeability than the Wedowee soil; in similar areas
- Louisburg soils, which are moderately deep to bedrock; in similar areas
- Mattaponi soils, which are moderately well drained and have a somewhat slower permeability than the Wedowee soil; in similar areas

Similar components:
- Pacolet soils, which have a redder subsoil than the Wedowee soil; in similar areas

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)

Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6.0 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite or granite gneiss

Use and Management Considerations

Cropland
Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.

Pasture
Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland
Suitability: Moderately suited to loblolly pine, southern red oak, and northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions for log trucks and reduces their operating efficiency.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength of the soil interferes with the construction of haul roads and log landings.

Building sites
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets
- The low strength of the soil may cause structural damage to local roads and streets.
- Designing local roads and streets is difficult because of the slope.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: V
Hydric soil: No

WeA—Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plains
Position on the landform: Nearly level treads

Map Unit Composition

Wehadkee and similar soils: Typically 80 percent, ranging from about 75 to 85 percent

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 20 inches—light brownish gray silt loam; yellowish brown and brown masses of oxidized iron
20 to 42 inches—light brownish gray silty clay loam; yellowish brown masses of oxidized iron
42 to 54 inches—gray clay loam; yellowish brown masses of oxidized iron

Substratum:
54 to 62 inches—light brownish gray silt loam

Minor Components

Dissimilar components:
- Altavista soils, which are moderately well drained and are less susceptible to flooding than the Wehadkee soil; on low stream terraces
- Buncombe soils, which are excessively drained and are less susceptible to flooding than the Wehadkee soil; in the higher areas on flood plains
- Congaree soils, which are moderately well drained; in similar areas and in the higher areas on flood plains
- Toccoa soils, which are moderately well drained and are less susceptible to flooding than the Wehadkee soil; in the higher areas on flood plains

Similar components:
- Chewacla soils, which are somewhat poorly drained; in similar areas and in the higher areas on flood plains

Soil Properties and Qualities

Available water capacity: High (about 10.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 1.0 foot
Water table kind: Apparent
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland
Suitability: Unsuited

Pasture
Suitability: Moderately suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland
Suitability: Well suited to loblolly pine and yellow-poplar; moderately suited to sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low strength of the soil interferes with the construction of haul roads and log landings.
- The low strength of the soil may create unsafe conditions for log trucks.

Building sites
- Flooding limits the use of the soil for building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields
- Flooding limits the use of the soil for septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets
- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6w
Virginia soil management group: MM
Hydric soil: Yes

WoB—Worsham fine sandy loam, 1 to 6 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Upland areas along drainageways and around the heads of drainageways
Position on the landform: Nearly level and gently sloping footslopes and toeslopes

Map Unit Composition

Worsham and similar soils: Typically 75 percent, ranging from about 65 to 85 percent

Typical Profile

Organic layer:
0 to 2 inches—loose leaves and twigs

Surface layer:
2 to 3 inches—very dark grayish brown fine sandy loam

Subsurface layer:
3 to 6 inches—grayish brown and light brownish gray sandy loam; black manganese coatings
6 to 12 inches—light brownish gray sandy loam; yellowish brown masses of oxidized iron

Subsoil:
12 to 26 inches—light brownish gray clay; brownish yellow masses of oxidized iron
26 to 40 inches—gray clay loam; yellow masses of oxidized iron
40 to 49 inches—light gray sandy clay loam

Substratum:
49 to 62 inches—light gray sandy loam

Minor Components

Dissimilar components:
- Abell soils, which are moderately well drained; in similar areas
- Chewacla soils, which are somewhat poorly drained and are susceptible to flooding; on flood plains
- Helena soils, which are moderately well drained; on adjacent uplands

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Low (about 0.001 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 1.0 foot
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Surface fragments: None
Parent material: Clayey local alluvial and colluvial sediments

Use and Management Considerations

Cropland
Suitability: Moderately suited to corn, wheat, and grass-legume hay; poorly suited to soybeans
- The rate of surface runoff, the hazard of erosion, and the amount of nutrient loss are increased because of the slope.
- The high clay content of the soil restricts the rooting depth of crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture

Suitability: Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

Woodland

Suitability: Well suited to loblolly pine and southern red oak; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.
- This soil is well suited to haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The use of this soil as base material for local roads and streets is restricted because of shrinking and swelling.
- The low strength of the soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: HH
Hydric soil: Yes

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 forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and 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 gravel, sand, reclamation material, 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

R. Wade Biddix, district conservationist, Natural Resources Conservation Service, helped prepared this section.

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

Effective pasture management practices include maintaining a mixture of grasses and legumes, rotating pastures, deferring grazing, controlling undesirable vegetation, and using proper stocking rates.

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.

According to the 2002 Census of Agriculture, agricultural crops and pasture grown in Mecklenburg County and the acreage of each include the following: tobacco, 3,018 acres; corn for grain, 533 acres; soybeans for beans, 5,487 acres; wheat for grain, 1,817 acres; rye for grain, 118 acres; oats for grain, 612 acres; all types of hay, 25,219 acres; and pasture, 22,052 acres (USDA, 2002). The acreage used for crops has gradually decreased while the acreage used for woodland has increased. The acreage used for pasture has increased as more beef cattle are raised. A small amount of land once used for cropland and pasture has been converted to community development.

Typically, Mecklenburg County farmers use the best soils for growing the highest cash crop, which is tobacco. Very deep, well drained, gently sloping soils are used primarily in the production of tobacco whenever possible. The soils most commonly used include Appling, Cecil, and Mattaponi soils.

Flue-cured tobacco is more specific in its soil requirements than the other row crops commonly grown in the area. Very deep soils that have relatively thick sandy loam surface layers are better suited to the production of flue-cured tobacco than other soils in the county. Appling and Mattaponi soils are examples of such soils. These coarser textured surface layers generally allow the producer greater flexibility in controlling nitrogen utilization, which is very important in developing a quality product. Too little or too much nitrogen can have a very adverse effect on quality. The coarser textured surface layers permit a more controlled removal of nitrogen from the upper soil profile through rainfall and irrigation. The best tobacco soils generally are acidic in nature because tobacco production requires a moderately acid level of 5.5 to 6.0 pH. The pH is easily controlled with the proper application of lime.

Soils that have a higher clay content in the surface layer, such as Cecil and Pacolet soils, are also used for tobacco production. The surface layer of these soils in cultivated fields generally is thinner than the surface layer of the Appling and Mattaponi soils. The quality of tobacco grown in the soils that have a higher clay content is not normally as good as the quality of the tobacco grown in the soils that have the thicker, sandy loam surface layer. The crops grown in soils with the higher clay content require a higher level of management to control nitrogen utilization.

However, all other management factors being equal, it is not unusual for the yield to be higher for the soils that have finer-textured surface horizons.

Tobacco is very sensitive to abnormally wet conditions in the root zone, so soils that have a slow permeability and soils that are somewhat poorly drained or poorly drained should be used with extreme caution to grow tobacco. A relatively wet condition over a short time period can cause the plant to drown, wilt, and deteriorate rapidly. Enott, Helena, Iredell, Orange, and Worsham soils are examples of soils that have the physical characteristics that create these conditions during periods of abnormal wetness.

Other field crops suited to the soils and climate of the survey area include corn, soybeans (fig. 5), and grain sorghum. Large areas of corn and soybeans are grown throughout the county. Wheat, oats, barley, and rye are the common small grains grown in the county. Wheat and other small grain crops are planted for winter cover crops. Where wheat is grown for grain, soybeans usually follow late in the spring or early in the summer.

Pastures in the county commonly consist of tall fescue, orchardgrass, or clover. Most improved pastures are seeded to tall fescue and ladino clover mixtures. Pastures of cool-season plants provide most of the grazing in the spring and autumn.

The major plants grown and harvested for hay are tall-fescue, orchardgrass, and red clover. Many soils in the survey area are suitable to Alfalfa if the proper amounts of lime and fertilizer are applied.

Special crops grown in the county on a small scale include broccoli and strawberries, which are produced for local markets. The very deep, well drained Appling soil and the moderately well drained Mattaponi soil in the eastern part of the county are especially well suited to these special crops.

Figure 5.—No-till soybeans planted in wheat stubble in an area of Cecil fine sandy loam, 2 to 6 percent slopes,

Most of the well drained soils in the county are suitable for orchards and nursery plants. Soils in low positions, where frost is frequent and air drainage is poor, generally are poorly suited to early vegetables, small fruits, or orchards.

Soil erosion is the major concern for most of the cropland in Mecklenburg County. Most soils in the county have slopes of more than 2 percent and thus are susceptible to erosion.

Loss of the surface layer of the soil to erosion reduces the productivity of the soil and reduces the fertility and water holding capacity. Erosion is especially damaging to soils that have a clayey subsoil, such as the Appling, Cecil, Cullen, Enott, Georgeville, Herndon, Nason, Orange, Pacolet, Tatum, and Wedowee soils, and on soils that have bedrock near the surface. Erosion also reduces productivity in soils that tend to be droughty, such as the Goldston and Louisburg soils.

Soil erosion also results in streams loaded with sediment. Control of erosion minimizes the pollution of streams by sediment and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

Preparing a good seedbed through tillage is difficult in severely eroded spots because much of the original surface soil has been lost. It is also difficult to establish a good stand of any crop in the eroded spots because of the reduced available moisture in the seedbed. Such severely eroded spots are common in areas of moderately eroded Cecil, Cullen, Georgeville, Pacolet, Tatum, and Wedowee soils. Severely eroded spots generally are less common in areas of Appling, Herndon, Nason, Orange, and Winnsboro soils.

Erosion control practices that provide protective surface cover help to reduce runoff and increase water infiltration. For example, using a cropping system that keeps the plant cover on the soil for extended periods can hold erosion losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, which require pasture and hay, the legume and grass forage crops in the cropping system reduce erosion, provide nitrogen, and improve soil tilth for the crops that follow in the cropping system.

The most common erosion-control practices in the survey area include using contour stripcropping (fig. 6) and grassed waterways (fig. 7). These practices are best suited to soils on smooth, uniform slopes. The most practical ways to reduce erosion on very deep, well drained soils that have long, regular slopes include the use of terraces and diversions, which reduce the length of the slope and reduce runoff and erosion. Appling, Cecil, Cullen, Georgeville, Herndon, and Pacolet soils are suitable for terraces. Substantial plant cover is required to control erosion on these soils unless minimum tillage is practiced.

Minimum tillage, which means leaving crop residue on the surface, and using winter cover crops increase infiltration and reduce the hazards of runoff and erosion. These practices are suitable for most soils in the survey area but are difficult to use for the more eroded soils and the somewhat poorly drained and poorly drained soils.

Soil fertility is low in most soils in the county, and most soils are very strongly acid or strongly acid unless they have been limed. However, the Enott, Iredell, and Orange soils on uplands and the Chewacla, Congaree, Toccoa, and Wehadkee soils on flood plains are commonly less acid and have moderate natural fertility. The proper pH level enables crops to use fertilizer and soil moisture more efficiently. Crops in most soils in the county respond well to applications of fertilizer. All additions of lime and fertilizer should be based on the results of soils tests, on the need of the crop, and on the expected level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of lime and fertilizer to apply.

Soil tilth is an important factor in the germination of seeds and in the infiltration of water into the soil. Soils that have good tilth have a thick, granular, and porous surface layer.

Figure 6.—Stripcropping of tobacco and wheat in an area of Appling fine sandy loam, 2 to 6 percent slopes.

Most soils used for crops in the survey area have a surface layer of sandy loam, fine sandy loam, loam, or silt loam and are low in organic matter content. Generally, the structure of such soils is weak, and rainfall causes a crust to form on the surface. The crust is hard when dry and reduces infiltration of water and increases runoff. Regular additions of crop residue and other organic material help to improve soil structure and reduce crust formation.

Tilth is a concern for Altavista, Chewacla, Helena, Iredell, Orange, Wehadkee, and Worsham soils because these soils often stay wet until about midspring. If these soils are plowed when they are wet, they tend to become cloddy after they dry, which makes good seedbeds difficult to prepare.

Some soils are so naturally wet that the production of some of the crops common to the area generally is not practical under natural conditions. These include the somewhat poorly drained Chewacla and Orange soils, the moderately well drained Iredell soils, and the poorly drained Wehadkee and Worsham soils.

The design of surface and subsurface drainage systems varies with the kind of soil. Sometimes a combination of surface drainage and tile drainage can be used. Drains have to be more closely spaced in soils that have slow permeability than in the

Figure 7.—Tobacco and hay in an area of Appling fine sandy loam, 2 to 6 percent slopes. A grassed waterway is between the tobacco and hay in an area of Abell fine sandy loam, 1 to 6 percent slopes.

more permeable soils. Tile drainage is suited to soils that have moderate permeability, such as Chewacla and Wehadkee soils. However, these soils are subject to flooding and it is often difficult to find an adequate outlet.

Yields per Acre

The average yields per acre shown in table 5 are those that can be expected of the principal crops under a high level of management. 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.

The yields are based on the Virginia Agronomic Land Use Evaluation System, or VALUES (Virginia Polytechnic Institute and State University, 1994). 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.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

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 the yields table 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 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.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

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 capability classification of the soils in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Virginia Soil Management Groups

The Virginia Agronomic Land Use Evaluation System (VALUES) is a system to rank soils for management and productivity (Virginia Polytechnic Institute and State University, 1994). VALUES places each soil series in Virginia into one of 43 management groups. The management groups, A through QQ, include the following soil characteristics: regional occurrence; parent material; landscape position or influence; solum thickness; dominant profile features, such as texture; available water capacity for plants; and internal soil drainage. Economically and environmentally feasible yields were assigned to each management group based on yields of field trial crop data and research. The following paragraphs describe the soil management groups in Mecklenburg County.

Group A. The soils of this group formed in alluvium and are on gently sloping flood plains or streams terraces. These soils are deep, have a medium texture throughout, are high water suppliers, and are well drained.

Group B. The soils of this group formed in alluvium and are on nearly level or gently sloping flood plains or stream terraces in the Coastal Plain region. These soils are very deep, have a loamy texture throughout, are high water suppliers, and are well drained or moderately well drained.

Group G. The soils of this group formed in locally transported, medium-textured sediments of either colluvial or alluvial origin of the Piedmont. They overlay a wide range of residual materials and are on landscape positions ranging from footslopes and toeslopes to the heads of drainageways, depressions, and narrow upland drainageways. These soils are deep, have a silty to loamy upper subsoil that is underlain by clayey to stony materials, are moderately high water suppliers, and are moderately well drained or somewhat poorly drained.

Group I. The soils of this group formed in alluvium along flood plains in the Coastal Plain and Piedmont provinces and are somewhat prone to flooding. These soils are deep, have a predominantly clay loam subsurface layer, are moderately high water suppliers, and are somewhat poorly drained.

Group L. The soils of this group formed in old transported deposits of alluvium or colluvium and are on stream terraces, footslopes, and older, elevated upland landscapes that were once stream terraces. These soils are deep; have a medium-textured surface layer and more clayey subsurface layer, commonly with gravel and rounded stones; are moderate to high water suppliers; and generally are well drained.

Group N. The soils of this group formed in residuum, ranging from weathered mafic rocks to Triassic sediments, on dissected uplands in the Piedmont. These soils are moderately deep or deep, have a medium-textured surface layer and a reddish brown clayey subsurface layer, are moderate water suppliers, and are well drained.

Group O. The soils of this group formed in transported materials from old alluvium on dissected uplands. These soils are deep to shallow; have very dark red, clayey subsurface layers, which sometimes contain significant coarse fragments; are moderate water suppliers; and are well drained.

Group R. The soils of this group formed in marine sediments in the Coastal Plain on gently sloping uplands. These soils are very deep, have a sandy loam surface layer and a reddish yellow clay loam to clay subsurface layer, may have redoximorphic features in the lower part of the subsoil, are moderate water suppliers, and are well drained or moderately well drained.

Group V. The soils of this group formed in saprolites derived from a variety of parent materials, including slates, granites, gneisses, schists, and more basic granitic rocks. These soils have a clayey subsurface layer, are moderate water suppliers, and are well drained.

Group X. The soils of this group formed in a variety of residual materials, including slates, granites, gneisses, and schists. These soils have a clayey subsurface layer, which sometimes contain coarse fragments or gravel; are moderate water suppliers; and are well drained or moderately well drained.

Group Y. The soils of this group formed in a variety of residual materials and are on upland landscapes in the Piedmont. These soils are moderately deep; have a clayey subsurface layer, which sometimes contain coarse fragments or gravel; are moderate water suppliers; and are well drained.

Group FF. The soils of this group formed in residual parent materials, ranging from sandstone, shales, and slates to loamy granitic saprolites, and extend across the Piedmont on steeply dissected uplands. These soils are moderately shallow; generally have a loamy-skeletal subsurface layer, which may contain 80 percent or more coarse fragments; are very low or low water suppliers; and are moderately well drained or well drained.

Group HH. The soils of this group formed in loamy alluvial sediments and are on flood plains. These soils are very deep, have a fine-loamy or clayey subsurface layer, are moderate water suppliers, and are moderately well drained or somewhat poorly drained.

Group II. The soils of this group formed in sandy coastal plain sediments. These soils are very deep, have sandy layers throughout, are very low or low water suppliers, and are excessively drained to moderately well drained.

Group JJ. The soils of this group formed in a wide variety of residual parent materials, ranging from sandstones and shales to Triassic materials and granite and schist saprolites, and are located primarily in the Piedmont. These soils are shallow, have predominantly loamy-skeletal textures throughout that range from 30 to 70 percent coarse fragments, are very low water suppliers, and are well drained.

Group KK. The soils of this group formed in a variety of residual materials, including Triassic sediments, residuum from basic rocks, and other clayey sediments. These soils are moderately deep, have a clayey subsurface layer, commonly have large components of high shrink-swell clays, are moderate water suppliers, and are moderately well drained or somewhat poorly drained.

Group MM. The soils of this group formed in loamy sediments. These soils flood frequently, are high water suppliers, and are poorly drained.

The management groups for the map units in Mecklenburg County are given in the section "Detailed Soil Map Units" and in the yields table.

Prime Farmland

Table 6 lists the map units in the survey area that are considered prime farmland. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation’s food supply.

Prime farmland 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 quality, 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. The water supply is dependable and of adequate quality. Prime farmland 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.

About 137,985 acres in the survey area, or nearly 32 percent of the total land acreage, meets the soil requirements for prime farmland. Scattered areas of prime farmland are throughout the county. The crops grown on this land, mainly corn, tobacco, soybeans, and wheat, account for an estimated two-thirds of the county’s total agricultural income each year.

A recent trend in land use in some areas 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.

For some soils identified in the table as prime farmland, 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.

Hydric Soils

This section lists the map unit components that are rated as hydric soils in the survey area. 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, 2002).

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 all 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, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 1998) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 2002).

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, or map unit components, 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, 2002).

WeA Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded
WoB Worsham fine sandy loam, 1 to 6 percent slopes
CrA Congaree-Chewacla complex, 0 to 2 percent slopes, frequently flooded (Chewacla component only)
HbC Helena-Worsham complex, 6 to 12 percent slopes (Worsham component only)

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

AaB Abell fine sandy loam, 1 to 6 percent slopes
ApB Appling fine sandy loam, 2 to 6 percent slopes
ApC Appling fine sandy loam, 6 to 12 percent slopes
CeC Cecil fine sandy loam, 6 to 12 percent slopes
ChA Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded
EnC Enott loam, 6 to 12 percent slopes

GoC Goldston channery silt loam, 6 to 20 percent slopes
HaB Helena fine sandy loam, 2 to 6 percent slopes
HwB Hiwassee clay loam, 2 to 6 percent slopes
OaC Orange silt loam, 6 to 12 percent slopes
PaD Pacolet fine sandy loam, 12 to 20 percent slopes
PcD Pacolet clay loam, 12 to 20 percent slopes, severely eroded
TaD Tatum silt loam, 12 to 20 percent slopes

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Tables 7a, 7b, and 7c show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

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 agricultural waste management. *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).

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include saturated hydraulic conductivity (Ksat), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erosion factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include saturated hydraulic conductivity (Ksat), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erosion factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, saturated hydraulic conductivity (Ksat), slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Saturated hydraulic conductivity (Ksat) and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, saturated hydraulic conductivity (Ksat), depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erosion factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Forestland Productivity and Management

Jack Irby, district conservationist, Natural Resources Conservation Service, helped prepare this section.

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

As was the case in most of Virginia, virgin forests covered almost all of Mecklenburg County when the first settlers arrived. Much of the timber was cut and the land that was suitable for cultivation was cleared. As time passed, the land lost its productivity and farmers abandoned their farmland, which reverted to forestland. Many of the pine stands found today are a result of this reversion process.

Woodland covers about 60 percent of Mecklenburg County. About 80 percent of this acreage is privately owned, 10 percent is federally owned, and 10 percent is owned by commercial timber companies. Timber harvesting and wood-related industries provide employment for many people in the area.

The three distinct types of woodland in the county are upland hardwoods, bottom land hardwoods, and pine. Many areas consist of mixed stands of pine and hardwoods.

Upland hardwoods consist mainly of sprout growth that followed logging and burning. White oak, red oak, scarlet oak, chestnut oak, and hickory are among these hardwoods. Blackjack oak grows on some of the poorer upland soils.

Bottom land hardwoods grow on flood plains and along drainageways. These moisture-loving hardwoods include sweetgum, yellow-poplar, sycamore, red maple, river birch, and willow oak.

The major species of pine include shortleaf pine, loblolly pine, and Virginia pine. Some areas consist of pines that have reseeded on abandoned farmlands that once supported a mixture of pines and hardwoods. Other areas were planted in loblolly pine after logging operations. Virginia pine, or scrub pine, is hardy and aggressive, but it is less valuable because it is knotty and has more limbs than other types of pine. Virginia pine is common in old fields, poorer soils, dry sites, and disturbed soils.

Many soils in the survey area are capable of producing quality timber if proper management practices are used. Reforestation of cutover forestland and the planting of trees on marginal pasture and cropland are needed to maintain an adequate supply of timber for future generations. Existing stands need to be improved by thinning so that quality timber is insured and productivity is maintained. A greater awareness is needed by loggers and landowners concerning erosion and sedimentation problems associated with logging operations. The Virginia Division of Forestry, the Natural Resources Conservation Service, or the Cooperative Extension Service can assist with determining specific forestland management needs.

Forestland Productivity

In table 8, 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 forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

Interpretive ratings are given for various aspects of forestland management in tables 9a, 9b, 9c, 9d, and 9e. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Proper planning for timber harvesting is essential to minimize the potential impact to soil and water quality. A harvest plan should include logging roads, log decks, streamside management zones, stream crossings, skid trails, a schedule of activities, and best management practices (BMPs) for each activity. Forests should be managed to increase economic and environmental benefits. A forest stewardship plan should be developed to guide management and utilization of the woodlands.

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 specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erosion factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erosion factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreational Development

Mecklenburg County is a popular area for recreation because of its soil and water resources. The John H. Kerr Reservoir (Buggs Island Lake), Lake Gaston, Gordan Lake, and numerous farm ponds provide opportunities for water sports, such as fishing, boating, sailing, swimming, and water skiing. There are several public ramps used to launch boats and there are two marinas, one in Clarksville and one near the John H. Kerr Dam.

Many of the soils in the areas surrounding the John H. Kerr Reservoir are well suited to recreation. There are several parks for camping and picnicking that are operated by the State of Virginia and the U.S. Army Corps and Engineers. There are also 28,500 acres of land in the area around the John H. Kerr Reservoir that are open to the public for hunting, which is in addition to the privately owned lands available for hunting throughout the county.

Very deep, well drained soils, such as Appling, Cecil, Cullen, Georgeville, and Herndon soils, are well suited to golf courses. There is an 18-hole golf course at Clarksville and there are 9-hole courses at Chase City, South Hill, and Bracey.

In tables 10a and 10b, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. 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.

The information in these tables can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

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, stoniness, and depth to bedrock 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, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (Ksat), 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, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (Ksat), 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, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (Ksat), and toxic substances in the soil.

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 stoniness, 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 stoniness, 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, stoniness, 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.

Mecklenburg County has extensive habitat for a variety of wildlife. White-tailed deer, wild turkey, bobwhite quail, cottontail rabbits, and gray squirrels are examples of species that inhabit the county. Migratory game birds include mourning dove, Wilson’s snipe, woodcock, and wood duck. The major wetland mammals are beaver, mink, muskrat, and otter. Opossum, red fox, gray fox, and raccoon are other common fur-bearing mammals.

The John H. Kerr Reservoir and Lake Gaston have a number of sunfish species, largemouth bass, striped bass, crappie, channel catfish, and pike. Gordon Lake, about 6 miles from South Hill, has largemouth bass, crappie, and several species of sunfish. Over 1,000 acres of farm ponds have been stocked with largemouth bass, bluegills, and channel catfish. Some of the lakes, ponds, and wetlands provide resting and feeding areas for migratory waterfowl.

Many areas in the county can be improved for use as wildlife habitat. This can be done by increasing the food, water supply, and cover that wildlife need. The soils best suited to wildlife habitat are found throughout the county.

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, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, 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, saturated hydraulic conductivity (Ksat), 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, reclamation material, roadfill, and topsoil; plan structures for water management; 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 11a and 11b 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).

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, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, 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, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

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 bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, 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 bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. 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; 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, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 12a and 12b 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).

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 72 inches or between a depth of 24 inches and a restrictive layer 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. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock 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, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (Ksat) 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 Ksat rate of more than 14 micrometers per second 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 if fractured bedrock is 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, bedrock, and cemented pans 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 over bedrock or a cemented pan to make land smoothing practical.

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 saturated hydraulic conductivity (Ksat), depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. 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.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or 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, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If the downward movement of water through the soil profile is too rapid or if fractured bedrock, a fractured cemented pan, 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, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

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 over bedrock, a cemented pan, or the water table 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 13a and 13b 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 13a, 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 sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. 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 sand or gravel. 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.

In table 13b, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, and 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; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

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 rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

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

Table 14 gives 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; embankments, dikes, and levees; and aquifer-fed excavated ponds. 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 table 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).

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 saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are determined 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 soil and water features.

Engineering Properties

Table 15 gives the engineering classifications and the range of engineering 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, 2005) 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.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, 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, saturated hydraulic conductivity (Ksat), 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 (33kPa or 10kPa) 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 linear extensibility, 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 ability of a soil to transmit water or air. The estimates in the table indicate the rate of water movement, in micrometers per second, when the soil is saturated. 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 (33kPa or 10kPa 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 the table, 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 the table 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 six 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 saturated hydraulic conductivity (Ksat). 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. The table 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. The table 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.

Soil Features

Table 19 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 1998). 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. 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 Alfisol.

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 Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

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 Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols 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 Hapludalfs.

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, mixed, active, mesic Typic Hapludalfs.

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. The Enott series is an example of fine, mixed, active, mesic Typic Hapludalfs in Mecklenburg County.

Table 20 indicates the order, suborder, great group, subgroup, and family of the soil series in the survey area.

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) and in the “Field Book for Describing and Sampling Soils” (Schoeneberger and others, 2002). 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, 1998). 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.

Abell Series

Physiographic province: Southern Piedmont
Landform: Drainageways
Parent material: Loamy alluvial and colluvial sediments and underlying residuum
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 1 to 6 percent

Associated Soils

- Appling and Wedowee soils, which are well drained; on uplands
- Helena soils, which are moderately well drained and have more clay in the subsoil than the Abell soils; on uplands

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Abell fine sandy loam, 1 to 6 percent slopes; located in a stand of hardwoods, 2,600 feet northeast of the intersection of VA-620 and VA-626, about 300 feet west of VA-626, about 4.2 miles east of Bracey.

Ap—0 to 12 inches; brown (7.5YR 4/4) fine sandy loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine and fine irregular pores; few fine mica flakes; moderately acid; abrupt smooth boundary.

Bt1—12 to 25 inches; brownish yellow (10YR 6/6) clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine irregular pores; few faint clay films on all faces of peds; few fine mica flakes; strongly acid; gradual smooth boundary.

Bt2—25 to 32 inches; brownish yellow (10YR 6/6) clay loam; moderate medium angular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine irregular pores; few faint clay films on all faces of peds; common medium faint yellowish brown (10YR 5/8) masses of oxidized iron; few fine mica flakes; strongly acid; clear smooth boundary.

2Bt3—32 to 44 inches; brownish yellow (10YR 5/6) and yellowish red (5YR 4/6) clay; moderate medium angular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; few fine irregular pores; common distinct clay films on all faces of peds; common medium prominent gray (10YR 6/1) iron depletions; few fine mica flakes; 10 percent subrounded quartz gravel; strongly acid; gradual smooth boundary.

2Bt4—44 to 52 inches; brownish yellow (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine irregular pores; few faint clay films on all faces of peds; common medium prominent gray (10YR 6/1) iron depletions; few fine mica flakes; 10 percent subrounded quartz gravel; strongly acid; gradual wavy boundary.

2Cg—52 to 62 inches; gray (10YR 6/1) loam; massive; friable, slightly sticky, nonplastic; few fine mica flakes; 10 percent subrounded quartz gravel; strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Depth to 2Bt horizon: 24 to 48 inches
Depth to hard bedrock: More than 60 inches
Rock fragments: 0 to 15 percent in the A, Bt, and 2Bt horizons
Reaction: Very strongly acid to moderately acid, except where lime has been applied

A or Ap horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—sandy loam, fine sandy loam, loam, or silt loam

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy clay loam or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray in some pedons

2Bt horizon:
Hue—5YR to 2.5Y
Value—4 or 5
Chroma—4 to 8
Texture—sandy clay loam, clay loam, silty clay loam, or clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red in some pedons; iron depletions in shades of olive and gray

2C or 2Cg horizon:
Color—shades of gray, yellow, brown, and white
Texture—sandy loam, loam, or sandy clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

Altavista Series

Physiographic province: Southern Piedmont
Landform: Low stream terraces
Parent material: Loamy alluvial sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 6 percent

Associated Soils

- Chewacla soils, which are somewhat poorly drained and are more susceptible to flooding than the Altavista soils; on flood plains
- Congaree soils, which are more susceptible to flooding than the Altavista soils; on flood plains
- Masada soils, which are well drained, are not susceptible to flooding, and have more clay in the soil than the Altavista soils; on high terraces
- Wehadkee soils, which are poorly drained; on flood plains

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Altavista fine sandy loam, 0 to 6 percent slopes, rarely flooded; located in a hay field, 400 south of where VA-49 crosses the South Meherrin River, 235 feet southeast of VA-49, about 4.6 miles northeast of Chase City.

Ap—0 to 9 inches; brown (7.5YR 5/4) fine sandy loam; few fine distinct strong brown (7.5YR 5/8) mottles; weak fine granular structure; very friable, nonsticky, slightly plastic; common very fine roots; common fine tubular pores and many very fine irregular pores; slightly acid; clear smooth boundary.

Bt1—9 to 21 inches; strong brown (7.5YR 5/8) clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; common very fine tubular pores; many distinct clay films on all faces of peds; few fine prominent light yellowish brown (10YR 6/4) masses of oxidized iron; very strongly acid; clear wavy boundary.

Bt2—21 to 34 inches; strong brown (7.5YR 5/8) clay loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; few fine tubular pores; many prominent clay films on all faces of peds; few fine prominent light gray (10YR 7/2) iron depletions; very strongly acid; clear wavy boundary.

Bt3—34 to 45 inches; strong brown (7.5YR 5/8) clay loam; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; many very fine tubular pores; many distinct clay films on all faces of peds; few fine prominent red (2.5YR 5/8) masses of oxidized iron; many fine prominent light gray (10YR 7/1) iron depletions; very strongly acid; gradual wavy boundary.

BC—45 to 57 inches; very pale brown (10YR 7/3) loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine irregular pores; many medium prominent reddish yellow (5YR 6/8) masses of oxidized iron; many medium distinct pale yellow (2.5Y 8/2) iron depletions; very strongly acid; gradual wavy boundary.

C—57 to 62 inches; strong brown (7.5YR 5/8) loam; massive; friable, slightly sticky, slightly plastic; common very fine irregular pores; many medium distinct reddish yellow (5YR 6/8) masses of oxidized iron; many medium prominent pale yellow (2.5Y 8/2) iron depletions; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Depth to hard bedrock: More than 120 inches
Rock fragments: 0 to 5 percent gravel in the A, Bt, and BC horizons; 0 to 25 percent in the C horizon
Reaction: Very strongly acid to moderately acid, except where lime has been applied

A or Ap horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6

Chroma—1 to 4
Texture—sandy loam or fine sandy loam
Mottles—shades of brown, yellow, and red

Bt horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—4 to 8
Texture—sandy clay loam or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

BC horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—loam or sandy clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of yellow, olive, and gray

C horizon:
Hue—7.5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture (fine-earth fraction)—sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of yellow, olive, gray, and white

Cg horizon (where present):
Hue—7.5YR to 2.5Y; or neutral in hue and has value of 4 to 7
Value—4 to 7
Chroma—1 or 2
Texture (fine-earth fraction)—sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive, gray, and white

Appling Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from granite or granite gneiss
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 12 percent

Associated Soils

- Abell soils, which are moderately well drained; in drainageways and around the heads of drainageways
- Cecil soils, which have a redder subsoil than the Appling soils; on similar landforms
- Helena soils, which are moderately well drained; near drainageways and on similar landforms
- Louisburg soils, which are moderately deep to soft bedrock; on similar landforms
- Mattaponi soils, which are moderately well drained; on similar landforms
- Wedowee soils, which have a thinner solum than the Appling soils; on similar landforms

• Worsham soils, which are poorly drained; in upland areas near drainageways

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Appling fine sandy loam, 2 to 6 percent slopes; located in a cultivated field, 1,000 feet northwest of the intersection of VA-903 and VA-860, about 150 feet west of VA-860, about 2.0 miles southwest of South Hill.

Ap—0 to 7 inches; brown (10YR 5/3) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; common fine roots; many very fine and fine irregular pores; moderately acid; clear smooth boundary.

BE—7 to 11 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; many very fine and fine irregular pores; strongly acid; clear smooth boundary.

Bt1—11 to 16 inches; yellowish brown (10YR 5/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; common fine and medium tubular pores; many distinct clay films on all faces of peds; few fine mica flakes; very strongly acid; clear smooth boundary.

Bt2—16 to 38 inches; yellowish brown (10YR 5/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine roots; few fine tubular pores; many prominent clay films on all faces of peds; few fine mica flakes; very strongly acid; gradual wavy boundary.

BC—38 to 48 inches; brownish yellow (10YR 6/8) and strong brown (7.5YR 5/6) clay loam; common medium distinct red (2.5YR 5/8) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few fine irregular pores; few faint clay films on all faces of peds; few fine mica flakes; very strongly acid; gradual wavy boundary.

C—48 to 62 inches; yellowish red (5YR 5/6) and very pale brown (10YR 7/4) sandy loam saprolite; many coarse distinct red (2.5YR 5/8) mottles; massive; friable, nonsticky, nonplastic; common fine mica flakes; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 72 inches
Rock fragments: 0 to 15 percent angular quartz gravel in the A horizon; 0 to 5 percent in the BE, Bt, and BC horizons
Reaction: Very strongly acid or strongly acid, except where lime has been applied

A or Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—coarse sandy loam, sandy loam, or fine sandy loam; sandy clay loam in eroded areas

BE horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 to 8
Texture—sandy loam or sandy clay loam

Bt horizon:
Hue—5YR to 10YR
Value—5 or 6

Chroma—4 to 8
Texture—clay loam, sandy clay, or clay
Mottles—shades of brown, yellow, and red in some pedons

BC horizon:
Hue—5YR to 10YR
Value—5 or 6
Chroma—4 to 8
Texture—sandy clay loam or clay loam
Mottles—shades of brown, yellow, and red

C horizon:
Hue—5YR to 2.5Y
Value—4 to 7
Chroma—4 to 8
Texture—sandy loam or sandy clay loam saprolite
Mottles—shades of brown, yellow, and red

Buncombe Series

Physiographic province: Southern Piedmont
Landform: Flood plains
Parent material: Sandy alluvial sediments
Drainage class: Excessively drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Toccoa soils, which are not as coarse-textured as the Buncombe soils; on similar landforms

Taxonomic Classification

Mixed, thermic Typic Udipsamments

Typical Pedon

Buncombe loamy fine sand, 0 to 2 percent slopes, occasionally flooded; located in a cultivated field, 1.6 miles southwest of the intersection of VA-615 and US-1, about 1.1 miles southwest of VA-615, about 4.8 miles west of Bracey.

Ap—0 to 12 inches; brown (10YR 4/3) loamy fine sand; weak fine granular structure; loose; many very fine and fine roots; many very fine irregular pores; few fine mica flakes; moderately acid; clear smooth boundary.

C1—12 to 23 inches; brown (10YR 4/3) loamy fine sand; single grain; loose; many very fine roots; many very fine irregular pores; few fine mica flakes; slightly acid; clear smooth boundary.

C2—23 to 37 inches; yellowish brown (10YR 5/4) sand; single grain; loose; many very fine irregular pores; few fine mica flakes; slightly acid; clear smooth boundary.

C3—37 to 44 inches; brown (10YR 5/3) loamy fine sand; single grain; loose; many very fine irregular pores; few fine mica flakes; slightly acid; gradual wavy boundary.

C4—44 to 53 inches; brown (10YR 4/3) fine sandy loam; massive; very friable, nonsticky, nonplastic; many very fine and fine irregular pores; few fine faint pale brown (10YR 6/3) and few fine distinct brownish yellow (10YR 6/6) masses of oxidized iron; few fine mica flakes; slightly acid; gradual wavy boundary.

C5—53 to 62 inches; brown (10YR 4/3) fine sandy loam; massive; very friable, nonsticky, nonplastic; many very fine irregular pores; few fine distinct yellowish brown (10YR 5/6) and few medium faint pale brown (10YR 6/3) masses of oxidized iron; few fine mica flakes; slightly acid.

Range in Characteristics

Depth to hard bedrock: More than 120 inches
Mica flakes: Few to many throughout
Reaction: Very strongly acid to slightly acid

A or Ap horizon:
Hue—10YR or 2.5Y
Value—3 to 5; where value is less than 4, horizon is less than 6 inches thick
Chroma—2 to 6
Texture—sand, loamy sand, or loamy fine sand

C horizon:
Hue—5YR to 2.5Y
Value—3 to 8
Chroma—3 to 8
Texture—sand, loamy sand, or loamy fine sand to a depth of 40 inches; texture ranges from sand to loam or is stratified below 40 inches
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

Cecil Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 12 percent

Associated Soils

- Appling soils, which have a browner subsoil than the Cecil soils; on similar landforms
- Cullen soils, which have more clay in the subsoil than the Cecil soils; on similar landforms
- Hiwassee soils, which have colors that are darker red than those of the Cecil soils and have more clay in the subsoil; on high terraces
- Louisburg soils, which are moderately deep to soft bedrock; on similar landforms
- Masada soils, which have mixed mineralogy; on high terraces
- Pacolet soils, which have a thinner solum than the Cecil soils; on similar landforms

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Cecil fine sandy loam, 2 to 6 percent slopes; located in a pasture, 3,100 feet northeast of the intersection of VA-738 and VA-739, about 75 feet south of VA-739, about 0.5 miles northeast of Forksville.

Ap—0 to 7 inches; brown (7.5YR 5/4) fine sandy loam; weak fine granular structure; friable, nonsticky, nonplastic; many fine roots; many very fine irregular pores; 2 percent angular quartz gravel; moderately acid; abrupt smooth boundary.

Bt1—7 to 16 inches; yellowish red (5YR 5/6) clay; few fine distinct red (2.5YR 4/8) mottles; weak fine subangular blocky structure; friable, moderately sticky, moderately plastic; common very fine roots; many very fine and fine tubular pores; few faint clay films on all faces of peds; few fine mica flakes; strongly acid; clear wavy boundary.

Bt2—16 to 32 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; many distinct clay films on all faces of peds; few fine mica flakes; strongly acid; gradual wavy boundary.

Bt3—32 to 45 inches; red (2.5YR 4/8) clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine roots; common very fine tubular pores; many faint clay films on all faces of peds; common fine mica flakes; 2 percent angular quartz gravel; strongly acid; diffuse wavy boundary.

BC—45 to 55 inches; red (2.5YR 4/8) sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few very fine tubular pores; few faint clay films on all faces of peds; many fine mica flakes; 2 percent angular quartz gravel; strongly acid; gradual wavy boundary.

C—55 to 62 inches; pinkish white (2.5YR 8/2), yellowish red (5YR 5/6), reddish yellow (7.5YR 7/6), and red (2.5YR 4/8) sandy loam saprolite; massive; friable, nonsticky, nonplastic; thick red (2.5YR 4/6) clay flows on cleavage faces; few fine mica flakes; very strongly acid.

Range in Characteristics

Thickness of Bt horizon: 24 to 50 inches thick and extends to 40 inches or more

Depth to bedrock: More than 60 inches

Rock fragments: 0 to 20 percent angular quartz gravel in the A horizon; 0 to 10 percent in the Bt, BC, and C horizons

Mica flakes: Few or common in the Bt horizons; few to many in the BC and C horizons

Reaction: Very strongly acid to moderately acid in the A horizon, except where lime has been applied; very strongly acid or strongly acid in the Bt, BC, and C horizons

A or Ap horizon:

Hue—5YR to 10YR

Value—4 or 5

Chroma—2 to 6

Texture (fine-earth fraction)—sandy loam or fine sandy loam; sandy clay loam or clay loam in eroded areas

Bt horizon:

Hue—2.5YR or 5YR; hue of 5YR limited to thin transitional layers or to pedons that do not have evident patterns of mottling in the lower part of the Bt and BC horizons

Value—4 or 5

Chroma—6 or 8

Texture—clay loam or clay

Mottles—shades of red and brown in most pedons

BC horizon:

Hue—2.5YR or 5YR

Value—4 or 5

Chroma—6 or 8

Texture—sandy clay loam or clay loam

C horizon:
Color—multicolored
Texture—sandy loam, loam, or sandy clay loam saprolite

Chewacla Series

Physiographic province: Southern Piedmont
Landform: Flood plains
Parent material: Loamy alluvial sediments
Drainage class: Somewhat poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Altavista soils, which are moderately well drained and are less susceptible to flooding than the Chewacla soils; on low stream terraces
- Congaree soils, which are moderately well drained; on similar landforms
- Toccoa soils, which are moderately well drained and have less clay than the Chewacla soils; on similar landforms
- Wehadkee soils, which are poorly drained and are more susceptible to flooding than the Chewacla soils; on similar or lower landforms

Taxonomic Classification

Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts

Typical Pedon

Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded; located in an idle field, 1.4 miles southwest of the intersection of VA-615 and US-1, about 1.0 mile south of VA-615, about 4.7 miles west of Bracey.

Ap—0 to 6 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine and fine and common medium roots; many fine irregular pores; few fine prominent yellowish red (5YR 4/6) masses of oxidized iron; few fine mica flakes; slightly acid; clear wavy boundary.

AB—6 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; friable, slightly sticky, moderately plastic; many fine roots; many fine irregular pores; few medium prominent yellowish red (5YR 5/6) masses of oxidized iron; few fine prominent black (10YR 2/1) manganese masses; few fine mica flakes; slightly acid; clear wavy boundary.

Bw—12 to 18 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable, slightly sticky, moderately plastic; many fine roots; many fine irregular pores; few fine faint brown (10YR 5/3) and brown (7.5YR 4/4) masses of oxidized iron; few fine prominent black (10YR 2/1) manganese masses; few fine mica flakes; moderately acid; gradual wavy boundary.

Bg—18 to 44 inches; grayish brown (10YR 5/2) loam; massive; friable, slightly sticky, moderately plastic; common fine roots; common fine irregular pores; few medium prominent black (10YR 2/1) manganese masses; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; few fine mica flakes; moderately acid; gradual wavy boundary.

C—44 to 62 inches; yellowish brown (10YR 5/6) and grayish brown (10YR 5/2) silty clay loam; massive; friable, slightly sticky, moderately plastic; few fine roots; common fine irregular pores; few medium prominent black (10YR 2/1) manganese masses; few fine mica flakes; moderately acid.

Range in Characteristics

Solum thickness: 40 to 60 inches
Depth to bedrock: More than 120 inches
Mica flakes: Few to many throughout
Concretions: None to common
Manganese masses: Few or common in the AB, Bw, Bg, and Cg horizons
Reaction: Very strongly acid to slightly acid above 40 inches, except where lime has been applied; very strongly acid to slightly alkaline below 40 inches

A or Ap horizon:
Hue—5YR to 10YR
Value—3 to 5
Chroma—1 to 4
Texture—fine sandy loam, loam, or silt loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

AB horizon:
Hue—7.5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture—loam, silt loam, clay loam, or silty clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

Bw horizon:
Hue—5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture—fine sandy loam, loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray in some pedons

Bg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—fine sandy loam, loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

C or Cg horizon:
Hue—5YR to 10YR
Value—4 to 7
Chroma—1 to 8
Texture—fine sandy loam, loam, silt loam, or silty clay loam above 40 inches; texture is variable below 40 inches, ranging from loamy sand to silty clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

Congaree Series

Physiographic province: Southern Piedmont
Landform: Flood plains
Parent material: Loamy alluvial sediments
Drainage class: Moderately well drained

Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Altavista soils, which are less susceptible to flooding than the Congaree soils; on low stream terraces
- Chewacla soils, which are somewhat poorly drained; on similar landforms
- Toccoa soils, which have less clay than the Congaree soils; on similar landforms
- Wehadkee soils, which are poorly drained; on similar or lower landforms

Taxonomic Classification

Fine-loamy, mixed, active, nonacid, thermic Oxyaquic Udifluvents

Typical Pedon

Congaree silt loam, 0 to 2 percent slopes, occasionally flooded; located in a cultivated field, 2.1 miles southwest of the intersection of VA-615 and US-1, about 1.2 miles southwest of VA-615, about 4.9 miles west of Bracey.

Ap—0 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine irregular pores; common fine mica flakes; slightly acid; clear smooth boundary.

C1—10 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; massive; friable, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; few fine mica flakes; slightly acid; gradual smooth boundary.

C2—16 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; massive; friable, slightly sticky, slightly plastic; common very fine roots; many very fine irregular pores; few fine mica flakes; moderately acid; gradual wavy boundary.

C3—24 to 41 inches; brown (10YR 5/3) silty clay loam; massive; friable, slightly sticky, slightly plastic; few very fine roots; many very fine irregular pores; few fine black (10YR 2/1) manganese masses; few fine mica flakes; moderately acid; gradual wavy boundary.

C4—41 to 58 inches; brown (10YR 5/3) and strong brown (7.5YR 5/6) silty clay loam; massive; friable, slightly sticky, slightly plastic; few very fine roots; many very fine irregular pores; few fine black (10YR 2/1) manganese masses; few fine mica flakes; moderately acid; gradual wavy boundary.

C5—58 to 62 inches; reddish yellow (7.5YR 6/6) and brown (10YR 5/3) silty clay loam; massive; friable, slightly sticky, slightly plastic; few very fine roots; many very fine irregular pores; few fine black (10YR 2/1) manganese masses; few fine mica flakes; moderately acid.

Range in Characteristics

Depth to bedrock: More than 120 inches
Mica flakes: Few to many in most pedons
Manganese masses: Few to common in the lower part of the C horizon
Reaction: Moderately acid to neutral
Contrasting textures: Thin strata in the C horizons

A or Ap horizon:
Hue—5YR to 10YR
Value—3 to 5; where value less than 3.5, horizon less than 6 inches thick
Chroma—2 to 6
Texture—fine sandy loam, silt loam, or loam

C horizon (above 50 inches):
Hue—5YR to 10YR
Value—3 to 5
Chroma—3 to 6
Texture— fine sandy loam, loam, or silty clay loam; typically has strata of sandier or more clayey material
Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow in some pedons at depths less than 20 inches; iron depletions in shades of gray below a depth of 20 inches

C horizon (below 50 inches):
Color—shades of brown, yellow, and gray
Texture—variable, ranging from loamy sand to silty clay
Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow; iron depletions in shades of gray

Cullen Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from mixed acid and basic crystalline rocks
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 12 percent

Associated Soils

- Cecil soils, which have less clay than the Cullen soils; on similar landforms
- Enott soils, which have less clay than the Cullen soils, are deep to soft bedrock, and have a yellower subsoil; on similar landforms
- Georgeville soils, which have less clay than the Cullen soils; on similar landforms
- Hiwassee soils, which have a darker red subsoil than the Cullen soils; on similar landforms
- Orange soils, which have less clay than the Cullen soils, are deep to soft bedrock, are somewhat poorly drained, and have a yellower subsoil; on similar landforms

Taxonomic Classification

Very-fine, kaolinitic, thermic Typic Hapludults

Typical Pedon

Cullen clay loam, 2 to 6 percent slopes; located in a pasture, 5,200 feet north of the intersection of VA-47 and VA-603, about 150 feet southwest of VA-47, about 4 miles northwest of Chase City.

Ap—0 to 8 inches; reddish brown (5YR 4/4) clay loam; weak fine granular structure; friable, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; slightly acid; clear smooth boundary.

Bt1—8 to 16 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine roots; few fine manganese concretions; few fine tubular pores; few faint clay films on all faces of peds; slightly acid; clear wavy boundary.

Bt2—16 to 30 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine roots; few fine tubular pores; common distinct clay films on all faces of peds; slightly acid; gradual wavy boundary.

Bt3—30 to 44 inches; red (2.5YR 4/8) silty clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine tubular pores; many distinct clay films on all faces of peds; 2 percent angular quartz gravel; strongly acid; gradual wavy boundary.

Bt4—44 to 62 inches; red (2.5YR 4/8) silty clay; weak coarse subangular blocky structure; firm, moderately sticky, moderately plastic; common fine tubular pores; few distinct clay films on all faces of peds; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 72 inches
Rock fragments: 0 to 5 percent angular quartz gravel
Reaction: Strongly acid to slightly acid, except where lime has been applied

A or Ap horizon:
Hue—5YR to 10YR
Value—4 or 5
Chroma—4 or 6
Texture—loam or clay loam

Bt horizon:
Hue—10R or 2.5YR
Value—4 or 5
Chroma—6 or 8
Texture—clay loam, silty clay loam, silty clay, or clay
Mottles—shades of brown and red in some pedons; dark streaks or stains in some pedons

BC horizon (where present):
Hue—10R or 2.5YR
Value—4 to 6
Chroma—6 or 8
Texture—clay loam or silty clay loam
Mottles—shades of brown and red in some pedons; dark streaks or stains in some pedons

Enott Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from basic crystalline rocks
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Deep
Slope range: 2 to 12 percent

Associated Soils

- Cullen soils, which are very deep to bedrock and have a redder subsoil than the Enott soils; on similar landforms
- Iredell soils, which are moderately well drained; on similar landforms
- Orange soils, which are deep to bedrock and are somewhat poorly drained; on similar landforms

Taxonomic Classification

Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Enott loam, 2 to 6 percent slopes; located in a stand of mixed pines and hardwoods, 1,100 feet east of the intersection of US-15 and VA-721, about 30 feet south of VA-721, about 4.8 miles south of Clarksville.

Ap—0 to 6 inches; brown (10YR 5/3) loam; moderate fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; common fine iron-manganese concretions; 10 percent gravel; strongly acid; clear smooth boundary.

BE—6 to 12 inches; light yellowish brown (10YR 6/4) loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and few medium and coarse roots; many very fine tubular pores; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron; common fine iron-manganese concretions; 5 percent gravel; slightly acid; clear smooth boundary.

Bt1—12 to 17 inches; yellowish brown (10YR 5/6) clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; common fine tubular pores; few faint clay films on all faces of peds; common fine faint strong brown (7.5YR 5/6) masses of oxidized iron; common fine iron-manganese concretions; slightly acid; clear wavy boundary.

Bt2—17 to 24 inches; strong brown (7.5YR 5/8) clay; moderate medium subangular blocky structure; very firm, moderately sticky, very plastic; few fine and medium roots; common fine tubular pores; common distinct clay films on surfaces along pores and on all faces of peds; neutral; gradual wavy boundary.

Bt3—24 to 30 inches; yellowish brown (10YR 5/8) clay; moderate medium prismatic structure; very firm, moderately sticky, very plastic; few very fine roots; many fine tubular pores; common distinct clay films on all faces of peds; few fine prominent pale brown (10YR 6/3) and few fine faint strong brown (7.5YR 5/8) masses of oxidized iron; neutral; gradual wavy boundary.

BC—30 to 36 inches; light olive brown (2.5Y 5/4) clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine roots; pockets of clay; few very fine tubular pores; common faint clay films on all faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron; slightly acid; gradual wavy boundary.

C—36 to 55 inches; light olive brown (2.5Y 5/3) clay loam saprolite; massive; firm, slightly sticky, slightly plastic; 10 percent gravel; neutral; gradual wavy boundary.

Cr—55 to 62 inches; highly weathered greenish bedrock that crushes to gravelly loam.

Range in Characteristics

Depth to top of argillic horizon: 0 to 12 inches
Depth to base of argillic horizon: 20 to 50 inches
Depth to soft bedrock: 40 to 60 inches
Depth to hard bedrock: More than 60 inches
Rock fragments: 0 to 20 percent quartz and hornblende gneiss gravel throughout
Black manganese concretions: None to common
Reaction: Strongly acid to slightly alkaline

A or Ap horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture (fine-earth fraction)—fine sandy loam or loam; clay loam in eroded areas

BE horizon:
Hue—10YR or 2.5Y

Value—4 to 6
Chroma—3 to 8
Texture (fine-earth fraction)—fine sandy loam, loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

Bt horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture—clay loam or clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

BC horizon:
Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture—clay loam or clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

C horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—loam or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red in some pedons

Cr horizon:
Soft bedrock—highly weathered mafic metamorphic or igneous rock

Georgeville Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from phyllite and sericite schist
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 12 percent

Associated Soils

- Cullen soils, which have more clay in the subsoil than the Georgeville soils; on similar landforms
- Goldston soils, which are shallow to bedrock; on similar landforms
- Herndon soils, which have a yellower subsoil than the Georgeville soils; on similar landforms
- Hiwassee soils, which have more clay in the subsoil than the Georgeville soils; on high terraces
- Orange soils, which are somewhat poorly drained, are deep to bedrock, and have a yellower subsoil than the Georgeville soils; on similar landforms
- Tatum soils, which are deep to bedrock; on similar landforms

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Georgeville silt loam, 2 to 6 percent slopes; located in a hay field, 140 feet southeast of the intersection of VA-49 and VA-738, about 6.5 miles southeast of Clarksville.

Ap—0 to 9 inches; brown (7.5YR 4/4) silt loam; weak fine granular structure; friable, slightly sticky, slightly plastic; many very fine roots; many very fine irregular pores; moderately acid; clear smooth boundary.

E—9 to 14 inches; strong brown (7.5YR 5/6) silt loam; weak fine granular structure; friable, slightly sticky, slightly plastic; common very fine roots; few fine and many very fine irregular pores; slightly acid; clear wavy boundary.

Bt1—14 to 20 inches; yellowish red (5YR 5/6) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine tubular pores; few distinct clay films on all faces of peds; strongly acid; clear wavy boundary.

Bt2—20 to 27 inches; red (2.5YR 4/8) clay; few fine prominent yellowish brown (10YR 5/6) mottles; moderate fine subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine and fine roots; common fine tubular pores; many prominent yellowish red (5YR 5/6) clay films on all faces of peds; strongly acid; gradual wavy boundary.

Bt3—27 to 49 inches; red (2.5YR 4/6) silty clay; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine roots; common very fine tubular pores; many prominent reddish brown (5YR 5/4) clay films on all faces of peds; strongly acid; gradual wavy boundary.

BC—49 to 57 inches; red (2.5YR 4/6) silty clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine tubular pores; common distinct clay films on all faces of peds; very strongly acid; gradual wavy boundary.

C—57 to 62 inches; red (2.5YR 4/6) and strong brown (7.5YR 5/8) silt loam saprolite; massive; friable, slightly sticky, slightly plastic; silt loam saprolite; few thin red (2.5YR 4/6) clay flows on cleavage faces; very strongly acid.

Range in Characteristics

Thickness of the clayey part of the Bt horizon: 24 to 48 inches; extends below the surface to more than 30 inches

Depth to bedrock: More than 60 inches

Rock fragments: 0 to 15 percent angular quartz gravel in the A horizon

Mica flakes: None to few in the lower part of the BC and C horizons

Reaction: Very strongly acid to moderately acid in the A horizon, except where lime has been applied; very strongly acid or strongly acid in the E, Bt, BC, and C horizons

A or Ap horizon:

Hue—5YR to 10YR

Value—4 or 5

Chroma—4 or 6

Texture—dominantly silt loam but ranges to very fine sandy loam and loam; silty clay loam in eroded areas

E horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 8
Texture—very fine sandy loam, silt loam, or loam

Bt horizon:
Hue—10R to 5YR; hue of 5YR limited to upper Bt horizon
Value—4 or 5
Chroma—6 or 8
Texture—silty clay loam, silty clay, or clay
Mottles—shades of red, yellow, and brown in the lower part of some pedons

BC horizon:
Hue—10R to 5YR
Value—4 or 5
Chroma—6 or 8
Texture—silt loam or silty clay loam
Mottles—shades of yellow and brown

C horizon:
Hue—10R to 10YR
Value—4 to 6
Chroma—3 to 8
Texture—silt loam or loam saprolite
Mottles—shades of yellow, brown, red, white, and gray

Goldston Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from slate, phyllite, and sericite schist
Drainage class: Excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Shallow
Slope range: 6 to 20 percent

Associated Soils

- Georgeville soils, which are very deep to bedrock and have more clay in the subsoil than the Goldston soils; on similar landforms
- Herndon soils, which are very deep to bedrock and have more clay in the subsoil than the Goldston soils; on similar landforms
- Nason soils, which are deep to bedrock and have more clay in the subsoil than the Goldston soils; on similar landforms
- Tatum soils, which are deep to bedrock, have more clay in the subsoil than the Goldston soils, and have a redder subsoil than the Goldston soils; on similar landforms

Taxonomic Classification

Loamy-skeletal, siliceous, semiactive, thermic, shallow Typic Dystrudepts

Typical Pedon

Goldston channery silt loam, 6 to 20 percent slopes; located in a stand of mixed pines and hardwoods, 300 feet northwest of the intersection of VA-677 and VA-675, about 200 feet west of VA-677, about 2.8 miles northeast of Boydton.

A—0 to 1 inch; light yellowish brown (10YR 6/4) channery silt loam; weak very fine granular structure; friable, slightly sticky, nonplastic; common very fine and fine roots; many fine irregular pores; few fine mica flakes; 18 percent channers; strongly acid; abrupt smooth boundary.

E—1 to 6 inches; yellowish brown (10YR 5/6) very channery silt loam; weak very fine granular structure; friable, slightly sticky, nonplastic; common fine roots; many fine irregular pores; few fine mica flakes; 40 percent channers; strongly acid; clear wavy boundary.

Bw—6 to 15 inches; yellowish brown (10YR 5/8) very channery silt loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; common fine roots; many fine irregular pores; few fine mica flakes; 55 percent channers; very strongly acid; gradual wavy boundary.

Cr—15 to 41 inches; multicolored, weathered sericite schist bedrock that crushes to extremely channery silt loam; 75 percent channers remain after crushing; few seams of yellowish brown silt loam; gradual irregular boundary.

R—41 to 44 inches; hard sericite schist bedrock.

Range in Characteristics

Solum thickness: 10 to 20 inches
Depth to soft bedrock: 10 to 20 inches
Depth to hard bedrock: 20 to 40 inches or more
Rock fragments: 15 to 45 percent channers and a few flagstones in the A and E horizons and 35 to 70 percent in the Bw horizon; weighted average in the particle-size control section is more than 35 percent
Reaction: Extremely acid to moderately acid, except where lime has been applied

A horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture (fine-earth fraction)—very fine sandy loam or silt loam

E horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—2 to 6
Texture (fine-earth fraction)—very fine sandy loam or silt loam

Bw horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture (fine-earth fraction)—very fine sandy loam or silt loam

Cr horizon:
Soft bedrock—weathered slate, phyllite, or sericite schist

R layer:
Hard bedrock—hard slate, phyllite, or sericite schist

Helena Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from mixed acid and basic crystalline rocks
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low

Depth class: Very deep
Slope range: 2 to 12 percent

Associated Soils

- Abell soils, which have less clay in the subsoil than the Helena soils; in drainageways and on footslopes
- Appling soils, which are well drained; on similar landforms
- Iredell soils, which are deep to bedrock; on similar landforms
- Louisburg soils, which are moderately deep to bedrock and are well drained; on similar landforms
- Wedowee soils, which are well drained; on similar landforms
- Worsham soils, which are poorly drained; along drainageways and at the heads of drainageways

Taxonomic Classification

Fine, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Helena fine sandy loam, 2 to 6 percent slopes; located in a pasture, 1,600 feet northeast of the intersection of VA-49 and VA-695, about 950 feet east of VA-49, about 4.8 miles southwest of Chase City.

Ap—0 to 9 inches; brown (10YR 5/3) fine sandy loam; weak fine and medium granular structure; very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine irregular pores; 10 percent gravel; slightly acid; abrupt smooth boundary.

E—9 to 12 inches; light yellowish brown (2.5Y 6/4) sandy loam; weak medium angular blocky structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine irregular pores; few fine distinct brown (10YR 5/3) and few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron; 10 percent gravel; slightly acid; clear smooth boundary.

Bt1—12 to 24 inches; yellowish brown (10YR 5/8) clay; moderate medium angular blocky structure; firm, moderately sticky, moderately plastic; common very fine and fine roots; few fine irregular pores; common distinct clay films on all faces of peds; few fine prominent yellowish red (5YR 5/8) and common medium prominent light yellowish brown (2.5Y 6/4) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Bt2—24 to 36 inches; brownish yellow (10YR 6/8) clay; moderate medium angular blocky structure; firm, moderately sticky, moderately plastic; common very fine and fine roots; few fine irregular pores; common distinct clay films on all faces of peds; many coarse prominent light brownish gray (2.5Y 6/2) iron depletions; very strongly acid; gradual smooth boundary.

Btg—36 to 42 inches; light brownish gray (2.5Y 6/2) clay; weak medium and coarse angular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; few fine irregular pores; common distinct clay films on all faces of peds; common medium prominent brownish yellow (10YR 6/8) masses of oxidized iron; very strongly acid; gradual smooth boundary.

C1—42 to 54 inches; light olive brown (2.5Y 5/4) and (2.5Y 5/6) loam saprolite; massive; friable, slightly sticky, slightly plastic; many coarse distinct light brownish gray (2.5Y 6/2) iron depletions; few fine mica flakes; very strongly acid; gradual wavy boundary.

C2—54 to 62 inches; yellow (10YR 7/8) loam saprolite; massive; friable, slightly sticky, slightly plastic; many coarse prominent light brownish gray (2.5Y6/2) iron depletions; few fine mica flakes; strongly acid.

Range in Characteristics

Solum thickness: 40 to more than 60 inches
Depth to bedrock: More than 60 inches
Rock fragments: 0 to 15 percent angular quartz gravel in the A and E horizons; 0 to 5 percent in the Bt horizon
Reaction: Very strongly acid or strongly acid, except where lime has been applied

A or Ap horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 4
Texture—sandy loam or fine sandy loam

E horizon:
Hue—10YR or 2.5Y
Value—5 to 8
Chroma—2 to 4
Texture—sandy loam or fine sandy loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

Bt horizon:
Hue—10YR to 5Y
Value—5 to 8
Chroma—3 to 8
Texture—clay loam, sandy clay, or clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive, white, and gray within 24 inches of the upper boundary

Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—clay loam, sandy clay, or clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of gray

C horizon:
Hue—7.5YR to 5Y
Value—5 to 8
Chroma—3 to 8
Texture—sandy loam, loam, or sandy clay loam saprolite
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red in some pedons; iron depletions in shades of gray

Herndon Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from phyllite and sericite schist
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 12 percent

Associated Soils

- Georgeville soils, which have a redder subsoil than the Herndon soils; on similar landforms
- Goldston soils, which are shallow to bedrock; on similar landforms
- Nason soils, which are deep to bedrock; on similar landforms
- Orange soils, which are deep to bedrock and are somewhat poorly drained; on similar landforms

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Herndon silt loam, 2 to 6 percent slopes; located in a hay field, 1.1 miles southeast of the intersection of VA-47 and VA-633, about 135 feet north of VA-633, about 3.5 miles east of Chase City.

Ap—0 to 6 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many fine roots; many very fine tubular pores; 2 percent angular quartz gravel; slightly acid; clear smooth boundary.

E—6 to 11 inches; yellowish brown (10YR 5/6) silt loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; common fine roots; many very fine irregular pores; 2 percent angular quartz gravel; moderately acid; clear smooth boundary.

Bt1—11 to 16 inches; strong brown (7.5YR 5/8) silty clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; many fine and few medium tubular pores; many distinct clay films on all faces of peds; 1 percent angular quartz gravel; strongly acid; clear wavy boundary.

Bt2—16 to 26 inches; strong brown (7.5YR 5/6) silty clay; moderate fine and medium subangular blocky structure; firm, moderately sticky, slightly plastic; few very fine roots; many fine tubular pores; many prominent clay films on all faces of peds; 1 percent angular quartz gravel; strongly acid; gradual wavy boundary.

Bt3—26 to 41 inches; strong brown (7.5YR 5/6) silty clay; moderate medium subangular blocky structure; firm, moderately sticky, slightly plastic; many very fine and fine tubular pores; many prominent clay films on all faces of peds; very strongly acid; gradual wavy boundary.

BC—41 to 59 inches; yellowish brown (10YR 5/8), brownish yellow (10YR 6/8), and yellowish red (5YR 4/6) silt loam; moderate fine and medium subangular blocky structure; friable, nonsticky, nonplastic; few very fine irregular pores; very few faint clay films on all faces of peds; very strongly acid; clear wavy boundary.

C—59 to 62 inches; brownish yellow (10YR 6/8), yellowish red (5YR 5/8), and red (2.5YR 4/8) silt loam saprolite; massive; friable, nonsticky, nonplastic; very strongly acid.

Range in Characteristics

Thickness of the clayey part of the Bt horizon: 24 to 40 inches
Depth to bottom of clayey part of the Bt horizon: More than 30 inches
Depth to hard bedrock: More than 60 inches
Rock fragments: 0 to 15 percent angular quartz gravel in the A and E horizons; 0 to 5 percent in the Bt horizon
Reaction: Very strongly acid or strongly acid, except where lime has been applied

A or Ap horizon:
Hue—7.5YR or 10YR
Value—4 to 6

Chroma—4 to 8
Texture—dominantly silt loam, but ranges to very fine sandy loam

E horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—4 or 6
Texture—dominantly silt loam, but ranges to very fine sandy loam

Bt horizon:
Hue—5YR to 10YR
Value—5 or 6
Chroma—6 or 8
Texture—silty clay loam, silty clay, or clay; silt content exceeds 30 percent in the particle-size control section
Mottles—shades of brown, yellow, and red in most pedons

BC horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—6 or 8
Texture—silt loam or silty clay loam
Mottles—shades of brown, yellow, red, and white in most pedons

C horizon:
Hue—2.5YR to 10YR
Value—4 to 7
Chroma—3 to 8
Texture—silt loam or loam saprolite
Mottles—shades of brown, yellow, red, and white in most pedons

Hiwassee Series

Physiographic province: Southern Piedmont
Landform: High terraces
Parent material: Old alluvium derived from mixed acid and basic crystalline rocks
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 6 percent

Associated Soils

- Cecil, Cullen, and Georgeville soils, which have colors in the subsoil that are not as dark of a red as those in the Hiwassee soils; on uplands
- Tatum soils, which have colors in the subsoil that are not as dark of a red as those in the Hiwassee soils and are deep to bedrock; on uplands

Taxonomic Classification

Very-fine, kaolinitic, thermic Rhodic Kanhapludults

Typical Pedon

Hiwassee clay loam, 2 to 6 percent slopes; located in a cultivated field, 2.6 miles southeast of the intersection of VA-703 and VA-693, about 2,650 feet southwest of the end of VA-823, about 5.4 miles southwest of Boydton.

Ap—0 to 12 inches; dark reddish brown (5YR 3/4) clay loam; weak medium subangular blocky structure; friable, moderately sticky, slightly plastic; many very fine and fine and few medium roots; many very fine and fine irregular pores; 10 percent gravel; moderately acid; abrupt smooth boundary.

Bt1—12 to 28 inches; dark reddish brown (2.5YR 3/4) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; common very fine and fine irregular pores; common distinct clay films on all faces of peds; common fine prominent black (5YR 2/1) manganese masses; few fine mica flakes; 10 percent gravel; strongly acid; gradual smooth boundary.

Bt2—28 to 48 inches; dark red (2.5YR 3/6) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine irregular and common medium tubular pores; many distinct clay films on all faces of peds; few fine mica flakes; 5 percent gravel; very strongly acid; gradual smooth boundary.

BC—48 to 62 inches; red (2.5YR 4/6) clay loam; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine irregular pores; many distinct clay films on all faces of peds; few fine mica flakes; 2 percent gravel; very strongly acid; gradual wavy boundary.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 60 inches
Rock fragments: 0 to 10 percent quartz and crystalline rock gravel
Mica flakes: Few to common in the Bt horizon
Lithologic discontinuities: Stone lines present in some pedons
Reaction: Very strongly acid to slightly acid, except where lime has been applied

A or Ap horizon:
Hue—2.5YR or 5YR
Value—2 or 3
Chroma—2 to 4
Texture—clay loam

Bt horizon:
Hue—10R or 2.5YR
Value—3
Chroma—3 to 6
Texture—silty clay or clay

BC horizon:
Hue—10R or 2.5YR
Value—3 or 4
Chroma—6 or 8
Texture—clay loam or silty clay loam

Iredell Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from basic crystalline rocks
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Deep
Slope range: 1 to 12 percent

Associated Soils

- Enott soils, which are well drained; on similar landforms
- Helena soils, which are very deep to bedrock; on similar landforms
- Orange soils, which are deep to bedrock and are somewhat poorly drained; on similar landforms

Taxonomic Classification

Fine, mixed, active, thermic Oxyaquic Vertic Hapludalfs

Typical Pedon

Iredell loam, 1 to 6 percent slopes; located in a hay field, 1,000 feet southeast of the intersection of VA-640 and VA-699, about 200 feet northeast of VA-640, about 7.0 miles northeast of Clarksville.

Ap—0 to 9 inches; yellowish brown (10YR 5/4) loam; weak fine and medium granular structure; friable, nonsticky, nonplastic; common very fine, fine, and medium roots; many very fine and fine irregular pores; 10 percent gravel; moderately acid; clear smooth boundary.

BE—9 to 12 inches; light olive brown (2.5Y 5/4) clay loam; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine, fine, and medium roots; many very fine and fine irregular pores; 14 percent gravel; slightly acid; abrupt smooth boundary.

Bt1—12 to 24 inches; yellowish brown (10YR 5/6) clay; moderate medium and coarse angular blocky structure; very firm, very sticky, very plastic; common very fine and fine roots; few fine irregular pores; many distinct clay films on all faces of peds; moderately acid; gradual smooth boundary.

Bt2—24 to 30 inches; light olive brown (2.5Y 5/6) clay; moderate medium and coarse angular blocky structure; very firm, very sticky, very plastic; common very fine and fine roots; few fine irregular pores; many distinct clay films on all faces of peds; neutral; gradual wavy boundary.

Bt3—30 to 35 inches; light olive brown (2.5Y 5/6) clay; moderate medium and coarse angular blocky structure; very firm, very sticky, very plastic; common very fine and fine roots; few fine irregular pores; many distinct clay films on all faces of peds; common fine and medium light brownish gray (2.5Y 6/2) iron depletions; slightly acid; gradual wavy boundary.

BC—35 to 40 inches; light olive brown (2.5Y 5/6) and pale olive (5Y 6/3) clay loam; weak medium and coarse angular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; few fine irregular pores; common distinct clay films on all faces of peds; common medium prominent greenish gray (5GY 5/1) iron depletions; slightly acid; gradual wavy boundary.

C—40 to 49 inches; greenish gray (5GY 5/1), olive yellow (2.5Y 6/6), and light brownish gray (2.5Y 6/2) sandy loam saprolite; massive; friable, slightly sticky, nonplastic; few very fine and fine roots; slightly acid; gradual wavy boundary.

Cr—49 to 62 inches; yellowish brown (10YR 5/6), olive yellow (2.5Y 6/6), and greenish gray (5GY 5/1) weathered basic bedrock that crushes to sandy loam.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to soft bedrock: 40 to 60 inches or more
Depth to hard bedrock: More than 60 inches
Rock fragments: 0 to 15 percent quartz gravel in the A, BE, Bt, and BC horizons; 0 to 10 percent in the C horizon

Reaction: Strongly acid to neutral in the A horizon, except where lime has been applied; moderately acid to slightly alkaline in the BE, Bt, and BC horizons; neutral to moderately alkaline in the C horizon

A or Ap horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—loam or fine sandy loam

BE horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture—loam or clay loam

Bt horizon (upper part):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—clay loam or clay
Redoximorphic features—masses of oxidized iron in shades of brown and yellow in some pedons

Bt horizon (lower part):
Hue—10YR to 5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam or clay
Redoximorphic features—masses of oxidized iron in shades of brown and yellow in some pedons; iron depletions in shades of olive and gray

BC horizon:
Hue—10YR to 5Y
Value—5 or 6
Chroma—3 to 6
Texture—clay loam or clay
Redoximorphic features—masses of oxidized iron in shades of brown and yellow in some pedons; iron depletions in shades of olive and gray

C horizon:
Color—shades of white, gray, brown, yellow, and black
Texture—sandy loam or sandy clay loam saprolite
Redoximorphic features—masses of oxidized iron in shades of brown and yellow in some pedons; iron depletions in shades of olive and gray in some pedons

Cr horizon:
Color—shades of white, gray, brown, yellow, and black
Texture—weathered basic rock that crushes to sandy loam or loam

Louisburg Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from granite or granite gneiss
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High

Depth class: Moderately deep
Slope range: 2 to 20 percent

Associated Soils

- Appling, Cecil, Helena, and Wedowee soils, which have more clay in the subsoil than the Louisburg soils and are very deep to bedrock; on similar landforms

Taxonomic Classification

Coarse-loamy, mixed, semiactive, thermic Ruptic-Ultic Dystrudepts

Typical Pedon

Louisburg sandy loam, 2 to 6 percent slopes; located in a stand of mixed pines and hardwoods, 1,300 feet south of the intersection of VA-713 and VA-842, about 15 feet east of VA-842, about 1.0 mile southeast of Palmer Springs.

Oe—0 to 1 inch; moderately decomposed plant material.
A1—1 to 2 inches; dark grayish brown (10YR 4/2) sandy loam; weak very fine granular structure; very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; 5 percent subangular quartz gravel; strongly acid; clear wavy boundary.
A2—2 to 5 inches; brown (10YR 4/3) sandy loam; weak very fine granular structure; very friable, nonsticky, nonplastic; many very fine and fine and common coarse roots; many very fine irregular pores; 5 percent subangular quartz gravel; strongly acid; clear wavy boundary.
A3—5 to 9 inches; brown (10YR 5/3) sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; few fine and many medium roots; many very fine irregular pores; 5 percent subangular quartz gravel; strongly acid; clear wavy boundary.
E—9 to 15 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine subangular blocky structure; very friable, nonsticky, nonplastic; common fine roots; many very fine irregular pores; few fine mica flakes; 10 percent subangular quartz gravel; strongly acid; clear wavy boundary.
Bw/Bt—15 to 29 inches; brownish yellow (10YR 6/6) sandy loam; moderate medium subangular blocky structure (Bw part); lenses and irregular-shaped bodies of yellowish brown (10YR 5/8) sandy clay loam that has moderate medium and coarse subangular blocky structure (Bt part); friable, nonsticky, nonplastic; common fine roots; many very fine irregular pores; few distinct clay films on all faces of peds; few distinct clay bridges between sand grains in Bt part; few fine mica flakes; 5 percent subangular quartz gravel; very strongly acid; clear broken boundary.
Cr—29 to 46 inches; weathered, multicolored bedrock that crushes to sandy loam; abrupt wavy boundary.
R—46 to 48 inches; hard gneiss and granite bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to soft bedrock: 20 to 40 inches
Depth to hard bedrock: 40 to 60 inches
Rock fragments: 0 to 35 percent angular gravel throughout
Reaction: Very strongly acid to moderately acid, except where lime has been applied

O horizon:
Organic material—slightly to moderately decomposed plant material

A horizon:
Hue—10YR or 2.5Y

Value—4 or 5
Chroma—2 to 4
Texture (fine-earth fraction)—sandy loam or fine sandy loam

E horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—4 or 6
Texture (fine-earth fraction)—sandy loam or fine sandy loam

Bw/Bt:
Hue—5YR to 10YR
Value—5 or 6
Chroma—4 to 8
Texture (fine-earth fraction)—sandy loam; thin layers of sandy clay loam in some pedons

C horizon (where present):
Hue—7.5YR to 2.5Y
Value—3 to 8
Chroma—1 to 8
Texture (fine-earth fraction)—coarse sandy loam, sandy loam, or fine sandy loam

Cr horizon:
Soft bedrock—multicolored, weathered felsic igneous and metamorphic rock; primarily granite and granite gneiss

R layer:
Hard bedrock—hard felsic igneous and metamorphic rock; primarily granite and granite gneiss

Masada Series

Physiographic province: Southern Piedmont
Landform: High terraces
Parent material: Old alluvium derived from acid crystalline rocks
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 6 percent

Associated Soils

- Altavista soils, which are moderately well drained and are susceptible to flooding; on low stream terraces
- Cecil and Pacolet soils, which have kaolinitic mineralogy; on adjacent uplands

Taxonomic Classification

Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Masada fine sandy loam, 2 to 6 percent slopes; located in a pasture, 1.2 miles northeast of the intersection of US-1 and VA-711, about 600 feet north of VA-711, about 2.4 miles west of Bracey.

Ap1—0 to 3 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many fine and common medium roots; many very fine irregular pores; 10 percent rounded quartz gravel; slightly acid; clear smooth boundary.

Ap2—3 to 8 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; common fine roots; many very fine irregular pores; 10 percent rounded quartz gravel; slightly acid; clear smooth boundary.

BE—8 to 11 inches; yellowish brown (10YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; few fine and many very fine irregular pores; 10 percent rounded quartz gravel; moderately acid; clear smooth boundary.

Bt1—11 to 17 inches; strong brown (7.5YR 4/6) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; common fine tubular pores; common distinct clay films on all faces of peds; few fine mica flakes; strongly acid; clear smooth boundary.

Bt2—17 to 23 inches; yellowish red (5YR 5/8), brownish yellow (10YR 6/8), and red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; few fine irregular pores; common distinct clay films on all faces of peds; few fine mica flakes; strongly acid; gradual wavy boundary.

Bt3—23 to 41 inches; yellowish red (5YR 5/8), red (2.5YR 4/8), and brownish yellow (10YR 6/8) clay loam; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine irregular pores; common distinct clay films on all faces of peds; few fine mica flakes; very strongly acid; gradual wavy boundary.

C1—41 to 58 inches; brownish yellow (10YR 6/8) and red (2.5YR 4/6) clay loam; common medium prominent very pale brown (10YR 8/2) mottles; weak coarse subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine irregular pores; few fine mica flakes; very strongly acid; few distinct clay flows on faces of peds; gradual wavy boundary.

C2—58 to 62 inches; brownish yellow (10YR 6/8) and red (2.5YR 4/6) loam; common medium prominent very pale brown (10YR 8/2) mottles; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine irregular pores; few fine mica flakes; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches
Depth to bedrock: More than 72 inches
Rock fragments: 0 to 15 percent rounded quartz gravel in the A horizon; 0 to 10 percent in the BE, Bt, and C horizons
Lithologic discontinuities: Stone lines present in the lower part of the Bt and C horizons of some pedons (fig. 8)
Mica flakes: Common in the Bt horizon
Reaction: Very strongly acid or strongly acid, except where lime has been applied

A or Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 8
Chroma—2 to 8
Texture—sandy loam or fine sandy loam

BE horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, sandy clay loam, or clay loam

Figure 8.—Road cut in an area of Masada fine sandy loam, 2 to 6 percent slopes, showing a stone line at about 48 inches. This indicates that the river terrace deposits in which Masada formed covered an older landscape.

Bt horizon (upper part):
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—clay loam or clay
Mottles—shades of red, yellow, and brown in some pedons

Bt horizon (lower part):
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—clay loam or clay
Mottles—shades of red, yellow, brown, and white in some pedons

C horizon:
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8

Texture—loam, clay loam, or sandy clay loam
Mottles—shades of red, yellow, brown, and white in most pedons

Mattaponi Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Clayey marine sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 1 to 12 percent

Associated Soils

- Appling soils, which are well drained; on similar landforms

Taxonomic Classification

Fine, mixed, subactive, thermic Oxyaquic Hapludults

Typical Pedon

Mattaponi fine sandy loam, 1 to 6 percent slopes; located in a cultivated field, 2.3 miles west of the intersection of VA-712 and US-1, about 700 feet north of VA-712, about 4.2 miles southeast of the John H. Kerr Dam.

Ap—0 to 9 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; common fine and few medium roots; many very fine and fine irregular pores; 12 percent rounded quartz gravel; slightly acid; abrupt smooth boundary.

E—9 to 16 inches; light yellowish brown (2.5Y 6/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; few fine roots; many very fine and fine irregular pores; 12 percent rounded quartz gravel; moderately acid; abrupt smooth boundary.

Bt1—16 to 23 inches; brownish yellow (10YR 6/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; common very fine and fine irregular pores; common distinct clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/8) and brownish yellow (10YR 6/6) masses of oxidized iron; 3 percent rounded quartz gravel; very strongly acid; gradual smooth boundary.

Bt2—23 to 35 inches; brownish yellow (10YR 6/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine irregular and common medium tubular pores; common distinct clay films on all faces of peds; common medium prominent red (2.5YR 4/6) and common medium distinct brownish yellow (10YR 6/6) masses of oxidized iron; 3 percent rounded quartz gravel; very strongly acid; gradual smooth boundary.

Bt3—35 to 51 inches; brownish yellow (10YR 6/8) clay; moderate medium platy structure parting to moderate medium subangular blocky; firm, moderately sticky, moderately plastic; common fine irregular pores; common distinct clay films on all faces of peds; many medium prominent red (2.5YR 4/6) and very pale brown (10YR 7/4) masses of oxidized iron; few fine mica flakes; very strongly acid; clear smooth boundary.

Bt4—51 to 58 inches; yellowish brown (10YR 5/8) clay; moderate medium platy structure; firm, moderately sticky, moderately plastic; few fine irregular pores; many distinct clay films on all faces of peds; common medium prominent light gray (10YR 7/2) iron depletions; common medium prominent red (2.5YR 4/6) masses of oxidized iron; few fine mica flakes; very strongly acid; gradual wavy boundary.

C—58 to 62 inches; yellowish brown (10YR 5/8) clay loam; massive; friable, slightly sticky, slightly plastic; few fine irregular pores; common medium prominent light gray (10YR 7/2) iron depletions; common medium prominent red (2.5YR 4/6) masses of oxidized iron; few fine mica flakes; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Rock fragments: 0 to 15 percent rounded quartz gravel in the A and E horizons; 0 to 5 percent in the Bt horizon
Reaction: Very strongly acid or strongly acid, except where lime has been applied

A or Ap horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture—sandy loam or fine sandy loam

E horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—4 or 6
Texture—sandy loam or fine sandy loam

Bt horizon:
Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture—clay loam, sandy clay, or clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray in the lower Bt horizon

C horizon:
Hue—7.5YR to 2.5Y
Value—4 to 8
Chroma—3 to 8
Texture—sandy loam, sandy clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

Nason Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from phyllite and sericite schist
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Deep
Slope range: 12 to 20 percent

Associated Soils

- Goldston soils, which are shallow to bedrock and have less clay in the subsoil than the Nason soils; on similar landforms
- Herndon soils, which are very deep to bedrock; on similar landforms

Taxonomic Classification

Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Nason silt loam, 12 to 20 percent slopes; located in a stand of hardwoods, 350 feet south of the intersection of US-15 and VA-804, about 225 feet west of US-15, about 2.2 miles south of Clarksville.

Oi—0 to 2 inches; partially decomposed leaves and twigs.

A—2 to 5 inches; brown (10YR 5/3) silt loam; weak fine granular structure; very friable, slightly sticky, slightly plastic; many very fine and fine roots; many very fine irregular pores; 10 percent subangular quartz gravel; very strongly acid; clear wavy boundary.

E—5 to 13 inches; yellowish brown (10YR 5/6) silt loam; weak fine subangular blocky structure; very friable, slightly sticky, slightly plastic; few fine and medium and common very fine roots; many very fine irregular pores; 5 percent subangular quartz gravel; strongly acid; clear wavy boundary.

Bt—13 to 25 inches; strong brown (7.5YR 5/6) silty clay; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine and medium roots; many fine irregular and tubular pores; many prominent clay films on all faces of peds; 5 percent subangular quartz gravel; strongly acid; gradual wavy boundary.

BC—25 to 30 inches; strong brown (7.5YR 5/6) channery silty clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; common faint clay films on all faces of peds; 20 percent subangular schist channers; strongly acid; gradual wavy boundary.

C—30 to 58 inches; strong brown (7.5YR 5/8), yellowish red (5YR 5/8), and reddish yellow (7.5YR 6/8) channery silt loam saprolite; massive; very friable, slightly sticky, slightly plastic; 30 percent subangular schist channers; strongly acid; gradual wavy boundary.

Cr—58 to 62 inches; partially weathered sericite schist bedrock that crushes to channery silt loam.

Range in Characteristics

Solum thickness: 25 to 50 inches
Depth to weathered soft bedrock: 40 to 60 inches
Rock fragments: 0 to 15 percent gravel in the A, E, and Bt horizons; 15 to 30 percent channers in the BC and C horizons
Reaction: Very strongly acid or strongly acid, except where lime has been applied

O horizon:
Organic material—slightly to moderately decomposed plant material

A horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or loam

E horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 or 6
Texture—silt loam or loam

Bt horizon:
Hue—5YR to 10YR
Value—5 or 6
Chroma—6 or 8
Texture—silty clay loam or silty clay

BC horizon:
Hue—5YR to 10YR
Value—5 or 6
Chroma—6 or 8
Texture (fine-earth fraction)—silt loam or silty clay loam

C horizon:
Color—shades of brown, yellow, red, gray, and white
Texture (fine-earth fraction)—silt loam or silty clay loam saprolite

Cr horizon:
Soft bedrock—weathered, slightly fractured to highly fractured serecite schist that crushes to silt loam or silty clay loam

Orange Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from basic crystalline rocks or mixed acid and basic rocks
Drainage class: Somewhat poorly drained
Slowest saturated hydraulic conductivity: Low
Depth class: Deep
Slope range: 1 to 12 percent

Associated Soils

- Cullen, Enott, Georgeville, and Herndon soils, which are well drained; on uplands
- Iredell soils, which are very deep to hard bedrock and do not have iron depletions in the upper part of the subsoil; on uplands

Taxonomic Classification

Fine, smectitic, mesic Albaquic Hapludalfs

Typical Pedon

Orange silt loam, 1 to 6 percent slopes; located in a stand of pines, 3,400 feet west of the intersection of VA-721 and US-15, about 1,400 feet south of VA-721, about 5.0 miles south of Clarksville.

A—0 to 7 inches; brown (10YR 5/3) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; common very fine and fine roots; many very fine irregular pores; few fine distinct very dark grayish brown (10YR 3/2) iron-manganese concretions; neutral; clear smooth boundary.

E—7 to 15 inches; yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; common very fine and fine roots; few fine tubular and many very fine irregular pores; 5 percent subangular quartz gravel; neutral; abrupt smooth boundary.

Bt1—15 to 22 inches; yellowish brown (10YR 5/6) clay; weak medium subangular blocky structure; firm, very sticky, very plastic; few very fine roots; few fine tubular and many very fine irregular pores; few faint clay films on all faces of peds; strongly acid; gradual wavy boundary.

Bt2—22 to 30 inches; yellowish brown (10YR 5/4) clay; moderate coarse prismatic structure; very firm, very sticky, very plastic; few very fine roots; common very fine and fine tubular pores; many prominent clay films on all faces of peds; common fine distinct gray (10YR 6/1) iron depletions; strongly acid; gradual wavy boundary.

Bt3—30 to 36 inches; yellowish brown (10YR 5/4) clay; weak coarse prismatic structure; very firm, very sticky, very plastic; few very fine roots; few very fine tubular pores; many prominent clay films on all faces of peds; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron; common medium distinct light brownish gray (10YR 6/2) iron depletions; 2 percent subangular quartz gravel; strongly acid; gradual wavy boundary.

BC—36 to 41 inches; brown (10YR 5/3) clay; weak medium subangular blocky structure; very firm, very sticky, very plastic; few very fine tubular pores; common prominent clay films on all faces of peds; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron; common medium faint light brownish gray (10YR 6/2) iron depletions; 10 percent subangular quartz gravel; moderately acid; clear wavy boundary.

Cr—41 to 48 inches; dark greenish gray (5GY 4/1), brownish yellow (10YR 6/6), and olive (5Y 5/4) weathered basic bedrock that crushes to sandy loam.

R—48 to 58 inches; hard, mixed basic and phyllite bedrock.

Range in Characteristics

Depth to soft bedrock: 20 to 40 inches

Depth to hard bedrock: 40 to 60 inches

Rock fragments: 0 to 10 percent quartz and hornblende gneiss gravel in the A, E, Bt, and BC horizons

Reaction: Strongly acid to slightly acid in the A, E, and Bt horizons, except where lime has been applied; moderately acid to slightly alkaline in the C horizon

A horizon:

Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silt loam, loam, or fine sandy loam

E horizon:

Hue—10YR or 2.5Y
Value—4 to 7
Chroma—2 to 4
Texture—silt loam, loam, or fine sandy loam

Bt horizon:

Hue—7.5YR to 2.5Y
Value—5
Chroma—4 to 8
Texture—silty clay or clay
Redoximorphic features (where present)—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

BC horizon:

Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—2 to 8
Texture—clay or clay loam

Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

C horizon (where present):
Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—2 to 8
Texture—sandy loam, loam, or sandy clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of olive and gray

Cr horizon:
Soft bedrock—multicolored, partially weathered, fractured basic igneous and metamorphic rock

R layer:
Hard bedrock—unweathered, hard, slightly fractured basic igneous and metamorphic rock

Pacolet Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from granite, granite gneiss, mica schist, and mica gneiss
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 20 percent

Associated Soils

- Cecil soils, which have thicker sola than the Pacolet soils; on similar landforms
- Masada soils, which have mixed mineralogy; on high stream terraces

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Pacolet fine sandy loam, 12 to 20 percent slopes; located in a stand of pines, 1.4 miles southwest of the intersection of VA-630 and VA-629, about 400 feet north of VA-630, about 2.5 miles northwest of Bracey.

A—0 to 3 inches; brown (10YR 4/3) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; 2 percent subangular quartz gravel; very strongly acid; clear smooth boundary.
E—3 to 9 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many fine and coarse roots; many very fine irregular pores; 2 percent subangular quartz gravel; very strongly acid; clear wavy boundary.
Bt1—9 to 13 inches; red (2.5YR 4/6) clay loam; common medium prominent brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine and medium roots; many very fine tubular pores; common distinct clay films on all faces of peds; few fine mica flakes; 1 percent subangular quartz gravel; very strongly acid; clear wavy boundary.

Bt2—13 to 24 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm, slightly sticky, moderately plastic; few very fine roots; many very fine tubular pores; many distinct clay films on all faces of peds; few fine mica flakes; 1 percent subangular quartz gravel; very strongly acid; clear wavy boundary.

BC—24 to 36 inches; red (2.5YR 4/8) clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; common very fine tubular pores; few faint clay films on all faces of peds; common fine mica flakes; very strongly acid; clear wavy boundary.

C—36 to 62 inches; strong brown (7.5YR 5/8), red (2.5YR 4/6), and yellowish brown (10YR 5/6) sandy loam saprolite; massive; friable, nonsticky, nonplastic; few fine mica flakes; very strongly acid.

Range in Characteristics

Thickness of Bt horizon: 10 to 24 inches; extends to a depth of 18 to 30 inches

Depth to hard bedrock: More than 60 inches

Rock fragments: 0 to 20 percent angular quartz gravel in the A horizon; 0 to 10 percent in the E, Bt, BC, and C horizons

Mica flakes: Few to common in the A, E, Bt, and BC horizons of most pedons; few to many in the C horizon

Reaction: Very strongly acid to moderately acid, except where lime has been applied

A or Ap horizon:

Hue—5YR to 10YR
Value—4 or 5
Chroma—2 to 4
Texture (fine-earth fraction)—sandy loam or fine sandy loam; sandy clay loam or clay loam in eroded areas

E horizon (where present):

Hue—5YR to 10YR
Value—4 to 6
Chroma—3 to 8
Texture—sandy loam or fine sandy loam

Bt horizon:

Hue—10R or 2.5YR
Value—4 or 5
Chroma—6 or 8
Texture—clay loam or clay
Mottles—shades of brown, yellow, and red

BC horizon:

Hue—10R or 2.5YR
Value—4 or 5
Chroma—6 or 8
Texture—sandy clay loam or clay loam
Mottles—shades of red, yellow, and brown

C horizon:

Hue—10R to 10YR
Value—4 or 5
Chroma—6 or 8
Texture—sandy loam, loam, or sandy clay loam saprolite
Mottles—shades of red, yellow, and brown

Tatum Series

Physiographic province: Southern Piedmont
Landform: Uplands
Parent material: Residuum weathered from phyllite and sericite schist
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Deep
Slope range: 12 to 20 percent

Associated Soils

- Georgeville soils, which are very deep and have thicker sola than the Tatum soils; on similar landforms
- Hiwassee soils, which are very deep and have thicker sola than the Tatum soils; on high stream terraces
- Goldston soils, which are shallow to bedrock and have thinner sola and less clay in the subsoil than the Tatum soils; on similar landforms

Taxonomic Classification

Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Tatum silt loam, 12 to 20 percent slopes; located in a stand of hardwoods, 700 feet southwest of the intersection of US-58 and US-364, about 500 feet south of US-58, about 1.5 miles east of Clarksville.

Oi—0 to 2 inches; partially decomposed leaves and twigs.

A—2 to 4 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; very friable, slightly sticky, slightly plastic; many fine and medium roots; many very fine irregular pores; 10 percent subangular quartz gravel; very strongly acid; clear smooth boundary.

Bt1—4 to 8 inches; red (2.5YR 5/8) silty clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium roots; common fine tubular pores; common distinct clay films on all faces of peds; 5 percent subangular phyllite gravel; very strongly acid; clear wavy boundary.

Bt2—8 to 20 inches; red (2.5YR 4/8) silty clay; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine tubular pores; many prominent yellowish red (5YR 4/6) clay films on all faces of peds; 10 percent subangular phyllite gravel; strongly acid; gradual wavy boundary.

BC—20 to 41 inches; red (2.5YR 5/8) and yellowish red (5YR 5/8) silty clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; common very fine tubular pores; few faint red (2.5YR 4/8) clay films on all faces of peds; strongly acid; gradual wavy boundary.

C—41 to 48 inches; red (2.5YR 5/8) and yellowish red (5YR 5/8) silt loam saprolite; many medium distinct strong brown (7.5YR 5/8) mottles; massive; very friable, slightly sticky, slightly plastic; strongly acid; few faint clay flows on cleavage faces; gradual wavy boundary.

Cr—48 to 62 inches; multicolored, weathered phyllite bedrock that crushes to silt loam.

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to soft bedrock: 40 to 60 inches
Depth to hard bedrock: More than 60 inches

Rock fragments: 0 to 15 percent gravel throughout
Reaction: Very strongly acid or strongly acid

O horizon:
Organic material—slightly to moderately decomposed plant material

A horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—dominantly silt loam, but ranges to very fine sandy loam and loam; silty clay loam in eroded areas

Bt horizon:
Hue—10R or 2.5YR
Value—4 or 5
Chroma—6 or 8
Texture—silty clay loam, silty clay, or clay

BC horizon:
Hue—2.5YR or 5YR
Value—5 or 6
Chroma—6 or 8
Texture—clay loam or silty clay loam

C horizon:
Hue—10R to 5YR
Value—4 to 6
Chroma—4 to 8
Texture—silt loam or silty clay loam saprolite
Mottles—shades of brown and red

Toccoa Series

Physiographic province: Southern Piedmont
Landform: Flood plains
Parent material: Loamy alluvial sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: High
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Buncombe soils, which have coarser textures than the Toccoa soils; on stream terraces
- Chewacla soils, which are somewhat poorly drained; on flood plains
- Wehadkee soils, which are poorly drained; on flood plains
- Congaree soils, which have finer textures than the Toccoa soils; on flood plains

Taxonomic Classification

Coarse-loamy, mixed, active, nonacid, thermic Typic Udifluvents

Typical Pedon

Toccoa fine sandy loam, 0 to 2 percent slopes, occasionally flooded; located in a cultivated field, 1.6 miles southwest of the intersection of VA-615 and US-1, about 1.1 miles southwest of VA-615, about 4.8 miles west of Bracey.

Ap—0 to 12 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; few fine mica flakes; slightly acid; clear smooth boundary.

C1—12 to 19 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine irregular pores; common medium faint light yellowish brown (10YR 6/4) masses of oxidized iron; few fine mica flakes; slightly acid; gradual smooth boundary.

C2—19 to 29 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; friable, nonsticky, nonplastic; few very fine and fine roots; many very fine and fine irregular pores; few fine mica flakes; moderately acid; gradual wavy boundary.

C3—29 to 41 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; friable, nonsticky, nonplastic; few very fine roots; many very fine and fine irregular pores; few fine distinct very pale brown (10YR 7/3) and few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; few fine mica flakes; moderately acid; clear smooth boundary.

C4—41 to 47 inches; dark yellowish brown (10YR 4/4) loam; massive; friable, slightly sticky, slightly plastic; few very fine roots; many very fine and fine irregular pores; few fine distinct very pale brown (10YR 7/3) and few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; few fine mica flakes; moderately acid; clear wavy boundary.

C5—47 to 55 inches; dark yellowish brown (10YR 4/4), light yellowish brown (10YR 6/4), and yellowish red (5YR 4/6) fine sandy loam; massive; friable, slightly sticky, slightly plastic; common very fine irregular pores; few fine mica flakes; moderately acid; clear wavy boundary.

C6—55 to 62 inches; dark yellowish brown (10YR 4/4) loam; massive; friable, slightly sticky, slightly plastic; few very fine irregular pores; few fine distinct very pale brown (10YR 7/3) and few fine faint yellowish brown (10YR 5/6) masses of oxidized iron; few fine mica flakes; moderately acid.

Range in Characteristics

Depth to bedrock: More than 120 inches
Contrasting textures: Thin strata in the C horizon of some pedons
Mica flakes: Few to many throughout
Reaction: Moderately acid or slightly acid

A or Ap horizon:
Hue—5YR to 10YR
Value—3 to 5; where value less than 4, horizon less than 6 inches thick
Chroma—2 to 4
Texture—loamy sand, sandy loam, fine sandy loam, or loam

C horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—fine sandy loam or sandy loam; commonly has thin horizons of sand, loamy sand, loam, sandy clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red; iron depletions in shades of gray below a depth of 20 inches in some pedons

Wedowee Series

Physiographic province: Southern Piedmont
Landform: Uplands

Parent material: Residuum weathered from granite or granite gneiss
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 12 to 20 percent

Associated Soils

- Abell soils, which are moderately well drained and have thicker sola than the Wedowee soils; in drainageways
- Appling soils, which have thicker sola than the Wedowee soils; on similar landforms
- Helena soils, which are moderately well drained and have thicker sola than the Wedowee soils; on similar landforms
- Louisburg soils, which are moderately deep to soft bedrock and have thinner sola than the Wedowee soils; on similar landforms
- Worsham soils, which are poorly drained and have thicker sola than the Wedowee soils; in drainageways

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Wedowee fine sandy loam, 12 to 20 percent slopes; located in a stand of mixed pines and hardwoods, 500 feet northeast of the intersection of VA-47 and VA-660, about 225 feet northwest of VA-47, about 7.5 miles northwest of South Hill.

A—0 to 3 inches; brown (10YR 4/3) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many very fine and fine and few medium roots; many very fine irregular pores; 5 percent angular quartz gravel; very strongly acid; clear smooth boundary.

E—3 to 8 inches; brown (10YR 5/3) fine sandy loam; weak medium granular structure; very friable, nonsticky, nonplastic; common fine and few medium roots; many very fine irregular pores; 5 percent angular quartz gravel; strongly acid; clear wavy boundary.

BE—8 to 14 inches; yellowish brown (10YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; common very fine irregular pores; 10 percent angular quartz gravel; strongly acid; clear wavy boundary.

Bt1—14 to 24 inches; strong brown (7.5YR 5/6) clay; few fine prominent yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine roots; many very fine tubular pores; common distinct clay films on all faces of peds; strongly acid; clear wavy boundary.

Bt2—24 to 30 inches; strong brown (7.5YR 5/6) clay loam; common medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few very fine roots; common very fine tubular pores; common distinct clay films on all faces of peds; strongly acid; clear wavy boundary.

BC—30 to 36 inches; yellowish red (5YR 5/8), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; many very fine tubular pores; few faint clay films on all faces of peds; strongly acid; clear wavy boundary.

C—36 to 62 inches; yellowish red (5YR 5/8), yellow (10YR 7/8), and strong brown (7.5YR 5/6) sandy loam saprolite; massive; friable, nonsticky, nonplastic; strongly acid.

Range in Characteristics

Thickness of Bt horizon: 10 to 24 inches; extends to a depth of 18 to 30 inches
Depth to bedrock: More than 60 inches
Rock fragments: 0 to 15 percent angular quartz gravel in the A, E, and BE horizons; 0 to 5 percent in the Bt horizon
Reaction: Very strongly acid or strongly acid, except where lime has been applied

A or Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—coarse sandy loam, sandy loam, or fine sandy loam; sandy clay loam in eroded areas

E horizon:
Hue—7.5YR to 2.5Y
Value—4 to 7
Chroma—3 to 6
Texture—coarse sandy loam, sandy loam, or fine sandy loam

BE horizon:
Hue—5YR to 10YR
Value—4 to 7
Chroma—3 to 6
Texture—loam or sandy clay loam

Bt horizon:
Hue—5YR to 10YR
Value—5 or 6
Chroma—6 or 8
Texture—clay loam, sandy clay, or clay
Mottles—shades of brown, yellow, and red in most pedons

BC horizon:
Hue—5YR to 10YR
Value—5 or 6
Chroma—6 or 8
Texture—sandy clay loam or clay loam
Mottles—shades of brown, yellow, and red in most pedons

C horizon:
Color—shades of red, yellow, brown, and white
Texture—sandy loam or sandy clay loam saprolite

Wehadkee Series

Physiographic province: Southern Piedmont
Landform: Flood plains
Parent material: Loamy alluvial sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Altavista soils, which are moderately well drained; on low stream terraces

• Chewacla soils, which are somewhat poorly drained; on flood plains
• Congaree and Toccoa soils, which are moderately well drained; on flood plains

Taxonomic Classification

Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded; located in a stand of hardwoods, 700 feet southwest of the intersection of VA-615 and VA-4, about 100 feet north of VA-4, about 2.8 miles north of the John H. Kerr Dam.

A—0 to 8 inches; brown (10YR 5/3) silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine and fine roots; many fine irregular pores; few fine mica flakes; moderately acid; abrupt smooth boundary.
Bg1—8 to 20 inches; light brownish gray (10YR 6/2) silt loam; weak fine and medium subangular blocky structure; friable, slightly sticky, nonplastic; common very fine and fine roots; common fine irregular pores; common medium prominent yellowish brown (10YR 5/8) and common medium faint brown (10YR 4/3) masses of oxidized iron; few fine mica flakes; moderately acid; clear smooth boundary.
Bg2—20 to 42 inches; light brownish gray (10YR 6/2) silty clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine and fine roots; few fine irregular pores; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; few fine mica flakes; moderately acid; gradual smooth boundary.
Bg3—42 to 54 inches; gray (10YR 6/1) clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine roots; few fine irregular pores; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron; few fine mica flakes; strongly acid; gradual smooth boundary.
Cg—54 to 62 inches; light brownish gray (10YR 6/2) silt loam; massive; friable, slightly sticky, nonplastic; few fine irregular pores; few fine mica flakes; strongly acid.

Range in Characteristics

Solum thickness: 20 to 60 inches or more
Depth to bedrock: More than 120 inches
Mica flakes: Few to many flakes throughout
Reaction: Strongly acid to neutral, except where lime has been applied; some part of the 10 to 40 inches control section is moderately acid to neutral

A horizon:
Hue—10YR or 2.5Y; or neutral in hue and has value of 4 to 6
Value—4 to 6
Chroma—1 to 4
Texture—loam, silt loam, or silty clay loam
Redoximorphic features—masses of oxidized iron in shades of brown and red in some pedons

Bg horizon:
Hue—10YR to 5Y; or neutral in hue and has value of 4 to 6
Value—4 to 6
Chroma—1 or 2
Texture—loam, silt loam, silty clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Cg horizon:
Hue—10YR to 5Y; or neutral in hue and has value of 4 to 7

Value—4 to 7
Chroma—1 or 2
Texture—sandy loam, loam, or silt loam; stratified layers of clay loam, sand, and gravel in some pedons
Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown in some pedons

Worsham Series

Physiographic province: Southern Piedmont
Landform: Drainageways
Parent material: Clayey local alluvial and colluvial sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Low
Depth class: Very deep
Slope range: 1 to 12 percent

Associated Soils

- Appling and Wedowee soils, which are well drained; on uplands
- Helena soils, which are moderately well drained; on uplands

Taxonomic Classification

Fine, mixed, active, thermic Typic Endoaquults

Typical Pedon

Worsham fine sandy loam, 1 to 6 percent slopes; located in a stand of hardwoods, 1,200 feet north of the intersection of VA-688 and VA-689, about 150 feet west of VA-689, about 6.0 miles northwest of Boydton.

Oi—0 to 2 inches; loose leaves and twigs.
A—2 to 3 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine and fine irregular pores; very strongly acid; abrupt smooth boundary.
Eg1—3 to 6 inches; grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) sandy loam; weak fine granular structure; very friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine and fine irregular pores; few fine black (10YR 2/1) manganese coatings; very strongly acid; clear smooth boundary.
Eg2—6 to 12 inches; light brownish gray (10YR 6/2) sandy loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; common very fine and fine roots; many very fine and fine irregular pores; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron; 3 percent rounded quartz gravel; very strongly acid; clear smooth boundary.
Btg1—12 to 26 inches; light brownish gray (10YR 6/2) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; few fine irregular pores; common distinct clay films on all faces of peds; common medium prominent brownish yellow (10YR 6/8) masses of oxidized iron; few fine mica flakes; 3 percent rounded quartz gravel; very strongly acid; abrupt smooth boundary.
Btg2—26 to 40 inches; gray (10YR 6/1) clay loam; weak fine and medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine irregular pores; few distinct clay films on all faces of peds; few fine prominent yellow (10YR

7/8) masses of oxidized iron; few fine mica flakes; 5 percent rounded quartz gravel; very strongly acid; clear smooth boundary.

BCg—40 to 49 inches; light gray (10YR 7/2) sandy clay loam; weak fine and medium subangular blocky structure; friable, moderately sticky, slightly plastic; few fine irregular pores; few fine mica flakes; 10 percent rounded quartz gravel; very strongly acid; clear smooth boundary.

Cg—49 to 62 inches; light gray (10YR 7/2) sandy loam; massive; friable, slightly sticky, nonplastic; few fine mica flakes; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 80 inches
Depth to hard bedrock: More than 60 inches
Rock fragments: 0 to 10 percent gravel
Mica flakes: Few to common in the Btg and Cg horizons
Reaction: Very strongly acid or strongly acid, except where lime has been applied

O horizon:
Organic material—slightly to moderately decomposed plant material

A horizon:
Hue—10YR to 5Y; or neutral in hue and has value of 3 to 6
Value—2 to 6
Chroma—1 to 3
Texture—sandy loam, fine sandy loam, loam, or silt loam

Eg horizon:
Hue—10YR to 5Y; or neutral in hue and has value of 4 to 6
Value—4 to 6
Chroma—1 to 3
Texture—sandy loam, fine sandy loam, loam, or silt loam
Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

Btg horizon:
Hue—10YR to 5Y; or neutral in hue and has value of 5 or 6
Value—5 or 6
Chroma—1 or 2
Texture—clay loam, sandy clay, or clay
Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown

BCg horizon:
Hue—10YR or 2.5Y; or neutral in hue and has value of 4 to 7
Value—4 to 7
Chroma—1 or 2
Texture—sandy clay loam or clay loam
Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown in some pedons

Cg horizon:
Hue—10YR or 2.5Y; or neutral in hue and has value of 5 to 7
Value—5 to 7
Chroma—1 or 2
Texture—sandy loam, sandy clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of red, yellow, and brown in some pedons

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

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.

Alluvial fan. A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

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 toward which a slope faces. Also called slope aspect.

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.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

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.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

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.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

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.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

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.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

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. See Redoximorphic features.

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 dense, compact subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. The layer restricts the downward movement of water through the soil. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

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. See Redoximorphic features.

Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

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 (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). 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.

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.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Crusts, soil. Relatively thin, somewhat continuous layers of the soil surface that often restrict water movement, air entry, and seedling emergence from the soil. They generally are less than 2 inches thick and are massive.

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.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

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.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

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.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

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.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

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.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

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.

Fan (alluvial). A generic term for constructional landforms that are built of stratified alluvium with or without debris-flow deposits and that occur on the pediment slope, downslope from their source of alluvium.

Fan remnant. A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

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. An 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. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flooding frequency class. The number of times flooding occurs over a period of time. It is expressed as a class. The classes of flooding are defined as follows:

None. No reasonable possibility of flooding; near 0 percent chance of flooding in any year or less than 1 time in 500 years.

Very rare. Flooding is very unlikely but possible under extremely unusual weather conditions; less than 1 percent chance of flooding in any year or less than 1 time in 100 years but at least 1 time in 500 years.

Rare. Flooding unlikely but possible under unusual weather conditions; 1 to 5 percent chance of flooding in any year or nearly 1 to 5 times in 100 years.

Occasional. Flooding is expected infrequently under usual weather conditions; 5 to 50 percent chance of flooding in any year or >5 to 50 times in 100 years.

Frequent. Flooding is likely to occur often under usual weather conditions; more than a 50 percent chance of flooding in any year or more than 50 times in 100 years, but less than a 50 percent chance of flooding in all months in any year.

Very frequent. Flooding is likely to occur very often under usual weather conditions; more than a 50 percent chance of flooding in all months of any year.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. 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 small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. 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.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). 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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

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 generic term for an elevated area 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. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

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.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

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 include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts the downward movement of water. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

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.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

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

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

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.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

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. See Saturated hydraulic conductivity.

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

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 (33kPa or 10kPa 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.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

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.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

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.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

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. A kind of map unit 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.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

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).

Mountain. A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

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. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

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

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

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.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

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.

Permafrost. Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

Permeability. See also Saturated hydraulic conductivity. 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.” 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” in some instances. Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

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.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

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 as 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

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:

   A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*

B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*

C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.

2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:

A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*

B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

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.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturated hydraulic conductivity (Ksat). The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are *very* *high*, 100 or more micrometers per second (14.17 or more inches per hour); *high*, 10 to 100 micrometers per second (1.417 to 14.17 inches per hour); *moderately high*, 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour); *moderately low*, 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour); *low*, 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour); and *very low*, less than 0.01 micrometer per second (less than 0.001417 inch per hour). To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

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.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

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 that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

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 convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

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 (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

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.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over 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.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

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 (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

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:

Nearly level	0 to 2 percent
Gently sloping	2 to 6 percent
Strongly sloping	6 to 12 percent
Moderately steep	12 to 20 percent

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted water transmission in the soil.

Slow water movement (in tables). Restricted downward movement of water through the soil. See Saturated hydraulic conductivity.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

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 and by the passage 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.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

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.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

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).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

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.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace (conservation). 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 (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

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."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. 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.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

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 disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered 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 1961-1990 at John H. Kerr Dam, Virginia)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature 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
	^oF	^oF	^oF	^oF	^oF	Units	In	In	In		In
January-----	46.8	25.3	36.0	72	2	10	3.55	2.01	4.92	7	3.2
February----	50.2	27.5	38.8	76	7	21	3.25	1.86	4.50	6	0.7
March-------	59.8	35.4	47.6	84	17	84	3.82	2.20	5.25	7	0.8
April-------	69.8	43.8	56.8	90	26	233	3.14	1.63	4.47	5	0.0
May---------	77.6	53.4	65.5	94	33	482	3.97	2.41	5.37	7	0.0
June--------	85.0	62.1	73.5	98	45	705	3.53	2.08	4.83	5	0.0
July--------	88.4	66.4	77.4	100	51	846	4.29	2.33	6.03	6	0.0
August------	87.4	65.3	76.4	99	49	814	3.99	2.15	5.61	6	0.0
September---	81.5	58.0	69.8	95	38	593	3.29	1.28	4.97	5	0.0
October-----	71.3	45.6	58.4	87	25	283	3.50	1.16	5.42	5	0.0
November----	62.0	37.3	49.7	81	18	105	3.26	1.63	4.69	5	0.1
December----	51.3	29.7	40.5	74	9	28	3.20	1.66	4.56	5	0.3
Yearly:											
Average---	69.3	45.8	57.5	---	---	---	---	---	---	---	---
Extreme---	105	-5	---	101	1	---	---	---	---	---	---
Total-----	---	---	---	---	---	4203	42.80	34.81	48.74	69	5.1

* 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 1961-1990 at John H. Kerr Dam, Virginia)

Probability	Temperature		
	24 ^{o}F or lower	28 ^{o}F or lower	32 ^{o}F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 1	Apr. 18	May 2
2 year in 10 later than--	Mar. 27	Apr. 12	Apr. 27
5 year in 10 later than--	Mar. 17	Apr. 2	Apr. 16
First freezing temperature in fall:			
1 yr in 10 earlier than--	Oct. 30	Oct. 11	Oct. 6
2 yr in 10 earlier than--	Nov. 5	Oct. 18	Oct. 11
5 yr in 10 earlier than--	Nov. 19	Oct. 31	Oct. 22

Table 3.—Growing Season

(Recorded for the period 1961-1990 at John H. Kerr Dam, Virginia)

Probability	Daily minimum temperature during growing season		
	Higher than 24 ^{o}F	Higher than 28 ^{o}F	Higher than 32 ^{o}F
	Days	Days	Days
9 years in 10	219	184	163
8 years in 10	228	193	171
5 years in 10	246	211	187
2 years in 10	263	229	202
1 year in 10	273	239	210

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AaB	Abell fine sandy loam, 1 to 6 percent slopes	2,246	0.5
AbB	Altavista fine sandy loam, 0 to 6 percent slopes, rarely flooded	172	*
ApB	Appling fine sandy loam, 2 to 6 percent slopes	37,684	8.7
ApC	Appling fine sandy loam, 6 to 12 percent slopes	29,525	6.8
ArC	Appling sandy clay loam, 6 to 12 percent slopes, severely eroded	568	0.1
BuA	Buncombe loamy fine sand, 0 to 2 percent slopes, occasionally flooded	263	*
CeB	Cecil fine sandy loam, 2 to 6 percent slopes	27,106	6.2
CeC	Cecil fine sandy loam, 6 to 12 percent slopes	33,546	7.7
CgC	Cecil clay loam, 6 to 12 percent slopes, severely eroded	2,997	0.7
ChA	Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded	1,869	0.4
CoA	Congaree silt loam, 0 to 2 percent slopes, occasionally flooded	2,165	0.5
CrA	Congaree-Chewacla complex, 0 to 2 percent slopes, frequently flooded	7,204	1.7
CuB	Cullen clay loam, 2 to 6 percent slopes	3,154	0.7
CuC	Cullen clay loam, 6 to 12 percent slopes	1,955	0.4
DAM	Dam	9	*
EnB	Enott loam, 2 to 6 percent slopes	2,843	0.7
EnC	Enott loam, 6 to 12 percent slopes	1,780	0.4
GeB	Georgeville silt loam, 2 to 6 percent slopes	27,315	6.3
GeC	Georgeville silt loam, 6 to 12 percent slopes	15,372	3.5
GgB	Georgeville silty clay loam, 2 to 6 percent slopes, severely eroded	1,074	0.2
GgC	Georgeville silty clay loam, 6 to 12 percent slopes, severely eroded	1,148	0.3
GoC	Goldston channery silt loam, 6 to 20 percent slopes	27,170	6.3
GuC	Gullied Land, 6 to 30 percent slopes	532	0.1
HaB	Helena fine sandy loam, 2 to 6 percent slopes	7,503	1.7
HbC	Helena-Worsham complex, 6 to 12 percent slopes	6,110	1.4
HeB	Herndon silt loam, 2 to 6 percent slopes	32,629	7.5
HeC	Herndon silt loam, 6 to 12 percent slopes	18,673	4.3
HwB	Hiwassee clay loam, 2 to 6 percent slopes	571	0.1
IrB	Iredell loam, 1 to 6 percent slopes	4,243	1.0
IrC	Iredell loam, 6 to 12 percent slopes	282	*
LoB	Louisburg sandy loam, 2 to 6 percent slopes	304	*
LoC	Louisburg sandy loam, 6 to 20 percent slopes	20,299	4.7
MdB	Masada fine sandy loam, 2 to 6 percent slopes	1,333	0.3
MtB	Mattaponi fine sandy loam, 1 to 6 percent slopes	2,071	0.5
MtC	Mattaponi fine sandy loam, 6 to 12 percent slopes	155	*
NaD	Nason silt loam, 12 to 20 percent slopes	4,171	1.0
OaB	Orange silt loam, 1 to 6 percent slopes	21,926	5.0
OaC	Orange silt loam, 6 to 12 percent slopes	883	0.2
PaB	Pacolet fine sandy loam, 2 to 6 percent slopes	642	0.1
PaC	Pacolet fine sandy loam, 6 to 12 percent slopes	2,139	0.5
PaD	Pacolet fine sandy loam, 12 to 20 percent slopes	11,205	2.6
PcD	Pacolet clay loam, 12 to 20 percent slopes, severely eroded	311	*
TaD	Tatum silt loam, 12 to 20 percent slopes	7,459	1.7
TcD	Tatum silty clay loam, 12 to 20 percent slopes, severely eroded	850	0.2
ToA	Toccoa fine sandy loam, 0 to 2 percent slopes, occasionally flooded	897	0.2
W	Water	35,103	8.1
WdD	Wedowee fine sandy loam, 12 to 20 percent slopes	5,178	1.2
WeA	Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded	11,547	2.7
WoB	Worsham fine sandy loam, 1 to 6 percent slopes	10,519	2.4
	Total	434,700	100.0

* Less than 0.1 percent.

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture

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	Virginia Soil Management Group	Corn	Grass-legume hay	Pasture	Soybeans	Wheat
			Bu	Tons	AUM	Bu	Bu
AaB:							
Abell	2e	G	140	4.5	8.0	40	64
AbB:							
Altavista	2e	B	160	6.0	11.5	50	64
ApB:							
Appling	2e	V	100	3.5	8.0	35	56
ApC:							
Appling	3e	V	88	3.1	7.5	31	49
ArC:							
Appling	4e	V	62	2.2	5.8	22	35
BuA:							
Buncombe	4s	II	65	1.5	3.0	20	48
CeB:							
Cecil	2e	X	100	3.5	8.0	35	56
CeC:							
Cecil	3e	X	88	3.1	7.5	31	49
CgC:							
Cecil	4e	X	62	2.2	5.8	22	35
ChA:							
Chewacla	4w	I	140	6.0	11.0	40	64
CoA:							
Congaree	2w	A	160	6.0	10.0	50	64
CrA:							
Congaree	3w	A	160	6.0	10.0	50	64
Chewacla	6w	I	---	---	11.0	---	---
CuB:							
Cullen	2e	N	130	3.8	9.1	40	64
CuC:							
Cullen	3e	N	114	3.6	8.7	35	56
DAM:							
Dam	---		---	---	---	---	---
EnB:							
Enott	2e	Y	100	4.8	8.5	35	48
EnC:							
Enott	3e	Y	88	3.1	8.0	35	42
GeB:							
Georgeville	2e	X	100	3.5	5.5	35	56

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Corn	Grass-legume hay	Pasture	Soybeans	Wheat
			Bu	Tons	AUM	Bu	Bu
GeC: Georgeville-------	3e	X	88	3.1	5.0	31	49
GgB: Georgeville-------	3e	X	70	2.4	5.0	25	39
GgC: Georgeville-------	4e	X	62	2.2	4.5	22	35
GoC: Goldston----------	6s	JJ	---	---	4.5	---	---
GuC: Gullied land------	8e		---	---	---	---	---
HaB: Helena------------	2e	KK	65	3.0	5.8	20	32
HbC: Helena------------	3e	KK	57	2.6	5.3	18	28
Worsham-----------	4w	HH	75	2.6	5.3	22	42
HeB: Herndon-----------	2e	V	100	3.5	8.0	35	56
HeC: Herndon-----------	3e	V	88	3.1	7.5	31	49
HwB: Hiwassee----------	2e	O	130	4.0	8.5	40	64
IrB: Iredell-----------	2e	KK	65	3.0	7.0	20	32
IrC: Iredell-----------	3e	KK	57	2.6	6.5	18	28
LoB: Louisburg---------	3e	FF	85	3.5	4.0	25	48
LoC: Louisburg---------	4e	FF	75	3.1	3.5	22	42
MdB: Masada------------	2e	L	130	4.0	10.6	40	64
MtB: Mattaponi---------	2e	R	120	4.0	6.0	40	56
MtC: Mattaponi---------	3e	R	106	3.5	5.0	35	49
NaD: Nason-------------	4e	V	80	2.8	7.5	28	45
OaB: Orange------------	4w	KK	65	3.0	6.5	20	32

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Corn	Grass-legume hay	Pasture	Soybeans	Wheat
			Bu	Tons	AUM	Bu	Bu
OaC:							
Orange------------	4w	KK	57	2.6	6.0	18	28
PaB:							
Pacolet-----------	2e	X	100	3.5	7.0	35	56
PaC:							
Pacolet-----------	3e	X	88	3.1	6.5	31	49
PaD:							
Pacolet-----------	4e	X	80	2.8	6.0	28	45
PcD:							
Pacolet-----------	6e	X	---	---	5.4	---	---
TaD:							
Tatum-------------	4e	X	80	2.8	6.0	28	45
TcD:							
Tatum-------------	6e	X	---	---	5.4	---	---
ToA:							
Toccoa------------	2w	II	65	3.0	4.0	20	48
WdD:							
Wedowee-----------	4e	V	80	2.8	3.5	28	45
WeA:							
Wehadkee----------	6w	MM	---	---	5.8	---	---
WoB:							
Worsham-----------	4w	HH	85	3.0	5.3	25	48

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland.)

Map symbol	Map unit name
AaB	Abell fine sandy loam, 1 to 6 percent slopes
AbB	Altavista fine sandy loam, 0 to 6 percent slopes, rarely flooded
ApB	Appling fine sandy loam, 2 to 6 percent slopes
CeB	Cecil fine sandy loam, 2 to 6 percent slopes
ChA	Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded
CoA	Congaree silt loam, 0 to 2 percent slopes, occasionally flooded
CuB	Cullen clay loam, 2 to 6 percent slopes
GeB	Georgeville silt loam, 2 to 6 percent slopes
HaB	Helena fine sandy loam, 2 to 6 percent slopes
HeB	Herndon silt loam, 2 to 6 percent slopes
HwB	Hiwassee clay loam, 2 to 6 percent slopes
MdB	Masada fine sandy loam, 2 to 6 percent slopes
MtB	Mattaponi fine sandy loam, 1 to 6 percent slopes
PaB	Pacolet fine sandy loam, 2 to 6 percent slopes
ToA	Toccoa fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Table 7a.—Agricultural Waste 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 0.01 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	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
AaB:					
Abell	90	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.68	Depth to saturated zone	0.68
		Too acid	0.11	Too acid	0.42
AbB:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.02	Flooding	0.40
				Too acid	0.07
ApB:					
Appling	90	Somewhat limited		Somewhat limited	
		Low adsorption	0.51	Too acid	0.42
		Too acid	0.11	Low adsorption	0.02
ApC:					
Appling	80	Somewhat limited		Somewhat limited	
		Low adsorption	0.51	Too acid	0.42
		Too acid	0.11	Slope	0.04
		Slope	0.04	Low adsorption	0.02
ArC:					
Appling	75	Somewhat limited		Somewhat limited	
		Low adsorption	0.76	Too acid	0.77
		Too acid	0.22	Low adsorption	0.66
		Slope	0.04	Slope	0.04
BuA:					
Buncombe	80	Very limited		Very limited	
		Filtering capacity	0.99	Flooding	1.00
		Flooding	0.60	Filtering capacity	0.99
		Droughty	0.56	Droughty	0.56
CeB:					
Cecil	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.65	Too acid	0.42
		Too acid	0.11	Low adsorption	0.25
CeC:					
Cecil	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.65	Too acid	0.42
		Too acid	0.11	Low adsorption	0.25
		Slope	0.04	Slope	0.04
CgC:					
Cecil	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.79	Too acid	0.77
		Too acid	0.22	Low adsorption	0.75
		Slope	0.04	Slope	0.04

Table 7a.—Agricultural Waste Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ChA:					
Chewacla	60	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Flooding	1.00
		Too acid	0.01	Too acid	0.03
CoA:					
Congaree	90	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Depth to saturated zone	0.24	Depth to saturated zone	0.24
		Too acid	0.01	Too acid	0.03
CrA:					
Congaree	55	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.24	Depth to saturated zone	0.24
		Too acid	0.01	Too acid	0.03
Chewacla	35	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Too acid	0.01	Too acid	0.03
CuB:					
Cullen	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.69	Low adsorption	0.42
		Too acid	0.01	Too acid	0.03
CuC:					
Cullen	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.69	Low adsorption	0.42
		Slope	0.04	Slope	0.04
		Too acid	0.01	Too acid	0.03
DAM:					
Dam	100	Not rated		Not rated	
EnB:					
Enott	80	Very limited		Very limited	
		Slow water movement	1.00	Low adsorption	1.00
		Too acid	0.32	Slow water movement	1.00
				Too acid	0.91
EnC:					
Enott	85	Very limited		Very limited	
		Slow water movement	1.00	Low adsorption	1.00
		Too acid	0.32	Slow water movement	1.00
		Slope	0.04	Too acid	0.91

Table 7a.—Agricultural Waste Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
GeB:					
Georgeville	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.74	Low adsorption	0.65
		Too acid	0.11	Too acid	0.42
GeC:					
Georgeville	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.74	Low adsorption	0.65
		Too acid	0.11	Too acid	0.42
		Slope	0.04	Slope	0.04
GgB:					
Georgeville	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.77	Too acid	0.91
		Too acid	0.32	Low adsorption	0.75
GgC:					
Georgeville	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.77	Too acid	0.91
		Too acid	0.32	Low adsorption	0.75
		Slope	0.04	Slope	0.04
GoC:					
Goldston	85	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Slope	0.84	Low adsorption	1.00
GuC:					
Gullied land	85	Not rated		Not rated	
HaB:					
Helena	90	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Low adsorption	0.25	Too acid	0.03
HbC:					
Helena	60	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Low adsorption	0.25	Slope	0.04
Worsham	20	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	0.68	Too acid	1.00
HeB:					
Herndon	90	Somewhat limited		Somewhat limited	
		Low adsorption	0.54	Low adsorption	0.13
		Too acid	0.01	Too acid	0.03

Table 7a.—Agricultural Waste Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HeC:					
Herndon	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.54	Low adsorption	0.13
		Slope	0.04	Slope	0.04
		Too acid	0.01	Too acid	0.03
HwB:					
Hiwassee	95	Somewhat limited		Somewhat limited	
		Low adsorption	0.63	Too acid	0.42
		Too acid	0.11	Low adsorption	0.17
IrB:					
Iredell	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Low adsorption	1.00
		Leaching	0.50	Slow water movement	1.00
IrC:					
Iredell	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Low adsorption	1.00
		Leaching	0.50	Slow water movement	1.00
LoB:					
Louisburg	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Droughty	0.96	Filtering capacity	0.99
		Depth to bedrock	0.54	Droughty	0.96
LoC:					
Louisburg	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Droughty	0.96	Filtering capacity	0.99
		Slope	0.84	Droughty	0.96
MdB:					
Masada	85	Somewhat limited		Somewhat limited	
		Too acid	0.01	Too acid	0.03
MtB:					
Mattaponi	90	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.46	Depth to saturated zone	0.46
		Slow water movement	0.30	Slow water movement	0.22
		Too acid	0.01	Too acid	0.03

Table 7a.—Agricultural Waste Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
MtC:					
Mattaponi	90	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.46	Depth to saturated zone	0.46
		Slow water movement	0.30	Slow water movement	0.22
		Slope	0.04	Slope	0.04
NaD:					
Nason	70	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.68	Too acid	1.00
				Slope	1.00
OaB:					
Orange	90	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Low adsorption	1.00
		Runoff	0.40	Depth to saturated zone	0.99
OaC:					
Orange	70	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Low adsorption	1.00
		Runoff	0.40	Depth to saturated zone	0.99
PaB:					
Pacolet	95	Somewhat limited		Very limited	
		Too acid	0.68	Too acid	1.00
		Low adsorption	0.40		
PaC:					
Pacolet	90	Somewhat limited		Very limited	
		Too acid	0.68	Too acid	1.00
		Low adsorption	0.40	Slope	0.04
		Slope	0.04		
PaD:					
Pacolet	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.68	Too acid	1.00
		Low adsorption	0.40		
PcD:					
Pacolet	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Low adsorption	0.74	Too acid	0.91
		Too acid	0.32	Low adsorption	0.68
TaD:					
Tatum	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.68	Too acid	1.00
				Slope	1.00

Table 7a.—Agricultural Waste Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
TcD:					
Tatum---------------	95	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.32	Slope	1.00
				Too acid	0.91
ToA:					
Toccoa--------------	85	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Depth to saturated zone	0.02	Too acid	0.03
		Too acid	0.01	Depth to saturated zone	0.02
WdD:					
Wedowee-------------	80	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Too acid	0.68	Slope	1.00
		Low adsorption	0.26		
WeA:					
Wehadkee------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Runoff	0.40	Too acid	0.42
WoB:					
Worsham-------------	75	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	0.68	Too acid	1.00

Table 7b.—Agricultural Waste 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 0.01 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	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
AaB:					
Abell	90	Somewhat limited		Very limited	
		Depth to saturated zone	0.68	Seepage	1.00
		Too acid	0.42	Depth to saturated zone	0.68
		Too steep for surface application	0.08	Too acid	0.42
AbB:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Seepage	1.00
		Too acid	0.07	Depth to saturated zone	0.99
				Flooding	0.40
ApB:					
Appling	90	Somewhat limited		Very limited	
		Low adsorption	0.51	Seepage	1.00
		Too acid	0.42	Low adsorption	0.51
		Too steep for surface application	0.08	Too acid	0.42
ApC:					
Appling	80	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Low adsorption	0.51	Low adsorption	0.51
		Too acid	0.42	Too steep for surface application	0.50
ArC:					
Appling	75	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.77	Too acid	0.77
		Low adsorption	0.76	Low adsorption	0.76
BuA:					
Buncombe	80	Very limited		Very limited	
		Filtering capacity	0.99	Flooding	1.00
		Flooding	0.60	Seepage	1.00
		Droughty	0.56	Too acid	0.42
CeB:					
Cecil	95	Somewhat limited		Very limited	
		Low adsorption	0.65	Seepage	1.00
		Too acid	0.42	Low adsorption	0.65
		Too steep for surface application	0.08	Too acid	0.42

Table 7b.—Agricultural Waste Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
CeC:					
Cecil	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Low adsorption	0.65	Low adsorption	0.65
		Too acid	0.42	Too steep for surface application	0.50
CgC:					
Cecil	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Low adsorption	0.79	Low adsorption	0.79
		Too acid	0.77	Too acid	0.77
ChA:					
Chewacla	60	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.60	Depth to saturated zone	1.00
		Too acid	0.03	Seepage	1.00
CoA:					
Congaree	90	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Depth to saturated zone	0.24	Seepage	1.00
		Too acid	0.03	Depth to saturated zone	0.24
CrA:					
Congaree	55	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.24	Seepage	1.00
		Too acid	0.03	Depth to saturated zone	0.24
Chewacla	35	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Too acid	0.03	Seepage	1.00
CuB:					
Cullen	95	Somewhat limited		Very limited	
		Low adsorption	0.69	Seepage	1.00
		Too steep for surface application	0.08	Low adsorption	0.69
		Too acid	0.03	Too acid	0.03

Table 7b.—Agricultural Waste Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
CuC:					
Cullen	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Low adsorption	0.69	Low adsorption	0.69
		Too steep for sprinkler application	0.22	Too steep for surface application	0.50
DAM:					
Dam	100	Not rated		Not rated	
EnB:					
Enott	80	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.91	Too acid	0.91
		Too steep for surface application	0.08	Depth to bedrock	0.0
EnC:					
Enott	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too acid	0.91
		Too acid	0.91	Too steep for surface application	0.501
GeB:					
Georgeville	95	Somewhat limited		Very limited	
		Low adsorption	0.74	Seepage	1.00
		Too acid	0.42	Low adsorption	0.74
		Too steep for surface application	0.08	Too acid	0.42
GeC:					
Georgeville	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Low adsorption	0.74	Low adsorption	0.74
		Too acid	0.42	Too steep for surface application	0.50
GgB:					
Georgeville	95	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
		Low adsorption	0.77	Too acid	0.91
		Too steep for surface application	0.08	Low adsorption	0.77

Table 7b.—Agricultural Waste Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
GgC:					
Georgeville	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.91	Too acid	0.91
		Low adsorption	0.77	Low adsorption	0.77
GoC:					
Goldston	85	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
GuC:					
Gullied land	85	Not rated		Not rated	
HaB:					
Helena	90	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Low adsorption	0.25	Low adsorption	0.25
HbC:					
Helena	60	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too steep for surface application	0.50
Worsham	20	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	1.00	Too acid	1.00
HeB:					
Herndon	90	Somewhat limited		Very limited	
		Low adsorption	0.54	Seepage	1.00
		Too steep for surface application	0.08	Low adsorption	0.54
		Too acid	0.03	Too acid	0.03

Table 7b.—Agricultural Waste Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
HeC:					
Herndon	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Low adsorption	0.54	Low adsorption	0.54
		Too steep for sprinkler application	0.22	Too steep for surface application	0.50
HwB:					
Hiwassee	95	Somewhat limited		Very limited	
		Low adsorption	0.63	Seepage	1.00
		Too acid	0.42	Low adsorption	0.63
		Too steep for surface application	0.08	Too acid	0.42
IrB:					
Iredell	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.42	Depth to bedrock	0.54
IrC:					
Iredell	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	0.54
LoB:					
Louisburg	85	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
		Droughty	0.96	Depth to bedrock	1.00
		Too acid	0.91	Too acid	0.91
LoC:					
Louisburg	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Filtering capacity	0.99	Depth to bedrock	1.00
		Droughty	0.96	Too steep for surface application	1.00
MdB:					
Masada	85	Somewhat limited		Very limited	
		Too steep for surface application	0.08	Seepage	1.00
		Too acid	0.03	Too acid	0.03

Table 7b.—Agricultural Waste Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MtB:					
Mattaponi	90	Somewhat limited		Very limited	
		Depth to saturated zone	0.46	Seepage	1.00
		Slow water movement	0.22	Depth to saturated zone	0.46
		Too steep for surface application	0.08	Too acid	0.03
MtC:					
Mattaponi	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Depth to saturated zone	0.46	Too steep for surface application	0.50
		Too steep for sprinkler application	0.22	Depth to saturated zone	0.46
NaD:					
Nason	70	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
OaB:					
Orange	90	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too steep for surface application	0.08	Depth to bedrock	0.99
OaC:					
Orange	70	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to bedrock	0.99
PaB:					
Pacolet	95	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Low adsorption	0.40	Too acid	1.00
		Too steep for surface application	0.08	Low adsorption	0.40

Table 7b.—Agricultural Waste Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
PaC:					
Pacolet	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
		Low adsorption	0.40	Too steep for surface application	0.50
PaD:					
Pacolet	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Too acid	1.00
PcD:					
Pacolet	85	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.91	Too acid	0.91
TaD:					
Tatum	80	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
TcD:					
Tatum	95	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.91	Depth to bedrock	0.96
ToA:					
Toccoa	85	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Too acid	0.03	Seepage	1.00
		Depth to saturated zone	0.02	Too acid	0.03

Table 7b.—Agricultural Waste Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WdD:					
Wedowee	80	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Too acid	1.00
WeA:					
Wehadkee	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Too acid	0.42	Seepage	1.00
WoB:					
Worsham	75	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	1.00	Too acid	1.00
					0

Table 7c.—Agricultural Waste Management (Part 3)

(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	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
AaB:					
Abell	90	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Slow water movement	1.00	Too acid	0.42
				Too steep for surface application	0.08
AbB:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Slow water movement	1.00	Too acid	0.07
		Too acid	0.07		
ApB:					
Appling	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Low adsorption	0.51
		Too acid	0.07	Too acid	0.42
				Too steep for surface application	0.08
ApC:					
Appling	80	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00		
		Too acid	0.07	Low adsorption	0.51
				Too steep for sprinkler irrigation	0.50
ArC:					
Appling	75	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00		
		Too acid	0.07	Too acid	0.77
				Low adsorption	0.76
BuA:					
Buncombe	80	Somewhat limited		Very limited	
		Flooding	0.60	Filtering capacity	0.99
				Flooding	0.60
				Too acid	0.42

Table 7c.—Agricultural Waste Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
CeB:					
Cecil	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Low adsorption	0.65
		Too acid	0.07	Too acid	0.42
				Too steep for surface application	0.08
CeC:					
Cecil	85	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Low adsorption	0.65
		Too acid	0.07	Too steep for sprinkler irrigation	0.50
CgC:					
Cecil	95	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Low adsorption	0.79
		Too acid	0.07	Too acid	0.77
ChA:					
Chewacla	60	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60	Too acid	0.03
CoA:					
Congaree	90	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Flooding	0.60
		Slow water movement	1.00	Depth to saturated zone	0.24
		Flooding	0.60	Too acid	0.03
CrA:					
Congaree	55	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.24
		Slow water movement	1.00	Too acid	0.03
Chewacla	35	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00	Too acid	0.03

Table 7c.—Agricultural Waste Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
CuB:					
Cullen	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Low adsorption	0.69
				Too steep for surface application	0.08
				Too acid	0.03
CuC:					
Cullen	95	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Low adsorption	0.69
				Too steep for sprinkler irrigation	0.50
DAM:					
Dam	100	Not rated		Not rated	
EnB:					
Enott	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	0.94
		Depth to bedrock	1.00	Too acid	0.91
				Depth to bedrock	0.08
EnC:					
Enott	85	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00		
		Slope	1.00	Slow water movement	0.94
				Too acid	0.91
GeB:					
Georgeville	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Low adsorption	0.74
				Too acid	0.42
		Too acid	0.07	Too steep for surface application	0.08
GeC:					
Georgeville	85	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00		
		Too acid	0.07	Low adsorption	0.74
				Too steep for sprinkler irrigation	0.50

Table 7c.—Agricultural Waste Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
GgB:					
Georgeville	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
		Too acid	0.07	Low adsorption	0.77
				Too steep for surface application	0.08
GgC:					
Georgeville	95	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too acid	0.91
		Too acid	0.07	Low adsorption	0.77
GoC:					
Goldston	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Cobble content	0.99	Too steep for sprinkler irrigation	1.00
GuC:					
Gullied land	85	Not rated		Not rated	
HaB:					
Helena	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	1.00	Slow water movement	0.94
		Too acid	0.07	Low adsorption	0.25
HbC:					
Helena	60	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Slope	1.00	Slow water movement	0.94
Worsham	20	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Slope	1.00	Too acid	1.00

Table 7c.—Agricultural Waste Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
HeB:					
Herndon	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Low adsorption	0.54
		Too acid	0.07	Too steep for surface application	0.08
				Too acid	0.03
HeC:					
Herndon	85	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Low adsorption	0.54
		Too acid	0.07	Too steep for sprinkler irrigation	0.50
HwB:					
Hiwassee	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Low adsorption	0.63
		Too acid	0.07	Too acid	0.42
				Too steep for surface application	0.08
IrB:					
Iredell	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.94
		Depth to bedrock	1.00	Depth to bedrock	0.54
IrC:					
Iredell	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Slow water movement	0.94
LoB:					
Louisburg	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	0.07	Filtering capacity	0.99
				Too acid	0.91

Table 7c.—Agricultural Waste Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
LoC:					
Louisburg	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Too acid	0.07	Too steep for sprinkler irrigation	1.00
MdB:					
Masada	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too steep for surface application	0.08
		Too acid	0.07	Too acid	0.03
MtB:					
Mattaponi	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.46
		Depth to saturated zone	1.00	Slow water movement	0.15
		Too acid	0.07	Too steep for surface application	0.08
MtC:					
Mattaponi	90	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to saturated zone	1.00	Too steep for sprinkler irrigation	0.50
		Slope	1.00	Depth to saturated zone	0.46
NaD:					
Nason	70	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
		Slow water movement	1.00	Too acid	1.00
OaB:					
Orange	90	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to bedrock	1.00	Depth to bedrock	0.99

Table 7c.—Agricultural Waste Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Rapid infiltration of wastewater: Value	Slow rate treatment of wastewater: Rating class and limiting features	Slow rate treatment of wastewater: Value
OaC:					
Orange	70	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00		
				Depth to saturated zone	0.99
PaB:					
Pacolet	95	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
				Low adsorption	0.40
		Too acid	0.07	Too steep for surface application	0.08
PaC:					
Pacolet	90	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00		
		Too acid	0.07	Too acid	1.00
				Too steep for sprinkler irrigation	0.50
PaD:					
Pacolet	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00		
		Too acid	0.07	Too steep for sprinkler irrigation	1.00
				Too acid	1.00
PcD:					
Pacolet	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00		
		Too acid	0.07	Too steep for sprinkler irrigation	1.00
				Too acid	0.91
TaD:					
Tatum	80	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00		
		Slow water movement	1.00		
				Too steep for sprinkler irrigation	1.00
				Too acid	1.00

Table 7c.—Agricultural Waste Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
TcD:					
Tatum	95	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
		Slow water movement	1.00	Depth to bedrock	0.96
ToA:					
Toccoa	85	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Flooding	0.60
		Flooding	0.60	Too acid	0.03
		Slow water movement	0.32	Depth to saturated zone	0.02
WdD:					
Wedowee	80	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	1.00
WeA:					
Wehadkee	80	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00	Too acid	0.42
WoB:					
Worsham	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Too acid	0.07	Too acid	1.00

Table 8.—Forestland Productivity

(Absence of any entry indicates that information was not available)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
AaB:				
Abell	loblolly pine	90	129	black walnut, loblolly pine, yellow-poplar
	northern red oak	80	57	
	shortleaf pine	80	129	
	Virginia pine	80	114	
	yellow-poplar	90	86	
AbB:				
Altavista	loblolly pine	91	129	loblolly pine
	longleaf pine	87	114	
	white oak	77	57	
ApB, ApC:				
Appling	loblolly pine	84	114	loblolly pine, shortleaf pine
	scarlet oak	74	57	
	shortleaf pine	65	100	
	Virginia pine	74	114	
	white oak	64	43	
	yellow-poplar	88	86	
ArC:				
Appling	loblolly pine	74	100	loblolly pine, shortleaf pine
	shortleaf pine	60	86	
	Virginia pine	65	100	
BuA:				
Buncombe	loblolly pine	90	129	American sycamore, eastern white pine, loblolly pine, yellow-poplar
	yellow-poplar	100	114	
CeB, CeC:				
Cecil	loblolly pine	83	114	loblolly pine, shortleaf pine
	northern red oak	81	57	
	post oak	72	57	
	scarlet oak	81	57	
	shortleaf pine	69	114	
	southern red oak	79	57	
	sweetgum	76	72	
	Virginia pine	71	114	
	white oak	79	57	
	yellow-poplar	92	86	
CgC:				
Cecil	loblolly pine	72	100	loblolly pine, shortleaf pine
	shortleaf pine	63	100	
	Virginia pine	65	100	
	white oak	64	43	
ChA:				
Chewacla	loblolly pine	95	143	American sycamore, loblolly pine, sweetgum, yellow-poplar
	sweetgum	97	129	
	water oak	80	72	
	yellow-poplar	95	100	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CoA:				
Congaree	American sycamore	89	100	American sycamore, black walnut, cherrybark oak, eastern cottonwood, loblolly pine, sweetgum, yellow-poplar
	black walnut	100	---	
	cherrybark oak	107	172	
	eastern cottonwood	107	143	
	loblolly pine	90	129	
	scarlet oak	100	86	
	sweetgum	100	143	
	willow oak	95	86	
	yellow-poplar	107	114	
CrA:				
Congaree	American sycamore	89	100	American sycamore, black walnut, cherrybark oak, eastern cottonwood, loblolly pine, sweetgum, yellow-poplar
	black walnut	100	---	
	cherrybark oak	107	172	
	eastern cottonwood	107	143	
	loblolly pine	90	129	
	scarlet oak	100	86	
	sweetgum	100	143	
	willow oak	95	86	
	yellow-poplar	107	114	
Chewacla	loblolly pine	95	143	American sycamore, loblolly pine, sweetgum, yellow-poplar
	sweetgum	97	129	
	water oak	80	72	
	yellow-poplar	95	100	
CuB, CuC:				
Cullen	loblolly pine	80	114	eastern white pine, loblolly pine
	northern red oak	70	57	
	shortleaf pine	70	114	
	yellow-poplar	80	72	
DAM:				
Dam	---	---	---	---
EnB, EnC:				
Enott	loblolly pine	73	100	loblolly pine
	shortleaf pine	63	100	
	sweetgum	87	100	
	yellow-poplar	88	86	
GeB, GeC:				
Georgeville	loblolly pine	81	114	black walnut, eastern redcedar, loblolly pine, Virginia pine, yellow-poplar
	longleaf pine	67	72	
	scarlet oak	70	57	
	shortleaf pine	63	100	
	southern red oak	67	43	
	white oak	69	57	
GgB, GgC:				
Georgeville	loblolly pine	81	114	black walnut, eastern redcedar, loblolly pine, Virginia pine, yellow-poplar
	longleaf pine	67	72	
	scarlet oak	70	57	
	shortleaf pine	63	100	
	southern red oak	67	43	
	white oak	69	57	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GoC:				
Goldston	loblolly pine	76	100	loblolly pine
	shortleaf pine	68	100	
	southern red oak	66	43	
	white oak	69	57	
GuC:				
Gullied land	---	---	---	---
HaB:				
Helena	loblolly pine	84	114	loblolly pine, yellow-poplar
	shortleaf pine	66	100	
HbC:				
Helena	loblolly pine	84	114	loblolly pine, yellow-poplar
	shortleaf pine	66	100	
Worsham	loblolly pine	88	129	eastern white pine, loblolly pine, yellow-poplar
	pin oak	85	72	
	southern red oak	80	57	
	Virginia pine	80	114	
	yellow-poplar	91	86	
HeB, HeC:				
Herndon	loblolly pine	80	114	loblolly pine, yellow-poplar
	shortleaf pine	61	86	
	southern red oak	72	57	
	white oak	65	43	
	yellow-poplar	91	86	
HwB:				
Hiwassee	loblolly pine	71	100	loblolly pine, shortleaf pine
	northern red oak	75	57	
	shortleaf pine	68	100	
	southern red oak	75	57	
	white oak	70	57	
IrB, IrC:				
Iredell	loblolly pine	67	86	eastern redcedar, loblolly pine
	post oak	44	29	
	shortleaf pine	58	86	
	white oak	47	29	
LoB, LoC:				
Louisburg	loblolly pine	77	100	loblolly pine, Virginia pine, yellow-poplar
	shortleaf pine	69	114	
	southern red oak	72	57	
	Virginia pine	71	114	
	white oak	68	57	
	yellow-poplar	84	86	
MdB:				
Masada	eastern white pine	82	143	eastern white pine, loblolly pine, yellow-poplar
	loblolly pine	80	114	
	shortleaf pine	85	143	
	southern red oak	70	57	
	Virginia pine	70	114	
	yellow-poplar	80	72	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
MtB, MtC:				
Mattaponi	loblolly pine	80	114	loblolly pine, shortleaf pine
	sweetgum	76	72	
	Virginia pine	70	114	
	white oak	70	57	
NaD:				
Nason	loblolly pine	80	114	eastern white pine, loblolly pine
	northern red oak	66	43	
	shortleaf pine	66	100	
	Virginia pine	69	114	
OaB, OaC:				
Orange	loblolly pine	75	100	loblolly pine
	northern red oak	60	43	
	shortleaf pine	60	86	
	Virginia pine	60	86	
PaB, PaC, PaD:				
Pacolet	loblolly pine	78	114	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	70	114	
	yellow-poplar	90	86	
PcD:				
Pacolet	loblolly pine	70	86	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	60	86	
	yellow-poplar	80	72	
TaD:				
Tatum	chestnut oak	68	100	loblolly pine
	loblolly pine	78	114	
	Virginia pine	68	100	
	white oak	65	43	
TcD:				
Tatum	chestnut oak	68	100	loblolly pine
	loblolly pine	78	114	
	Virginia pine	68	100	
	white oak	65	43	
ToA:				
Toccoa	loblolly pine	90	129	American sycamore, cherrybark oak, loblolly pine, yellow-poplar
	sweetgum	100	143	
	yellow-poplar	107	114	
WdD:				
Wedowee	loblolly pine	80	114	loblolly pine, shortleaf pine, Virginia pine, yellow-poplar
	northern red oak	70	57	
	shortleaf pine	70	114	
	southern red oak	70	57	
	Virginia pine	70	114	
	white oak	65	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
WeA:				
Wehadkee	loblolly pine	93	143	green ash, loblolly pine, sweetgum, yellow-poplar
	sweetgum	94	114	
	water oak	91	86	
	willow oak	110	114	
	yellow-poplar	100	114	
WoB:				
Worsham	loblolly pine	88	129	eastern white pine, loblolly pine, yellow-poplar
	pin oak	85	72	
	southern red oak	80	57	
	Virginia pine	80	114	
	yellow-poplar	91	86	

Table 9a.—Forestland 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 0.01 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	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AaB:							
Abell	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
AbB:							
Altavista	80	Slight		Well suited		Moderate	
						Low strength	0.50
ApB:							
Appling	90	Slight		Well suited		Moderate	
						Low strength	0.50
ApC:							
Appling	80	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
ArC:							
Appling	75	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
BuA:							
Buncombe	80	Moderate		Moderately suited		Moderate	
		Flooding	0.50	Flooding	0.50	Low strength	0.50
CeB:							
Cecil	95	Slight		Well suited		Moderate	
						Low strength	0.50
CeC:							
Cecil	85	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
CgC:							
Cecil	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
ChA:							
Chewacla	60	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
				Low strength	0.50		
CoA:							
Congaree	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
CrA:							
Congaree	55	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		

Table 9a.—Forestland Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
Chewacla	35	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
				Low strength	0.50		
CuB:							
Cullen	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
CuC:							
Cullen	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
EnC:							
Enott	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
GeB:							
Georgeville	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
GeC:							
Georgeville	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
GgB:							
Georgeville	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
GgC:							
Georgeville	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
GoC:							
Goldston	85	Slight		Poorly suited		Moderate	
				Slope	1.00	Low strength	0.50
GuC:							
Gullied land	85	Not rated		Not rated		Not rated	
HaB:							
Helena	90	Slight		Well suited		Moderate	
						Low strength	0.50

Table 9a.—Forestland Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HbC:							
Helena	60	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
Worsham	20	Slight		Poorly suited		Moderate	
				Wetness	1.00	Low strength	0.50
				Slope	0.50		
HeB:							
Herndon	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
HeC:							
Herndon	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
HwB:							
Hiwassee	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
IrB:							
Iredell	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
IrC:							
Iredell	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
LoB:							
Louisburg	85	Slight		Well suited		Moderate	
						Low strength	0.50
LoC:							
Louisburg	85	Slight		Poorly suited		Moderate	
				Slope	1.00	Low strength	0.50
MdB:							
Masada	85	Slight		Well suited		Moderate	
						Low strength	0.50
MtB:							
Mattaponi	90	Slight		Well suited		Moderate	
						Low strength	0.50
MtC:							
Mattaponi	90	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
NaD:							
Nason	70	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
OaB:							
Orange	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 9a.—Forestland Management (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OaC:							
Orange--------------	70	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
PaB:							
Pacolet-------------	95	Slight		Well suited		Moderate	
						Low strength	0.50
PaC:							
Pacolet-------------	90	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
PaD:							
Pacolet-------------	85	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
PcD:							
Pacolet-------------	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
TaD:							
Tatum---------------	80	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
TcD:							
Tatum---------------	95	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
ToA:							
Toccoa--------------	85	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
WdD:							
Wedowee-------------	80	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
WeA:							
Wehadkee------------	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	1.00		
				Low strength	0.50		
WoB:							
Worsham-------------	75	Slight		Poorly suited		Moderate	
				Wetness	1.00	Low strength	0.50

Table 9b.—Forestland 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 0.01 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	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AaB:							
Abell	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
AbB:							
Altavista	80	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
ApB:							
Appling	90	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
ApC:							
Appling	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
ArC:							
Appling	75	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
BuA:							
Buncombe	80	Slight		Slight		Moderately suited	
						Flooding	0.50
CeB:							
Cecil	95	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
CeC:							
Cecil	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
CgC:							
Cecil	95	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
ChA:							
Chewacla	60	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
CoA:							
Congaree	90	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
CrA:							
Congaree	55	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50

Table 9b.—Forestland Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
Chewacla	35	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
CuB:							
Cullen	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
CuC:							
Cullen	95	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
EnC:							
Enott	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
GeB:							
Georgeville	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
GeC:							
Georgeville	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
GgB:							
Georgeville	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
GgC:							
Georgeville	95	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
GoC:							
Goldston	85	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Slope	1.00
GuC:							
Gullied land	85	Not rated		Not rated		Not rated	

Table 9b.—Forestland Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
HaB:							
Helena	90	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
HbC:							
Helena	60	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
Worsham	20	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
HeB:							
Herndon	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
HeC:							
Herndon	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
HwB:							
Hiwassee	95	Slight		Slight		Moderately suited	
						Low strength	0.50
IrB:							
Iredell	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
IrC:							
Iredell	75	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
LoB:							
Louisburg	85	Slight		Slight		Well suited	
LoC:							
Louisburg	85	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Slope	1.00
MdB:							
Masada	85	Slight		Slight		Well suited	
MtB:							
Mattaponi	90	Slight		Slight		Well suited	
MtC:							
Mattaponi	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
NaD:							
Nason	70	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
OaB:							
Orange	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50

Table 9b.—Forestland Management (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
OaC:							
Orange	70	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
PaB:							
Pacolet	95	Slight		Slight		Well suited	
PaC:							
Pacolet	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
PaD:							
Pacolet	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
PcD:							
Pacolet	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
TaD:							
Tatum	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
TcD:							
Tatum	95	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
ToA:							
Toccoa	85	Slight		Slight		Poorly suited	
						Flooding	1.00
WdD:							
Wedowee	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
WeA:							
Wehadkee	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
WoB:							
Worsham	75	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00

Table 9c.—Forestland Management (Part 3)

(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	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AaB:							
Abell	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
AbB:							
Altavista	80	Well suited		Well suited		Well suited	
ApB:							
Appling	90	Well suited		Well suited		Well suited	
ApC:							
Appling	80	Well suited		Moderately suited		Well suited	
				Slope	0.50		
ArC:							
Appling	75	Well suited		Moderately suited		Well suited	
				Slope	0.50		
BuA:							
Buncombe	80	Well suited		Well suited		Well suited	
CeB:							
Cecil	95	Well suited		Well suited		Well suited	
CeC:							
Cecil	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
CgC:							
Cecil	95	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
ChA:							
Chewacla	60	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CoA:							
Congaree	90	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CrA:							
Congaree	55	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Chewacla	35	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CuB:							
Cullen	95	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 9c.—Forestland Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
CuC:							
Cullen	95	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
EnC:							
Enott	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
GeB:							
Georgeville	95	Well suited		Well suited		Moderately suited	
						Low strength	0.50
GeC:							
Georgeville	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
GgB:							
Georgeville	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
GgC:							
Georgeville	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
GoC:							
Goldston	85	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
GuC:							
Gullied land	85	Not rated		Not rated		Not rated	
HaB:							
Helena	90	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
HbC:							
Helena	60	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
				Slope	0.50		

Table 9c.—Forestland Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
Worsham	20	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
				Slope	0.50		
HeB:							
Herndon	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
HeC:							
Herndon	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
HwB:							
Hiwassee	95	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
IrB:							
Iredell	90	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
IrC:							
Iredell	75	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
LoB:							
Louisburg	85	Well suited		Well suited		Well suited	
LoC:							
Louisburg	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
MdB:							
Masada	85	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
MtB:							
Mattaponi	90	Well suited		Well suited		Well suited	
MtC:							
Mattaponi	90	Well suited		Moderately suited		Well suited	
				Slope	0.50		
NaD:							
Nason	70	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
OaB:							
Orange	90	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 9c.—Forestland Management (Part 3)—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
OaC:							
Orange	70	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
PaB:							
Pacolet	95	Well suited		Well suited		Well suited	
PaC:							
Pacolet	90	Well suited		Moderately suited		Well suited	
				Slope	0.50		
PaD:							
Pacolet	85	Well suited		Poorly suited		Well suited	
				Slope	0.75		
PcD:							
Pacolet	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
TaD:							
Tatum	80	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75		
TcD:							
Tatum	95	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75		
ToA:							
Toccoa	85	Well suited		Well suited		Well suited	
WdD:							
Wedowee	80	Well suited		Poorly suited		Well suited	
				Slope	0.75		
WeA:							
Wehadkee	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
WoB:							
Worsham	75	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		

Table 9d.—Forestland Management (Part 4)

(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	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AaB:					
Abell	90	Well suited		Well suited	
AbB:					
Altavista	80	Well suited		Well suited	
ApB:					
Appling	90	Well suited		Well suited	
ApC:					
Appling	80	Well suited		Well suited	
ArC:					
Appling	75	Well suited		Well suited	
BuA:					
Buncombe	80	Well suited		Well suited	
CeB:					
Cecil	95	Well suited		Well suited	
CeC:					
Cecil	85	Well suited		Well suited	
CgC:					
Cecil	95	Well suited		Well suited	
ChA:					
Chewacla	60	Well suited		Well suited	
CoA:					
Congaree	90	Well suited		Well suited	
CrA:					
Congaree	55	Well suited		Well suited	
Chewacla	35	Well suited		Well suited	
CuB:					
Cullen	95	Well suited		Well suited	
CuC:					
Cullen	95	Well suited		Well suited	
DAM:					
Dam	100	Not rated		Not rated	
EnB:					
Enott	80	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 9d.—Forestland Management (Part 4)—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
EnC:					
Enott	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
GeB:					
Georgeville	95	Well suited		Well suited	
GeC:					
Georgeville	85	Well suited		Well suited	
GgB:					
Georgeville	95	Well suited		Well suited	
GgC:					
Georgeville	95	Well suited		Well suited	
GoC:					
Goldston	85	Poorly suited		Well suited	
		Rock fragments	0.50		
GuC:					
Gullied land	85	Not rated		Not rated	
HaB:					
Helena	90	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
HbC:					
Helena	60	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Worsham	20	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
HeB:					
Herndon	90	Well suited		Well suited	
HeC:					
Herndon	85	Well suited		Well suited	
HwB:					
Hiwassee	95	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
IrB:					
Iredell	90	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 9d.—Forestland Management (Part 4)—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
IrC:					
Iredell	75	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
LoB:					
Louisburg	85	Well suited		Well suited	
LoC:					
Louisburg	85	Well suited		Well suited	
MdB:					
Masada	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
MtB:					
Mattaponi	90	Well suited		Well suited	
MtC:					
Mattaponi	90	Well suited		Well suited	
NaD:					
Nason	70	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
OaB:					
Orange	90	Well suited		Well suited	
OaC:					
Orange	70	Well suited		Well suited	
PaB:					
Pacolet	95	Well suited		Well suited	
PaC:					
Pacolet	90	Well suited		Well suited	
PaD:					
Pacolet	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
PcD:					
Pacolet	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
TaD:					
Tatum	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		
TcD:					
Tatum	95	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		

Table 9d.—Forestland Management (Part 4)—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
ToA:					
Toccoa	85	Well suited		Well suited	
WdD:					
Wedowee	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
WeA:					
Wehadkee	80	Well suited		Well suited	
WoB:					
Worsham	75	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 9e.—Forestland Management (Part 5)

(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	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AaB:					
Abell	90	Moderate		Low	
		Texture/rock fragments	0.50		
AbB:					
Altavista	80	Moderate		Low	
		Texture/rock fragments	0.50		
ApB:					
Appling	90	Moderate		Low	
		Texture/rock fragments	0.50		
ApC:					
Appling	80	Moderate		Low	
		Texture/rock fragments	0.50		
ArC:					
Appling	75	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
BuA:					
Buncombe	80	High		Low	
		Texture/rock fragments	1.00		
CeB:					
Cecil	95	Moderate		Low	
		Texture/rock fragments	0.50		
CeC:					
Cecil	85	Moderate		Low	
		Texture/rock fragments	0.50		
CgC:					
Cecil	95	Low		Low	
ChA:					
Chewacla	60	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
CoA:					
Congaree	90	Low		Low	
		Texture/rock fragments	0.10		

Table 9e.—Forestland Management (Part 5)—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
CrA:					
Congaree------------	55	Low		Low	
		Texture/rock fragments	0.10		
Chewacla------------	35	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
CuB:					
Cullen--------------	95	Low		Low	
CuC:					
Cullen--------------	95	Moderate		Low	
		Texture/rock fragments	0.50		
DAM:					
Dam-----------------	100	Not rated		Not rated	
EnB:					
Enott---------------	80	Moderate		Low	
		Texture/rock fragments	0.50		
EnC:					
Enott---------------	85	Moderate		Low	
		Texture/rock fragments	0.50		
GeB:					
Georgeville---------	95	Moderate		Low	
		Texture/rock fragments	0.50		
GeC:					
Georgeville---------	85	Moderate		Low	
		Texture/rock fragments	0.50		
GgB:					
Georgeville---------	95	Moderate		Low	
		Texture/rock fragments	0.50		
GgC:					
Georgeville---------	95	Moderate		Low	
		Texture/rock fragments	0.50		
GoC:					
Goldston------------	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		

Table 9e.—Forestland Management (Part 5)—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
GuC:					
Gullied land	85	Not rated		Not rated	
HaB:					
Helena	90	Moderate		Low	
		Texture/rock fragments	0.50		
HbC:					
Helena	60	Moderate		Low	
		Texture/rock fragments	0.50		
Worsham	20	Moderate		High	
		Texture/rock fragments	0.50	Wetness	1.00
HeB:					
Herndon	90	Moderate		Low	
		Texture/rock fragments	0.50		
HeC:					
Herndon	85	Moderate		Low	
		Texture/rock fragments	0.50		
HwB:					
Hiwassee	95	Low		Low	
IrB:					
Iredell	90	Moderate		Low	
		Texture/rock fragments	0.50		
IrC:					
Iredell	75	Moderate		Low	
		Texture/rock fragments	0.50		
LoB:					
Louisburg	85	Moderate		Low	
		Texture/rock fragments	0.50		
LoC:					
Louisburg	85	Moderate		Low	
		Texture/rock fragments	0.50		
MdB:					
Masada	85	Low		Low	
		Texture/rock fragments	0.10		

Table 9e.—Forestland Management (Part 5)—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
MtB:					
Mattaponi	90	Moderate		Low	
		Texture/rock fragments	0.50		
MtC:					
Mattaponi	90	Moderate		Low	
		Texture/rock fragments	0.50		
NaD:					
Nason	70	Low		Low	
		Texture/rock fragments	0.10		
OaB:					
Orange	90	Low		Low	
		Texture/rock fragments	0.10		
OaC:					
Orange	70	Low		Low	
		Texture/rock fragments	0.10		
PaB:					
Pacolet	95	Moderate		Low	
		Texture/rock fragments	0.50		
PaC:					
Pacolet	90	Moderate		Low	
		Texture/rock fragments	0.50		
PaD:					
Pacolet	85	Moderate		Low	
		Texture/rock fragments	0.50		
PcD:					
Pacolet	85	Low		Low	
TaD:					
Tatum	80	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
TcD:					
Tatum	95	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
ToA:					
Toccoa	85	Moderate		Low	
		Texture/rock fragments	0.50		

Table 9e.—Forestland Management (Part 5)—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WdD:					
Wedowee	80	Moderate		Low	
		Texture/rock fragments	0.50		
WeA:					
Wehadkee	80	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
WoB:					
Worsham	75	Moderate		High	
		Texture/rock fragments	0.50	Wetness	1.00

Table 10a.—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: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
AaB:							
Abell	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
AbB:							
Altavista	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.19	Depth to saturated zone	0.39
		Depth to saturated zone	0.39			Slope	0.12
ApB:							
Appling	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
ApC:							
Appling	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
ArC:							
Appling	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
BuA:							
Buncombe	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.92	Too sandy	0.92
		Too sandy	0.92			Flooding	0.60
CeB:							
Cecil	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
CeC:							
Cecil	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
CgC:							
Cecil	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
ChA:							
Chewacla	60	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	0.60
CoA:							
Congaree	90	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
CrA:							
Congaree	55	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00

Table 10a.—Recreation (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
Chewacla	35	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
CuB:							
Cullen	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
CuC:							
Cullen	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
						Slope	0.50
						Gravel content	0.22
EnC:							
Enott	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.94	Slow water movement	0.94	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.94
						Gravel content	0.22
GeB:							
Georgeville	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
GeC:							
Georgeville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
GgB:							
Georgeville	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
GgC:							
Georgeville	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
GoC:							
Goldston	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.84	Slope	0.84	Depth to bedrock	1.00
						Large stones content	0.26
GuC:							
Gullied land	85	Not rated		Not rated		Not rated	

Table 10a.—Recreation (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
HaB:							
Helena	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
						Depth to saturated zone	0.39
HbC:							
Helena	60	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.94	Slow water movement	0.94	Slope	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slow water movement	0.94
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
Worsham	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
		Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	1.00
HeB:							
Herndon	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
HeC:							
Herndon	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
HwB:							
Hiwassee	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.22
IrB:							
Iredell	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Slow water movement	0.94	Depth to saturated zone	0.98
		Slow water movement	0.94	Depth to saturated zone	0.75	Slow water movement	0.94
						Slope	0.50
IrC:							
Iredell	75	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.98	Slow water movement	0.94	Slope	1.00
		Slow water movement	0.94	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Slope	0.04	Slope	0.04	Slow water movement	0.94
LoB:							
Louisburg	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Slope	0.50

Table 10a.—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
LoC:							
Louisburg	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
						Depth to bedrock	0.54
MdB:							
Masada	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.22
MtB:							
Mattaponi	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.15	Slow water movement	0.15	Gravel content	0.56
						Slope	0.50
						Slow water movement	0.15
MtC:							
Mattaponi	90	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.15	Slow water movement	0.15	Slope	1.00
						Gravel content	0.56
		Slope	0.04	Slope	0.04	Slow water movement	0.15
NaD:							
Nason	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.44
OaB:							
Orange	90	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.44	Depth to saturated zone	0.22	Slope	0.50
						Depth to saturated zone	0.44
OaC:							
Orange	70	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
						Slow water movement	1.00
		Depth to saturated zone	0.44	Depth to saturated zone	0.22	Depth to saturated zone saturated zone	0.44
		Slope	0.04	Slope	0.04		
PaB:							
Pacolet	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
PaC:							
Pacolet	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
PaD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 10a.—Recreation (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
PcD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
TaD:							
Tatum	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.22
TcD:							
Tatum	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.22
ToA:							
Toccoa	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
WdD:							
Wedowee	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
WeA:							
Wehadkee	80	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
WoB:							
Worsham	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
						Slope	0.50

Table 10b.—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: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
AaB:							
Abell	90	Not limited		Not limited		Not limited	
AbB:							
Altavista	80	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
ApB:							
Appling	90	Not limited		Not limited		Not limited	
ApC:							
Appling	80	Not limited		Not limited		Somewhat limited	
						Slope	0.04
ArC:							
Appling	75	Not limited		Not limited		Somewhat limited	
						Slope	0.04
BuA:							
Buncombe	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.92	Too sandy	0.92	Droughty	0.94
						Flooding	0.60
CeB:							
Cecil	95	Not limited		Not limited		Not limited	
CeC:							
Cecil	85	Not limited		Not limited		Somewhat limited	
						Slope	0.04
CgC:							
Cecil	95	Not limited		Not limited		Somewhat limited	
						Slope	0.04
ChA:							
Chewacla	60	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60
CoA:							
Congaree	90	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
CrA:							
Congaree	55	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
Chewacla	35	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

Table 10b.—Recreation (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
CuB:							
Cullen	95	Not limited		Not limited		Not limited	
CuC:							
Cullen	95	Not limited		Not limited		Somewhat limited	
						Slope	0.04
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Not limited		Not limited		Not limited	
EnC:							
Enott	85	Not limited		Not limited		Somewhat limited	
						Slope	0.04
GeB:							
Georgeville	95	Not limited		Not limited		Not limited	
GeC:							
Georgeville	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
GgB:							
Georgeville	95	Not limited		Not limited		Not limited	
GgC:							
Georgeville	95	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
GoC:							
Goldston	85	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.84
GuC:							
Gullied land	85	Not rated		Not rated		Not rated	
HaB:							
Helena	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
HbC:							
Helena	60	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
						Slope	0.04
Worsham	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
						Slope	0.04
HeB:							
Herndon	90	Not limited		Not limited		Not limited	

Table 10b.—Recreation (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
HeC:							
Herndon-------------	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
HwB:							
Hiwassee------------	95	Not limited		Not limited		Not limited	
IrB:							
Iredell-------------	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
IrC:							
Iredell-------------	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Slope	0.04
LoB:							
Louisburg-----------	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Droughty	0.19
LoC:							
Louisburg-----------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.84
						Depth to bedrock	0.54
						Droughty	0.19
MdB:							
Masada--------------	85	Not limited		Not limited		Not limited	
MtB:							
Mattaponi-----------	90	Not limited		Not limited		Not limited	
MtC:							
Mattaponi-----------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.04
NaD:							
Nason---------------	70	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
OaB:							
Orange--------------	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.22
OaC:							
Orange--------------	70	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.22
						Slope	0.04
PaB:							
Pacolet-------------	95	Not limited		Not limited		Not limited	

Table 10b.—Recreation (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
PaC:							
Pacolet-------------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.04
PaD:							
Pacolet-------------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
PcD:							
Pacolet-------------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
TaD:							
Tatum---------------	80	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
TcD:							
Tatum---------------	95	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
ToA:							
Toccoa--------------	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
WdD:							
Wedowee-------------	80	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
WeA:							
Wehadkee------------	80	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
WoB:							
Worsham-------------	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 11a.—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
AaB:							
Abell	90	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.99		
				Shrink-swell	0.50		
AbB:							
Altavista	80	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
ApB:							
Appling	90	Not limited		Not limited		Not limited	
ApC:							
Appling	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
ArC:							
Appling	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
BuA:							
Buncombe	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
CeB:							
Cecil	95	Not limited		Not limited		Not limited	
CeC:							
Cecil	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
CgC:							
Cecil	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
ChA:							
Chewacla	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
CoA:							
Congaree	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.90		

Table 11a.—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
CrA:							
Congaree	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.90		
Chewacla	35	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
CuB:							
Cullen	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
CuC:							
Cullen	95	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
EnC:							
Enott	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
GeB:							
Georgeville	95	Not limited		Not limited		Not limited	
GeC:							
Georgeville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
GgB:							
Georgeville	95	Not limited		Not limited		Not limited	
GgC:							
Georgeville	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
GoC:							
Goldston	85	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to hard bedrock	0.99	Slope	1.00
		Large stones content	0.37	Slope	0.84	Large stones content	0.37
GuC:							
Gullied land	85	Not rated		Not rated		Not rated	

Table 11a.—Building Site Development (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
HaB:							
Helena	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	0.39	Shrink-swell	1.00	Depth to saturated zone	0.39
HbC:							
Helena	60	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.39	Shrink-swell	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
Worsham	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
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
HeB:							
Herndon	90	Not limited		Not limited		Not limited	
HeC:							
Herndon	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
HwB:							
Hiwassee	95	Not limited		Not limited		Not limited	
IrB:							
Iredell	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	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
IrC:							
Iredell	75	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.98	Shrink-swell	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.98
LoB:							
Louisburg	85	Not limited		Somewhat limited		Not limited	
				Depth to hard bedrock	0.77		
				Depth to soft bedrock	0.54		
LoC:							
Louisburg	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to hard bedrock	0.77		
				Depth to soft bedrock	0.54		

Table 11a.—Building Site Development (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
MdB:							
Masada	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
MtB:							
Mattaponi	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
				Shrink-swell	0.50		
MtC:							
Mattaponi	90	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Depth to saturated zone	0.95	Slope	1.00
		Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
				Slope	0.04		
NaD:							
Nason	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
OaB:							
Orange	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	0.44	Shrink-swell	1.00	Depth to saturated zone	0.44
				Depth to hard bedrock	0.61		
OaC:							
Orange	70	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.44	Shrink-swell	1.00	Slope	1.00
		Slope	0.04	Depth to hard bedrock	0.61	Depth to saturated zone	0.44
PaB:							
Pacolet	95	Not limited		Not limited		Not limited	
PaC:							
Pacolet	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
PaD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
PcD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
TaD:							
Tatum	80	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 11a.—Building Site Development (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
TcD:							
Tatum	95	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
ToA:							
Toccoa	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.73		
WdD:							
Wedowee	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
WeA:							
Wehadkee	80	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
WoB:							
Worsham	75	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	Shrink-swell	0.50	Shrink-swell	0.50

Table 11b.—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
AaB:							
Abell	90	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		
				Too clayey	0.02		
AbB:							
Altavista	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Flooding	0.40	Cutbanks cave	0.10		
		Depth to saturated zone	0.19				
ApB:							
Appling	90	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.10	Too clayey	0.28		
				Cutbanks cave	0.10		
ApC:							
Appling	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.28	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
ArC:							
Appling	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.28	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
BuA:							
Buncombe	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Droughty	0.94
				Flooding	0.60	Flooding	0.60
CeB:							
Cecil	95	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.10	Too clayey	0.50		
				Cutbanks cave	0.10		
CeC:							
Cecil	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.50	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
CgC:							
Cecil	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.50	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		

Table 11b.—Building Site Development (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
ChA:							
Chewacla	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Flooding	0.60	Flooding	0.60
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
CoA:							
Congaree	90	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.90	Flooding	0.60
		Low strength	1.00	Flooding	0.60		
				Cutbanks cave	0.10		
CrA:							
Congaree	55	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.90	Flooding	1.00
		Low strength	1.00	Flooding	0.80		
				Cutbanks cave	0.10		
Chewacla	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Low strength	1.00	Flooding	0.80	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
CuB:							
Cullen	95	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Too clayey	1.00		
		Low strength	0.10	Cutbanks cave	0.10		
CuC:							
Cullen	95	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Too clayey	1.00	Slope	0.04
		Low strength	0.10	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.50		
		Shrink-swell	1.00	Cutbanks cave	0.10		
EnC:							
Enott	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Too clayey	0.50	Slope	0.04
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
GeB:							
Georgeville	95	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.10	Too clayey	0.50		
				Cutbanks cave	0.10		

Table 11b.—Building Site Development (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
GeC:							
Georgeville---------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.50	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
GgB:							
Georgeville---------	95	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.10	Too clayey	0.50		
				Cutbanks cave	0.10		
GgC:							
Georgeville---------	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.50	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
GoC:							
Goldston------------	85	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Droughty	1.00
						Depth to bedrock	1.00
		Large stones content	0.37	Depth to hard bedrock	0.99	Large stones content	0.26
		Slope	0.04	Large stones content	0.37	Slope	0.0
				Slope	0.04		
GuC:							
Gullied land--------	85	Not rated		Not rated		Not rated	
HaB:							
Helena--------------	90	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Low strength	1.00				
		Depth to saturated zone	0.19	Too clayey	0.12		
				Cutbanks cave	0.10		
HbC:							
Helena--------------	60	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Low strength	1.00				
		Depth to saturated zone	0.19	Too clayey	0.12	Slope	0.04
				Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
Worsham-------------	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
		Low strength	1.00	Too clayey	0.50	Slope	0.04
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
HeB:							
Herndon-------------	90	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.10	Too clayey	0.50		
				Cutbanks cave	0.10		

Table 11b.—Building Site Development (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
HeC:							
Herndon	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.50	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
HwB:							
Hiwassee	95	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.10	Too clayey	0.88		
				Cutbanks cave	0.10		
IrB:							
Iredell	90	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00				
		Depth to saturated zone	0.75	Too clayey	0.50		
				Cutbanks cave	0.10		
IrC:							
Iredell	75	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00				
		Depth to saturated zone	0.75	Too clayey	0.50	Slope	0.04
				Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
LoB:							
Louisburg	85	Not limited		Somewhat limited		Somewhat limited	
				Depth to hard bedrock	0.77	Depth to bedrock	0.54
				Depth to soft bedrock	0.54	Droughty	0.19
				Cutbanks cave	0.10		
LoC:							
Louisburg	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84	Slope	0.84
				Depth to hard bedrock	0.77	Depth to bedrock	0.54
						Droughty	0.19
				Depth to soft bedrock	0.54		
				Cutbanks cave	0.10		
MdB:							
Masada	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
		Shrink-swell	0.50	Cutbanks cave	0.10		
MtB:							
Mattaponi	90	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.95		
		Shrink-swell	0.50	Too clayey	0.12		
				Cutbanks cave	0.10		

Table 11b.—Building Site Development (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
MtC:							
Mattaponi	90	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	0.95	Slope	0.04
		Shrink-swell	0.50	Too clayey	0.12		
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
NaD:							
Nason	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Too clayey	0.50		
				Cutbanks cave	0.10		
OaB:							
Orange	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.22
		Shrink-swell	1.00	Depth to hard bedrock	0.61		
		Depth to saturated zone	0.22	Too clayey	0.50		
				Cutbanks cave	0.10		
OaC:							
Orange	70	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.22
		Shrink-swell	1.00	Depth to hard bedrock	0.61	Slope	0.04
		Depth to saturated zone	0.22	Too clayey	0.50		
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
PaB:							
Pacolet	95	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.10	Too clayey	0.50		
				Cutbanks cave	0.10		
PaC:							
Pacolet	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.10	Too clayey	0.50	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
PaD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.10	Too clayey	0.50		
				Cutbanks cave	0.10		
PcD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.10	Too clayey	0.50		
				Cutbanks cave	0.10		

Table 11b.—Building Site Development (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
TaD:							
Tatum---------------	80	Very limited		Very limited		Very limited	
		Low strength	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.10		
TcD:							
Tatum---------------	95	Very limited		Very limited		Very limited	
		Low strength	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.10		
ToA:							
Toccoa--------------	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.73	Flooding	0.60
				Flooding	0.60		
				Cutbanks cave	0.10		
WdD:							
Wedowee-------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.08	Too clayey	0.12		
				Cutbanks cave	0.10		
WeA:							
Wehadkee------------	80	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
		Low strength	1.00	Cutbanks cave	0.10		
WoB:							
Worsham-------------	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.10		

Table 12a.—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: Rating class and limiting features	Septic tank absorption fields: Value	Sewage lagoons: Rating class and limiting features	Sewage lagoons: Value
AaB:					
Abell	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.99
				Slope	0.32
AbB:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
		Flooding	0.40	Flooding	0.40
ApB:					
Appling	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
ApC:					
Appling	80	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
ArC:					
Appling	75	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
BuA:					
Buncombe	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
CeB:					
Cecil	95	Somewhat limited		Very limited	
		Slow water movement	0.50	Seepage	0.99
				Slope	0.32
CeC:					
Cecil	85	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.99

Table 12a.—Sanitary Facilities (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
CgC:					
Cecil	95	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.99
ChA:					
Chewacla	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	0.50	Seepage	0.50
CoA:					
Congaree	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	0.50	Seepage	0.50
CrA:					
Congaree	55	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	0.50	Seepage	0.50
Chewacla	35	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	0.50	Seepage	0.50
CuB:					
Cullen	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
CuC:					
Cullen	95	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
DAM:					
Dam	100	Not rated		Not rated	
EnB:					
Enott	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.32
		Depth to bedrock	0.52	Depth to soft bedrock	0.08

Table 12a.—Sanitary Facilities (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
EnC:					
Enott	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.52	Depth to soft bedrock	0.08
		Slope	0.04		
GeB:					
Georgeville	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
GeC:					
Georgeville	85	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
GgB:					
Georgeville	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
GgC:					
Georgeville	95	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
GoC:					
Goldston	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
GuC:					
Gullied land	85	Not rated		Not rated	
HaB:					
Helena	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.99
				Slope	0.32
HbC:					
Helena	60	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Seepage	0.99

Table 12a.—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
Worsham	20	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04		
HeB:					
Herndon	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
HeC:					
Herndon	85	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.04		
HwB:					
Hiwassee	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
IrB:					
Iredell	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to soft bedrock	0.54
		Depth to bedrock	0.83	Seepage	0.50
IrC:					
Iredell	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	1.00
				Depth to soft bedrock	0.54
		Depth to bedrock	0.83		
LoB:					
Louisburg	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to hard bedrock	0.77
LoC:					
Louisburg	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00	Slope	1.00

Table 12a.—Sanitary Facilities (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
MdB:					
Masada	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
MtB:					
Mattaponi	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
				Slope	0.32
MtC:					
Mattaponi	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	1.00
		Slope	0.04		
NaD:					
Nason	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
				Depth to soft bedrock	0.01
		Depth to bedrock	0.36		
OaB:					
Orange	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to soft bedrock	0.99
		Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Depth to bedrock	0.99	Depth to hard bedrock	0.61
OaC:					
Orange	70	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Depth to soft bedrock	0.99
		Depth to saturated zone	1.00		
				Depth to saturated zone	0.78
		Depth to bedrock	0.99		
PaB:					
Pacolet	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
PaC:					
Pacolet	90	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.04		

Table 12a.—Sanitary Facilities (Part 1)—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
PaD:					
Pacolet	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
PcD:					
Pacolet	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
TaD:					
Tatum	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.86	Depth to soft bedrock	0.61
		Slow water movement	0.50	Seepage	0.50
TcD:					
Tatum	95	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.99	Depth to soft bedrock	0.96
		Slow water movement	0.50	Seepage	0.50
ToA:					
Toccoa	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage, bottom	1.00	Depth to saturated zone	0.92
WdD:					
Wedowee	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
WeA:					
Wehadkee	80	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	0.50	Seepage	0.50
WoB:					
Worsham	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.32

Table 12b.—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
AaB:							
Abell	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to saturated zone	0.24
AbB:							
Altavista	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Too clayey	0.50	Flooding	0.40	Too clayey	0.50
		Flooding	0.40				
ApB:							
Appling	90	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
ApC:							
Appling	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
ArC:							
Appling	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
BuA:							
Buncombe	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	0.50
		Too sandy	0.50				
CeB:							
Cecil	95	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
CeC:							
Cecil	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
CgC:							
Cecil	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
ChA:							
Chewacla	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		

Table 12b.—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
CoA:							
Congaree	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Too clayey	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
		Too clayey	0.50				
CrA:							
Congaree	55	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Too clayey	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
		Too clayey	0.50				
Chewacla	35	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		
CuB:							
Cullen	95	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50
CuC:							
Cullen	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Hard to compact	0.50
						Slope	0.04
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	0.08	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to bedrock	0.08
EnC:							
Enott	85	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	0.08	Too clayey	1.00
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Depth to bedrock	0.08
GeB:							
Georgeville	95	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50
GeC:							
Georgeville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Hard to compact	0.50
						Slope	0.04

Table 12b.—Sanitary Facilities (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
GgB:							
Georgeville---------	95	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50
GgC:							
Georgeville---------	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Hard to compact	0.50
						Slope	0.04
GoC:							
Goldston------------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Slope	0.84	Slope	0.84
		Slope	0.84			Seepage	0.50
GuC:							
Gullied land--------	85	Not rated		Very limited		Not rated	
				Slope	1.00		
HaB:							
Helena--------------	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to saturated zone	0.86
HbC:							
Helena--------------	60	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Depth to saturated zone	0.86
Worsham-------------	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
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
HeB:							
Herndon-------------	90	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50
HeC:							
Herndon-------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Hard to compact	0.50
						Slope	0.04
HwB:							
Hiwassee------------	95	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50

Table 12b.—Sanitary Facilities (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
IrB:							
Iredell	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.54	Hard to compact	1.00
		Too clayey	1.00			Depth to saturated zone	0.99
IrC:							
Iredell	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
						Hard to compact	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.54	Depth to saturated zone	0.99
		Too clayey	1.00	Slope	0.04		
LoB:							
Louisburg	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Depth to bedrock	1.00	Seepage	1.00
LoC:							
Louisburg	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Depth to bedrock	1.00	Seepage	1.00
				Slope	0.84	Slope	0.84
		Slope	0.84				
MdB:							
Masada	85	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
MtB:							
Mattaponi	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
						Hard to compact	1.00
		Too clayey	1.00			Depth to saturated zone	0.11
MtC:							
Mattaponi	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
						Hard to compact	1.00
		Too clayey	1.00	Slope	0.04	Depth to saturated zone	0.11
		Slope	0.04				
NaD:							
Nason	70	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to bedrock	0.01	Depth to bedrock	0.01
OaB:							
Orange	90	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to bedrock	0.99	Too clayey	1.00
				Depth to saturated zone	0.78	Hard to compact	1.00
		Depth to bedrock	1.00			Depth to bedrock	0.99
		Too clayey	1.00				

Table 12b.—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
OaC:							
Orange	70	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to bedrock	0.99	Too clayey	1.00
		Depth to bedrock	1.00	Depth to saturated zone	0.78	Hard to compact	1.00
		Too clayey	1.00	Slope	0.04	Depth to bedrock	0.99
PaB:							
Pacolet	95	Not limited		Not limited		Not limited	
PaC:							
Pacolet	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04	Slope	0.04
PaD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
PcD:							
Pacolet	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
TaD:							
Tatum	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.61	Hard to compact	1.00
		Slope	1.00			Slope	1.00
TcD:							
Tatum	95	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.96	Hard to compact	1.00
		Slope	1.00			Slope	1.00
ToA:							
Toccoa	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage, bottom layer	1.00	Seepage	1.00		
WdD:							
Wedowee	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
WeA:							
Wehadkee	80	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		
WoB:							
Worsham	75	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	1.00			Too clayey	1.00
						Hard to compact	1.00

Table 13a.—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
AaB:					
Abell	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AbB:					
Altavista	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
ApB:					
Appling	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
ApC:					
Appling	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
ArC:					
Appling	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
BuA:					
Buncombe	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.06
CeB:					
Cecil	95	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
CeC:					
Cecil	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
CgC:					
Cecil	95	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
ChA:					
Chewacla	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13a.—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
CoA:					
Congaree------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CrA:					
Congaree------------	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Chewacla------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CuB:					
Cullen--------------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CuC:					
Cullen--------------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DAM:					
Dam-----------------	100	Not rated		Not rated	
EnB:					
Enott---------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
EnC:					
Enott---------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GeB:					
Georgeville---------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GeC:					
Georgeville---------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GgB:					
Georgeville---------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GgC:					
Georgeville---------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13a.—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
GoC:					
Goldston------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
GuC:					
Gullied land--------	85	Not rated		Not rated	
HaB:					
Helena--------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HbC:					
Helena--------------	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Worsham-------------	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01
HeB:					
Herndon-------------	90	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
HeC:					
Herndon-------------	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
HwB:					
Hiwassee------------	95	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
IrB:					
Iredell-------------	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
IrC:					
Iredell-------------	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
LoB:					
Louisburg-----------	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.04
LoC:					
Louisburg-----------	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.04

Table 13a.—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
MdB:					
Masada--------------	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
MtB:					
Mattaponi-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MtC:					
Mattaponi-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
NaD:					
Nason---------------	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
OaB:					
Orange--------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
OaC:					
Orange--------------	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PaB:					
Pacolet-------------	95	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.04
PaC:					
Pacolet-------------	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
PaD:					
Pacolet-------------	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
PcD:					
Pacolet-------------	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
TaD:					
Tatum---------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TcD:					
Tatum---------------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13a.—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
ToA:					
Toccoa--------------	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
WdD:					
Wedowee-------------	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
WeA:					
Wehadkee------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WoB:					
Worsham-------------	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01

Table 13b.—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: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
AaB:							
Abell	90	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.98
		Too acid	0.54	Wetness depth	0.98	Too acid	0.98
AbB:							
Altavista	80	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.53
		Too acid	0.16	Wetness depth	0.53	Too acid	0.68
ApB:							
Appling	90	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.16				
ApC:							
Appling	80	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.16			Slope	0.96
ArC:							
Appling	75	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.16			Slope	0.96
BuA:							
Buncombe	80	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.02
		Too sandy	0.02				
		Organic matter content low	0.12				
CeB:							
Cecil	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.05			Too acid	0.98
		Too acid	0.54				
CeC:							
Cecil	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.05			Slope	0.96
		Too acid	0.54			Too acid	0.98

Table 13b.—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
CgC:							
Cecil	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.05			Slope	0.96
		Too acid	0.54			Too acid	0.98
ChA:							
Chewacla	60	Fair		Poor		Poor	
		Too acid	0.84	Low strength	0.00	Wetness depth	0.00
		Water erosion	0.99	Wetness depth	0.00		
CoA:							
Congaree	90	Fair		Poor		Good	
		Too acid	0.84	Low strength	0.00		
		Water erosion	0.99				
CrA:							
Congaree	55	Fair		Poor		Good	
		Too acid	0.84	Low strength	0.00		
		Water erosion	0.99				
Chewacla	35	Fair		Poor		Poor	
		Too acid	0.84	Low strength	0.00	Wetness depth	0.00
		Water erosion	0.99	Wetness depth	0.00		
CuB:							
Cullen	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87		
		Too acid	0.99				
CuC:							
Cullen	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.96
		Too acid	0.99				
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.51		
				Depth to bedrock	0.92		
		Too acid	0.54				
EnC:							
Enott	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.51	Slope	0.96
				Depth to bedrock	0.92		
		Too acid	0.54				

Table 13b.—Construction Materials (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
GeB:							
Georgeville	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.98
		Too acid	0.54				
GeC:							
Georgeville	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.96
		Too acid	0.54			Too acid	0.98
GgB:							
Georgeville	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.05			Too acid	0.98
		Too acid	0.54				
GgC:							
Georgeville	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.05			Slope	0.96
		Too acid	0.54			Too acid	0.98
GoC:							
Goldston	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Organic matter content low	0.12			Slope	0.16
GuC:							
Gullied land	85	Not rated		Not rated		Not rated	
HaB:							
Helena	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.16	Shrink-swell	0.73	Too acid	0.68
HbC:							
Helena	60	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.16	Shrink-swell	0.73	Too acid	0.68
Worsham	20	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.16	Shrink-swell	0.89	Too acid	0.68

Table 13b.—Construction Materials (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
HeB:							
Herndon	90	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.98
		Too acid	0.54				
HeC:							
Herndon	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.96
						Too acid	0.98
		Too acid	0.54				
HwB:							
Hiwassee	95	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Rock fragments	0.88
						Too acid	0.98
		Too acid	0.54				
IrB:							
Iredell	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.00	Wetness depth	0.14
				Wetness depth	0.14		
		Too acid	0.84				
IrC:							
Iredell	75	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.00	Wetness depth	0.14
				Wetness depth	0.14	Slope	0.96
		Too acid	0.84				
LoB:							
Louisburg	85	Fair		Poor		Fair	
		Droughty	0.04	Depth to bedrock	0.00	Depth to bedrock	0.46
		Depth to bedrock	0.46			Too acid	0.98
		Too acid	0.50				
LoC:							
Louisburg	85	Fair		Poor		Fair	
		Droughty	0.04	Depth to bedrock	0.00	Slope	0.16
		Depth to bedrock	0.46			Depth to bedrock	0.46
		Too acid	0.50			Too acid	0.98
MdB:							
Masada	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	Too acid	0.98
		Too acid	0.54				

Table 13b.—Construction Materials (Part 2)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
MtB:							
Mattaponi-----------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.94	Too acid	0.68
		Too acid	0.16				
MtC:							
Mattaponi-----------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.94	Too acid	0.68
						Slope	0.96
		Too acid	0.16				
NaD:							
Nason---------------	70	Fair		Fair		Poor	
		Organic matter content low	0.02	Slope	0.98	Slope	0.00
				Depth to bedrock	0.99	Rock fragments	0.08
		Too acid	0.50			Hard to reclaim (rock fragments)	0.12
OaB:							
Orange--------------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Depth to bedrock	0.01	Wetness depth	0.50
				Wetness depth	0.50	Too acid	0.98
		Too acid	0.54				
OaC:							
Orange--------------	70	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Depth to bedrock	0.01	Wetness depth	0.50
				Wetness depth	0.50	Slope	0.96
		Too acid	0.54				
PaB:							
Pacolet-------------	95	Poor		Good		Poor	
		Too clayey	0.00			Too clayey	0.00
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.50				
PaC:							
Pacolet-------------	90	Poor		Good		Poor	
		Too clayey	0.00			Too clayey	0.00
		Organic matter content low	0.02			Too acid	0.68
						Slope	0.96
		Too acid	0.50				
PaD:							
Pacolet-------------	85	Poor		Fair		Poor	
		Too clayey	0.00	Slope	0.98	Too clayey	0.00
		Organic matter content low	0.02			Slope	0.00
						Too acid	0.68
		Too acid	0.50				8

Table 13b.—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
PcD:							
Pacolet-------------	85	Poor		Fair		Poor	
		Too clayey	0.00	Slope	0.98	Too clayey	0.00
		Organic matter content low	0.02			Slope	0.00
		Too acid	0.50			Too acid	0.68
TaD:							
Tatum---------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Depth to bedrock	0.39	Slope	0.00
				Shrink-swell	0.87	Too acid	0.98
		Too acid	0.16				
TcD:							
Tatum---------------	95	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Depth to bedrock	0.04	Slope	0.00
				Shrink-swell	0.87	Too acid	0.98
		Too acid	0.54				
ToA:							
Toccoa--------------	85	Fair		Good		Good	
		Organic matter content low	0.12				
		Too acid	0.84				
WdD:							
Wedowee-------------	80	Poor		Fair		Poor	
		Too clayey	0.00	Slope	0.98	Too clayey	0.00
		Organic matter content low	0.02			Slope	0.00
						Too acid	0.98
		Too acid	0.50				
WeA:							
Wehadkee------------	80	Fair		Poor		Poor	
		Too acid	0.84	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.90	Low strength	0.00		
WoB:							
Worsham-------------	75	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.89	Too acid	0.68
		Too acid	0.16				

Table 14.—Water Management

(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	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AaB:							
Abell	90	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.68	Depth to saturated zone	0.14
				Piping	0.01	Cutbanks cave	0.10
AbB:							
Altavista	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.99	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.14	Depth to saturated zone	0.01
ApB:							
Appling	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
				Seepage	0.03		
ApC:							
Appling	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
				Seepage	0.03		
ArC:							
Appling	75	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
				Seepage	0.03		
BuA:							
Buncombe	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Depth to water	1.00
CeB:							
Cecil	95	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.05		
CeC:							
Cecil	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.05		
CgC:							
Cecil	95	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.05		
ChA:							
Chewacla	60	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.09		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CoA:							
Congaree	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.24	Depth to saturated zone	0.38
				Piping	0.10	Slow refill	0.30
						Cutbanks cave	0.10
CrA:							
Congaree	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.24	Depth to saturated zone	0.38
				Piping	0.10	Slow refill	0.30
						Cutbanks cave	0.10
Chewacla	35	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.09		
CuB:							
Cullen	95	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
CuC:							
Cullen	95	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
DAM:							
Dam	100	Not rated		Not rated		Not rated	
EnB:							
Enott	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Thin layer	0.02	Depth to water	1.00
		Depth to bedrock	0.01				
EnC:							
Enott	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Thin layer	0.02	Depth to water	1.00
		Depth to bedrock	0.01				
GeB:							
Georgeville	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.27	Depth to water	1.00
GeC:							
Georgeville	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.27	Depth to water	1.00
GgB:							
Georgeville	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.16	Depth to water	1.00
GgC:							
Georgeville	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.16	Depth to water	1.00

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
GoC:							
Goldston------------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	Depth to water	1.00
		Slope	0.01	Large stones content	0.37		
				Seepage	0.03		
GuC:							
Gullied land--------	85	Not rated		Not rated		Not rated	
HaB:							
Helena--------------	90	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	0.10
						Depth to saturated zone	0.01
HbC:							
Helena--------------	60	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	0.10
						Depth to saturated zone	0.01
Worsham-------------	20	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.05	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Seepage	0.01		
HeB:							
Herndon-------------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.75	Depth to water	1.00
HeC:							
Herndon-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.75	Depth to water	1.00
HwB:							
Hiwassee------------	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.65	Depth to water	1.00
IrB:							
Iredell-------------	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
		Depth to bedrock	0.01			Cutbanks cave	0.10
				Hard to pack	0.38		
				Thin layer	0.13		
IrC:							
Iredell-------------	75	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
		Depth to bedrock	0.01			Cutbanks cave	0.10
				Hard to pack	0.38		
				Thin layer	0.13		
LoB:							
Louisburg-----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.88	Depth to water	1.00
		Depth to bedrock	0.22	Seepage	0.04		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LoC:							
Louisburg-----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.88	Depth to water	1.00
		Depth to bedrock	0.22	Seepage	0.04		
		Slope	0.01				
MdB:							
Masada--------------	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
MtB:							
Mattaponi-----------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.46	Slow refill	0.30
						Depth to saturated zone	0.24
						Cutbanks cave	0.10
MtC:							
Mattaponi-----------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.46	Slow refill	0.30
						Depth to saturated zone	0.24
						Cutbanks cave	0.10
NaD:							
Nason---------------	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.25	Depth to water	1.00
		Slope	0.04	Thin layer	0.01		
		Depth to bedrock	0.01				
OaB:							
Orange--------------	90	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.16	Depth to saturated zone	0.99	Depth to water	1.00
				Thin layer	0.42		
				Hard to pack	0.23		
OaC:							
Orange--------------	70	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.16	Depth to saturated zone	0.99	Depth to water	1.00
				Thin layer	0.42		
				Hard to pack	0.23		
PaB:							
Pacolet-------------	95	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
				Seepage	0.04		
PaC:							
Pacolet-------------	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
				Seepage	0.04		
PaD:							
Pacolet-------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.04	Seepage	0.04		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
PcD:							
Pacolet	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.04	Seepage	0.04		
TaD:							
Tatum	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.58	Depth to water	1.00
		Slope	0.04	Thin layer	0.16		
		Depth to bedrock	0.01				
TcD:							
Tatum	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.75	Depth to water	1.00
		Slope	0.04	Thin layer	0.37		
		Depth to bedrock	0.01				
ToA:							
Toccoa	85	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.02	Depth to saturated zone	0.68
						Cutbanks cave	0.10
WdD:							
Wedowee	80	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.04				
WeA:							
Wehadkee	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.1
				Piping	0.48		
WoB:							
Worsham	75	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.05	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Seepage	0.01		

Table 15.—Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
AaB:												
Abell-----------	0-12	Fine sandy loam, sandy loam, loam, silt loam	CL-ML, CL, SM	A-1, A-4, A-6	0	0	90-100	80-100	50-100	25-90	18-33	2-12
	12-32	Clay loam, sandy clay loam	CL, SC	A-2, A-6, A-7	0	0	90-100	80-100	65-100	30-80	27-44	12-25
	32-52	Clay, clay loam, silty clay loam, sandy clay loam	SC, CH	A-2, A-7	0	0	90-100	80-100	65-100	30-95	39-54	21-32
	52-62	Loam, sandy loam, sandy clay loam	CL, SC-SM	A-2, A-6	0	0	100	100	60-95	30-75	20-37	6-19
AbB:												
Altavista-------	0-9	Fine sandy loam, sandy loam	CL-ML, CL, SC-SM, SC	A-6, A-2-4	0	0	95-100	92-100	55-85	30-55	21-40	6-16
	9-57	Clay loam, sandy clay loam	CL, SC, SC-SM	A-6, A-7	0	0	95-100	92-100	70-100	30-80	27-44	12-25
	57-62	Loam, sandy clay loam, clay loam, gravelly sandy loam	CL, SC, SC-SM	A-4, A-6, A-7	0	0	75-100	65-100	40-100	20-80	24-44	9-25

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ApB:												
Appling---------	0-7	Fine sandy loam, sandy loam, coarse sandy loam	SC-SM, SM	A-2-4, A-4	0	0	85-100	80-100	45-85	20-55	9-20	NP-2
	7-11	Sandy clay loam, sandy loam	ML, SC-SM	A-4, A-2-4	0	0	95-100	92-100	55-90	25-55	19-31	1-7
	11-38	Clay, sandy clay, clay loam	ML, SM	A-6	0	0	95-100	92-100	75-100	40-95	31-49	7-15
	38-48	Clay loam, sandy clay loam	ML, SM	A-4	0	0	95-100	92-100	70-100	30-80	20-34	2-8
	48-62	Sandy loam, sandy clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	100	100	60-90	30-55	9-31	NP-7
ApC:												
Appling---------	0-7	Fine sandy loam, sandy loam, coarse sandy loam	SC-SM, SM	A-2-4, A-4	0	0	85-100	80-100	45-85	20-55	9-20	NP-2
	7-11	Sandy clay loam, sandy loam	ML, SC-SM	A-4, A-2-4	0	0	95-100	92-100	55-90	25-55	19-31	1-7
	11-38	Clay, sandy clay, clay loam	ML, SM	A-6	0	0	95-100	92-100	75-100	40-95	31-49	7-15
	38-48	Clay loam, sandy clay loam	ML, SM	A-4	0	0	95-100	92-100	70-100	30-80	20-34	2-8
	48-62	Sandy loam, sandy clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	100	100	60-90	30-55	9-31	NP-7

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ArC:												
Appling---------	0-4	Sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	80-100	65-90	30-55	20-40	6-20
	4-11	Sandy clay loam, sandy loam	ML, SC-SM	A-4, A-2-4	0	0	95-100	92-100	55-90	25-55	19-31	1-7
	11-38	Clay, sandy clay, clay loam	ML, SM	A-6	0	0	95-100	92-100	75-100	40-95	31-49	7-15
	38-48	Clay loam, sandy clay loam	ML, SM	A-4	0	0	95-100	92-100	70-100	30-80	20-34	2-8
	48-62	Sandy loam, sandy clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	100	100	60-90	30-55	9-31	NP-7
BuA:												
Buncombe--------	0-12	Loamy fine sand, loamy sand, sand	SC-SM	A-2-4, A-4	0	0	100	100	50-85	5-45	0-26	NP-7
	12-44	Loamy fine sand, loamy sand, sand	SC-SM	A-2-4	0	0	100	100	50-85	5-45	0-25	NP-7
	44-62	Fine sandy loam, sand, loam	SC-SM, SM, SW-SM, CL	A-4, A-6, A-2-4	0	0	100	100	50-95	5-75	0-35	NP-17
CeB:												
Cecil-----------	0-7	Fine sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2-4, A-4	0	0	80-100	70-100	40-85	20-55	9-20	NP-2
	7-45	Clay, clay loam	ML	A-5, A-7	0	0	90-100	85-100	75-100	60-95	31-49	7-15
	45-55	Sandy clay loam, clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	90-100	85-100	70-100	30-80	20-34	2-8
	55-62	Sandy loam, loam, sandy clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	90-100	85-100	50-100	25-75	11-27	NP-5

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CeC:												
Cecil-----------	0-7	Fine sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2-4, A-4	0	0	80-100	70-100	40-85	20-55	9-20	NP-2
	7-45	Clay, clay loam	ML	A-5, A-7	0	0	90-100	85-100	75-100	60-95	31-49	7-15
	45-55	Sandy clay loam, clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	90-100	85-100	70-100	30-80	20-34	2-8
	55-62	Sandy loam, loam, sandy clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	90-100	85-100	50-100	25-75	11-27	NP-5
CgC:												
Cecil-----------	0-4	Clay loam, sandy clay loam, gravelly sandy clay loam	CL-ML, ML	A-4	0	0	80-100	70-100	55-100	25-80	20-31	2-7
	4-45	Clay, clay loam	ML	A-5, A-7	0	0	90-100	85-100	75-100	60-95	31-49	7-15
	45-55	Sandy clay loam, clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	90-100	85-100	70-100	30-80	20-34	2-8
	55-62	Sandy loam, loam, sandy clay loam	SC-SM, SM, ML	A-4, A-2-4	0	0	90-100	85-100	50-100	25-75	11-27	NP-5
ChA:												
Chewacla--------	0-12	Silt loam, loam, fine sandy loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	70-100	40-90	22-43	6-17
	12-44	Loam, fine sandy loam, clay loam	SC-SM, SC, CL	A-6, A-7-6	0	0	100	100	70-100	40-80	28-47	12-24
	44-62	Silty clay loam, loam, silt loam, fine sandy loam, loamy sand, silty clay	CH, CL, SC	A-4, A-6, A-7-6, A-2-4	0	0	100	100	70-100	30-95	0-60	NP-36

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CoA:												
Congaree--------	0-10	Silt loam, loam, fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	100	70-100	40-90	22-43	6-17
	10-58	Silty clay loam, loam, fine sandy loam	CL, ML, SC, SM	A-6, A-7	0	0	100	100	70-100	40-95	29-49	12-24
	58-62	Silty clay loam, loamy sand, clay	CL, ML, SC, SM, CH	A-4, A-6, A-7, A-2-4	0	0	100	100	50-100	15-95	0-70	NP-43
CrA:												
Congaree--------	0-10	Silt loam, loam, fine sandy loam	CL, CL-ML	A-6, A-4	0	0	100	100	70-100	40-90	22-43	6-17
	10-58	Silty clay loam, loam, fine sandy loam	CL, ML, SC, SM	A-6, A-7	0	0	100	100	70-100	40-95	29-49	12-24
	58-62	Silty clay loam, loamy sand, clay	CL, ML, SC, SM, CH	A-4, A-6, A-7, A-2-4	0	0	100	100	50-100	15-95	0-70	NP-43
Chewacla--------	0-12	Silt loam, loam, fine sandy loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	70-100	40-90	22-43	6-17
	12-44	Loam, fine sandy loam, clay loam	SC-SM, SC, CL	A-6, A-7-6	0	0	100	100	70-100	40-80	28-47	12-24
	44-62	Silty clay loam, loam, silt loam, fine sandy loam, loamy sand, silty clay	CH, CL, SC	A-2-4, A-4, A-6, A-7-6	0	0	100	100	70-100	30-95	0-60	NP-36
CuB:												
Cullen----------	0-8	Clay loam, loam	ML	A-4	0	0	97-100	95-100	80-100	55-80	20-34	2-8
	8-62	Clay, silty clay, clay loam, silty clay loam	MH, ML	A-7-5	0	0	97-100	95-100	85-100	65-95	31-56	7-18

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CuC:												
Cullen----------	0-8	Clay loam, loam	ML	A-4	0	0	97-100	95-100	80-100	55-80	20-34	2-8
	8-62	Clay, silty clay, clay loam, silty clay loam	MH, ML	A-7-5	0	0	97-100	95-100	85-100	65-95	31-56	7-18
DAM:												
Dam-------------	---	---	---	---	---	---	---	---	---	---	---	---
EnB:												
Enott-----------	0-12	Loam, gravelly fine sandy loam, clay loam	CL, SM	A-1, A-6, A-7	0	0	80-100	70-100	40-100	20-80	19-47	3-24
	12-36	Clay, clay loam, gravelly clay loam	CH, CL	A-7-6	0	0	80-100	70-100	65-100	50-95	45-69	25-44
	36-55	Clay loam, loam, gravelly loam	CL, SC	A-4, A-6, A-7-6	0	0	80-100	70-100	60-100	40-80	26-46	10-25
	55-62	Bedrock			---	---	---	---	---	---	---	---
EnC:												
Enott-----------	0-12	Loam, gravelly fine sandy loam, clay loam	CL, SM	A-1, A-6, A-7	0	0	80-100	70-100	40-100	20-80	19-47	3-24
	12-36	Clay, clay loam, gravelly clay loam	CH, CL	A-7-6	0	0	80-100	70-100	65-100	50-95	45-69	25-44
	36-55	Clay loam, loam, gravelly loam	CL, SC	A-4, A-6, A-7-6	0	0	80-100	70-100	60-100	40-80	26-46	10-25
	55-62	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
GeB:												
Georgeville-----	0-14	Silt loam, loam, very fine sandy loam	CL-ML	A-4	0	0	90-100	80-100	70-100	40-90	20-30	4-10
	14-49	Silty clay, clay, silty clay loam	ML, MH	A-6, A-7	0	0	100	100	90-100	75-95	38-61	14-27
	49-57	Silty clay loam, silt loam	CL, CL-ML	A-6	0	0	100	100	90-100	70-95	20-43	4-17
	57-62	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	20-30	4-10
GeC:												
Georgeville-----	0-14	Silt loam, loam, very fine sandy loam	CL-ML	A-4	0	0	90-100	80-100	70-100	40-90	20-30	4-10
	14-49	Silty clay, clay, silty clay loam	MH, ML	A-6, A-7	0	0	100	100	90-100	75-95	38-61	14-27
	49-57	Silty clay loam, silt loam	CL, CL-ML	A-6	0	0	100	100	90-100	70-95	20-43	4-17
	57-62	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	20-30	4-10
GgB:												
Georgeville-----	0-7	Silty clay loam	CL	A-4, A-6	0	0	90-100	80-100	75-100	70-95	31-38	10-14
	7-41	Silty clay, clay, silty clay loam	MH, ML	A-6, A-7	0	0	100	100	90-100	75-95	38-61	14-27
	41-52	Silty clay loam, silt loam	CL, CL-ML	A-6	0	0	100	100	90-100	70-95	20-43	4-17
	52-62	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	20-30	4-10
GgC:												
Georgeville-----	0-7	Silty clay loam	CL	A-4, A-6	0	0	90-100	80-100	75-100	70-95	31-38	10-14
	7-41	Silty clay, clay, silty clay loam	MH, ML	A-6, A-7	0	0	100	100	90-100	75-95	38-61	14-27
	41-52	Silty clay loam, silt loam	CL, CL-ML	A-6	0	0	100	100	90-100	70-95	20-43	4-17
	52-62	Silt loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	20-30	4-10

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
GoC:												
Goldston--------	0-1	Channery silt loam, very channery very fine sandy loam	CL, GM	A-4, A-7	0-2	10-30	60-85	55-85	45-85	40-80	17-41	2-19
	1-15	Very channery silt loam, extremely channery very fine sandy loam	CL, GC, GM	A-1, A-4, A-6	0-5	25-45	35-70	30-65	25-65	20-55	16-38	2-19
	15-41	Bedrock			---	---	---	---	---	---	---	---
	41-44	Bedrock			---	---	---	---	---	---	---	---
GuC:												
Gullied land----	---	---	---	---	---	---	---	---	---	---	---	---
HaB:												
Helena----------	0-12	Fine sandy loam, sandy loam	CL, SC, SC-SM, CL-ML	A-2, A-4	0	0	85-100	80-100	50-85	25-55	17-35	2-13
	12-42	Clay, sandy clay, clay loam	CH	A-7	0	0	95-100	90-100	75-100	40-95	45-69	25-44
	42-62	Loam, sandy loam, sandy clay loam	SC, SC-SM, CL	A-6, A-7-6, A-2-4, A-4	0	0	100	100	60-95	30-75	20-44	6-25
HbC:												
Helena----------	0-12	Fine sandy loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4	0	0	85-100	80-100	50-85	25-55	17-35	2-13
	12-42	Clay, sandy clay, clay loam	CH	A-7	0	0	95-100	90-100	75-100	40-95	45-69	25-44
	42-62	Loam, sandy loam, sandy clay loam	SC, SC-SM, CL	A-6, A-7-6, A-2-4, A-4	0	0	100	100	60-95	30-75	20-44	6-25

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Worsham---------	0-12	Fine sandy loam, sandy loam, loam, silt loam	CL, SC	A-2, A-4	0	0	90-100	85-100	50-100	25-90	22-35	6-13
	12-49	Clay, sandy clay, sandy clay loam, clay loam	CH, CL, SC	A-6, A-7	0	0	90-100	85-100	70-100	30-95	39-63	21-40
	49-62	Sandy loam, sandy clay loam, clay loam	CL, SC	A-2-4, A-4, A-6, A-7	0	0	90-100	85-100	50-100	25-80	22-46	6-25
HeB:												
Herndon---------	0-11	Silt loam, very fine sandy loam	CL, CL-ML, ML	A-4	0	0	85-100	80-100	70-100	40-90	12-31	NP-10
	11-41	Silty clay, silty clay loam, clay	CL, MH, ML, CH	A-7	0	0	95-100	92-100	80-100	70-95	38-61	14-27
	41-62	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	85-100	60-90	16-30	2-10
HeC:												
Herndon---------	0-11	Silt loam, very fine sandy loam	CL, CL-ML, ML	A-4	0	0	85-100	80-100	70-100	40-90	12-31	NP-10
	11-41	Silty clay, silty clay loam, clay	CL, MH, ML, CH	A-7	0	0	95-100	92-100	80-100	70-95	38-61	14-27
	41-62	Silt loam, loam	CL-ML, ML	A-4	0	0	100	100	85-100	60-90	16-30	2-10
HwB:												
Hiwassee--------	0-12	Clay loam	CL	A-6, A-7-6	0	0	95-100	85-100	70-100	30-80	30-47	13-24
	12-48	Clay, silty clay	CH, CL	A-7-6	0	0	95-100	85-100	75-100	65-95	42-74	24-51
	48-67	Clay loam, silty clay loam	CL	A-7-6, A-6	0	0	95-100	85-100	75-100	60-95	37-48	21-28

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
IrB:												
Iredell---------	0-9	Loam, fine sandy loam	CL, SC	A-4, A-6	0	0	85-100	80-100	55-95	30-75	26-41	9-19
	9-40	Clay, clay loam	CH	A-7-6	0	0	85-100	80-100	70-100	55-95	47-79	25-46
	40-49	Sandy loam, sandy clay loam	SC-SM, SC, CL	A-4, A-6, A-7-6, A-2-4	0	0	90-100	85-100	50-90	25-55	20-44	6-25
	49-62	Bedrock			---	---	---	---	---	---	---	---
IrC:												
Iredell---------	0-9	Loam, fine sandy loam	CL, SC	A-4, A-6	0	0	85-100	80-100	55-95	30-75	26-41	9-19
	9-40	Clay, clay loam	CH	A-7-6	0	0	85-100	80-100	70-100	55-95	47-79	25-46
	40-49	Sandy loam, sandy clay loam	SC-SM, SC, CL	A-4, A-6, A-7-6, A-2-4	0	0	90-100	85-100	50-90	25-55	20-44	6-25
	49-62	Bedrock			---	---	---	---	---	---	---	---
LoB:												
Louisburg-------	0-15	Sandy loam, fine sandy loam, gravelly sandy loam	SM, SC-SM, SC	A-1, A-4	0	0-20	65-100	65-100	45-85	25-45	17-31	2-10
	15-29	Sandy loam, sandy clay loam, gravelly sandy loam	SC, SM	A-1, A-4, A-6	0	0-20	65-100	65-100	45-85	20-50	18-36	3-17
	29-46	Bedrock			---	---	---	---	---	---	---	---
	46-56	Bedrock			---	---	---	---	---	---	---	---
LoC:												
Louisburg-------	0-15	Sandy loam, fine sandy loam, gravelly sandy loam	SM, SC-SM, SC	A-1, A-4	0	0-20	65-100	65-100	45-85	25-45	17-31	2-10
	15-29	Sandy loam, sandy clay loam, gravelly sandy loam	SC, SM	A-1, A-4, A-6	0	0-20	65-100	65-100	45-85	20-50	18-36	3-17
	29-46	Bedrock			---	---	---	---	---	---	---	---
	46-56	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
MdB:												
Masada----------	0-8	Fine sandy loam, sandy loam	CL, ML, SC, SM	A-4, A-6	0	0	90-100	80-100	50-85	25-55	22-37	6-13
	8-41	Clay, clay loam	CH, CL	A-7	0	0	95-100	85-100	75-100	60-95	43-63	25-40
	41-62	Clay loam, loam, sandy clay loam	CL, SC-SM	A-6, A-7, A-4	0	0	95-100	85-100	70-100	30-80	26-50	10-29
MtB:												
Mattaponi-------	0-16	Fine sandy loam, sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-85	25-55	17-33	2-12
	16-58	Clay, clay loam, sandy clay	CH, CL, SC	A-7	0	0	95-100	92-100	75-100	40-95	43-67	25-44
	58-62	Clay loam, sandy clay loam, sandy loam	SC-SM, CL	A-2-4, A-6, A-7-6	0	0	100	100	60-100	30-80	20-48	6-28
MtC:												
Mattaponi-------	0-16	Fine sandy loam, sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-85	25-55	17-33	2-12
	16-58	Clay, clay loam, sandy clay	CH, CL, SC	A-7	0	0	95-100	92-100	75-100	40-95	43-67	25-44
	58-62	Clay loam, sandy clay loam, sandy loam	SC-SM, CL	A-2-4, A-6, A-7-6	0	0	100	100	60-100	30-80	20-48	6-28
NaD:												
Nason-----------	0-13	Silt loam, loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	75-100	65-100	50-85	22-43	6-18
	13-25	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	90-100	75-100	65-100	60-100	43-67	25-44
	25-58	Channery silt loam, channery silty clay loam	CL, CL-ML, GC-GM	A-4, A-6	0-2	0-25	70-85	70-85	60-85	50-85	20-48	6-28
	58-62	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
OaB:												
Orange----------	0-15	Silt loam, loam, fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0	0	90-100	80-100	70-100	55-90	22-43	6-18
	15-36	Clay, silty clay	CH, CL	A-7	0	0	90-100	80-100	70-100	60-90	49-69	29-44
	36-41	Clay loam, loam, sandy clay loam, sandy loam, clay	CH, CL	A-7	0	0	90-100	80-100	50-100	35-85	20-57	6-36
	41-48	Bedrock			---	---	---	---	---	---	---	---
	48-58	Bedrock			---	---	---	---	---	---	---	---
OaC:												
Orange----------	0-15	Silt loam, loam, fine sandy loam	CL, CL-ML	A-4, A-6, A-7	0	0	90-100	80-100	70-100	55-90	22-43	6-18
	15-36	Clay, silty clay	CH, CL	A-7	0	0	90-100	80-100	70-100	60-90	49-69	29-44
	36-41	Clay, sandy loam, clay loam, loam, sandy clay loam	CH, CL	A-7	0	0	90-100	80-100	50-100	35-85	20-57	6-36
	41-48	Bedrock			---	---	---	---	---	---	---	---
	48-58	Bedrock			---	---	---	---	---	---	---	---
PaB:												
Pacolet---------	0-9	Fine sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2-4, A-4	0	0	80-100	70-100	40-85	20-55	11-20	NP-2
	9-24	Clay, clay loam	CL, ML	A-6, A-7	0	0	90-100	85-100	75-100	60-95	31-49	7-15
	24-36	Clay loam, sandy clay loam	ML, CL-ML, SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-100	30-80	16-34	NP-8
	36-62	Sandy loam, loam, sandy clay loam	SC-SM, SM	A-2-4, A-4	0	0	90-100	85-100	50-95	25-75	13-24	NP-4

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
PaC:												
Pacolet---------	0-9	Fine sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2-4, A-4	0	0	80-100	70-100	40-85	20-55	11-20	NP-2
	9-24	Clay, clay loam	CL, ML	A-6, A-7	0	0	90-100	85-100	75-100	60-95	31-49	7-15
	24-36	Clay loam, sandy clay loam	ML, CL-ML, SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-100	30-80	16-34	NP-8
	36-62	Sandy loam, loam, sandy clay loam	SC-SM, SM	A-2-4, A-4	0	0	90-100	85-100	50-95	25-75	13-24	NP-4
PaD:												
Pacolet---------	0-9	Fine sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2-4, A-4	0	0	80-100	70-100	40-85	20-55	11-20	NP-2
	9-24	Clay, clay loam	CL, ML	A-6, A-7	0	0	90-100	85-100	75-100	60-95	31-49	7-15
	24-36	Clay loam, sandy clay loam	ML, CL-ML, SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-100	30-80	16-34	NP-8
	36-62	Sandy loam, loam, sandy clay loam	SC-SM, SM	A-2-4, A-4	0	0	90-100	85-100	50-95	25-75	13-24	NP-4
PcD:												
Pacolet---------	0-3	Clay loam, sandy clay loam, gravelly sandy clay loam	SC-SM, CL-ML	A-4	0	0	80-100	70-100	55-100	25-80	20-31	2-7
	3-22	Clay, clay loam	CL, ML	A-6, A-7	0	0	90-100	85-100	75-100	60-95	31-49	7-15
	22-30	Clay loam, sandy clay loam	ML, CL-ML, SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-100	30-80	16-34	NP-8
	30-62	Sandy loam, loam, sandy clay loam	SC-SM, SM	A-2-4, A-4	0	0	90-100	85-100	50-95	25-75	13-24	NP-4

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
TaD:												
Tatum-----------	0-4	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	85-100	80-100	70-100	40-90	23-39	7-17
	4-41	Silty clay, silty clay loam, clay	CH, CL	A-7	0	0	85-100	80-100	70-100	60-95	43-67	25-44
	41-48	Silt loam, silty clay loam	CL	A-6	0	0	85-100	80-100	70-100	55-95	26-50	10-29
	48-62	Bedrock			---	---	---	---	---	---	---	---
TcD:												
Tatum-----------	0-3	Silty clay loam	CL	A-6, A-7	0	0	85-100	80-100	75-100	70-95	35-52	18-28
	3-38	Silty clay, silty clay loam, clay	CH, CL	A-7	0	0	85-100	80-100	70-100	60-95	43-67	25-44
	38-42	Silt loam, silty clay loam	CL	A-6	0	0	85-100	80-100	70-100	55-95	26-50	10-29
	42-62	Bedrock			---	---	---	---	---	---	---	---
ToA:												
Toccoa----------	0-12	Fine sandy loam, sandy loam, loam, loamy sand	SM, SC-SM	A-4, A-2-4, A-1-b	0	0	100	100	50-95	15-75	0-31	NP-10
	12-62	Fine sandy loam, sandy loam, loam	SC-SM, SM	A-2-4, A-4	0	0	100	100	60-95	30-75	16-36	2-17

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
WdD:												
Wedowee---------	0-8	Fine sandy loam, sandy loam, coarse sandy loam, sandy clay loam	SC-SM, SM	A-2-4, A-4	0	0	95-100	80-100	40-90	20-55	9-24	NP-4
	8-14	Sandy clay loam, loam	ML, SC-SM, SM	A-4, A-2-4	0	0	85-100	80-100	65-95	30-75	16-27	NP-5
	14-30	Clay, sandy clay, clay loam	ML, SC	A-6, A-4	0	0	97-100	92-100	75-100	40-95	31-45	7-13
	30-62	Sandy loam, sandy clay loam	ML, CL-ML, SM, SC-SM	A-2-4, A-4	0	0	100	100	60-90	30-55	13-27	NP-5
WeA:												
Wehadkee--------	0-8	Silt loam, loam, silty clay loam	CH, CL, MH, ML	A-6, A-7	0	0	100	100	85-100	60-95	21-58	3-28
	8-54	Silt loam, silty clay loam, clay loam, loam	CL	A-6, A-7	0	0	100	100	85-100	60-95	28-47	12-24
	54-62	Silt loam, loam, sandy loam	SC, SC-SM, CL	A-4, A-6, A-2-4	0	0	100	100	60-100	30-90	16-36	2-17
WoB:												
Worsham---------	0-12	Fine sandy loam, sandy loam, loam, silt loam	CL, SC	A-2, A-4	0	0	90-100	85-100	50-100	25-90	22-35	6-13
	12-49	Clay, sandy clay, sandy clay loam, clay loam	CH, CL, SC	A-6, A-7	0	0	90-100	85-100	70-100	30-95	39-63	21-40
	49-62	Sandy loam, sandy clay loam, clay loam	CL, SC	A-2-4, A-4, A-6, A-7	0	0	90-100	85-100	50-100	25-80	22-46	6-25

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	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
AaB:														
Abell	0-12	15-80	5-70	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	1.0-2.0	.28	.28	4	3	86
	12-32	25-75	5-45	18-35	1.35-1.55	4.00-14.00	0.13-0.19	0.0-2.9	0.0-0.5	.28	.28			
	32-52	10-75	5-65	30-45	1.35-1.55	4.00-14.00	0.11-0.17	3.0-5.9	0.0-0.3	.28	.28			
	52-62	25-80	5-45	10-27	1.45-1.60	4.00-42.00	0.08-0.18	0.0-2.9	0.0-0.2	.28	.28			
AbB:														
Altavista	0-9	50-80	5-35	10-24	1.30-1.50	14.00-42.00	0.12-0.20	0.0-2.9	0.5-3.0	.28	.28	5	3	86
	9-57	35-75	5-30	18-35	1.30-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-0.5	.24	.24			
	57-62	35-75	5-40	15-35	1.30-1.50	4.00-42.00	0.10-0.20	0.0-2.9	0.0-0.2	.24	.24			
ApB:														
Appling	0-7	50-80	2-45	5-20	1.40-1.65	14.00-42.00	0.10-0.15	0.0-2.9	0.5-2.0	.28	.28	4	3	86
	7-11	50-80	5-35	18-35	1.25-1.45	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.15	.15			
	11-38	15-55	5-30	35-60	1.25-1.45	4.00-14.00	0.15-0.17	0.0-2.9	0.0-0.2	.20	.20			
	38-48	25-70	5-45	20-40	1.25-1.45	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.2	.15	.15			
	48-62	50-80	5-35	5-35	1.30-1.60	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.2	.24	.24			
ApC:														
Appling	0-7	50-80	2-45	5-20	1.40-1.65	14.00-42.00	0.10-0.15	0.0-2.9	0.5-2.0	.28	.28	4	3	86
	7-11	50-80	5-35	18-35	1.25-1.45	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.15	.15			
	11-38	15-55	5-30	35-60	1.25-1.45	4.00-14.00	0.15-0.17	0.0-2.9	0.0-0.2	.20	.20			
	38-48	25-70	5-45	20-40	1.25-1.45	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.2	.15	.15			
	48-62	50-80	5-35	5-35	1.30-1.60	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.2	.24	.24			
ArC:														
Appling	0-4	50-75	2-30	20-35	1.30-1.45	4.00-14.00	0.12-0.15	0.0-2.9	0.5-1.0	.15	.15	3	5	56
	4-11	50-80	5-35	18-35	1.25-1.45	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.15	.15			
	11-38	15-55	5-30	35-60	1.25-1.45	4.00-14.00	0.15-0.17	0.0-2.9	0.0-0.2	.20	.20			
	38-48	25-70	5-45	20-40	1.25-1.45	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.2	.15	.15			
	48-62	50-80	5-35	5-35	1.30-1.60	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.2	.24	.24			
BuA:														
Buncombe	0-12	75-99	1-20	3-12	1.60-1.75	42.00-141.00	0.06-0.10	0.0-2.9	0.5-1.0	.15	.15	5	2	134
	12-44	75-99	1-20	3-12	1.60-1.75	42.00-141.00	0.03-0.07	0.0-2.9	0.0-0.5	.24	.24			
	44-62	30-99	1-45	1-25	1.30-1.60	4.00-141.00	0.02-0.16	0.0-2.9	0.0-0.2	.24	.24			
CeB:														
Cecil	0-7	55-80	5-40	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.32	4	3	86
	7-45	15-40	10-30	35-60	1.30-1.50	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.2	.20	.20			
	45-55	25-75	2-35	20-40	1.30-1.60	4.00-14.00	0.05-0.14	0.0-2.9	0.0-0.2	.15	.15			
	55-62	30-75	2-40	8-30	1.30-1.60	4.00-42.00	0.05-0.16	0.0-2.9	0.0-0.2	.24	.24			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
CeC:														
Cecil	0-7	55-80	5-40	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.32	4	3	86
	7-45	15-40	10-30	35-60	1.30-1.50	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.2	.20	.20			
	45-55	25-75	2-35	20-40	1.30-1.60	4.00-14.00	0.05-0.14	0.0-2.9	0.0-0.2	.15	.15			
	55-62	30-75	2-40	8-30	1.30-1.60	4.00-42.00	0.05-0.16	0.0-2.9	0.0-0.2	.24	.24			
CgC:														
Cecil	0-4	20-70	5-45	20-35	1.30-1.50	4.00-14.00	0.10-0.15	0.0-2.9	0.2-0.8	.24	.24	3	5	56
	4-45	15-40	10-30	35-60	1.30-1.50	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.2	.20	.20			
	45-55	25-75	2-35	20-40	1.30-1.60	4.00-14.00	0.05-0.14	0.0-2.9	0.0-0.2	.15	.15			
	55-62	30-75	2-40	8-30	1.30-1.60	4.00-42.00	0.05-0.16	0.0-2.9	0.0-0.2	.24	.24			
ChA:														
Chewacla	0-12	10-70	5-80	10-25	1.30-1.60	4.00-14.00	0.15-0.24	0.0-2.9	1.0-4.0	.37	.37	5	5	56
	12-44	25-80	5-45	18-35	1.30-1.60	4.00-14.00	0.12-0.20	0.0-2.9	0.5-2.0	.28	.28			
	44-62	5-98	1-80	2-50	1.30-1.50	4.00-141.00	0.04-0.24	0.0-2.9	0.5-2.0	.32	.32			
CoA:														
Congaree	0-10	10-75	10-80	10-25	1.20-1.40	4.00-14.00	0.12-0.24	0.0-2.9	1.0-4.0	.37	.37	5	6	48
	10-58	5-75	5-80	18-35	1.20-1.50	4.00-14.00	0.12-0.20	0.0-2.9	1.0-3.0	.32	.32			
	58-62	5-85	2-80	2-60	1.20-1.50	4.00-141.00	0.04-0.20	0.0-2.9	1.0-3.0	.32	.32			
CrA:														
Congaree	0-10	10-75	10-80	10-25	1.20-1.40	4.00-14.00	0.12-0.24	0.0-2.9	1.0-4.0	.37	.37	5	6	48
	10-58	5-75	5-80	18-35	1.20-1.50	4.00-14.00	0.12-0.20	0.0-2.9	1.0-3.0	.32	.32			
	58-62	5-85	2-80	2-60	1.20-1.50	4.00-141.00	0.04-0.20	0.0-2.9	1.0-3.0	.32	.32			
Chewacla	0-12	10-70	5-80	10-25	1.30-1.60	4.00-14.00	0.15-0.24	0.0-2.9	1.0-4.0	.37	.37	5	5	56
	12-44	25-80	5-45	18-35	1.30-1.60	4.00-14.00	0.12-0.20	0.0-2.9	0.5-2.0	.28	.28			
	44-62	5-98	1-80	2-50	1.30-1.50	4.00-141.00	0.04-0.24	0.0-2.9	0.5-2.0	.32	.32			
CuB:														
Cullen	0-8	20-50	20-45	20-40	1.20-1.50	4.00-14.00	0.12-0.17	3.0-5.9	0.5-2.0	.24	.24	3	6	48
	8-62	5-40	5-65	35-70	1.30-1.60	4.00-14.00	0.10-0.14	3.0-5.9	0.0-0.5	.20	.20			
CuC:														
Cullen	0-8	20-50	20-45	20-40	1.20-1.50	4.00-14.00	0.12-0.17	3.0-5.9	0.5-2.0	.24	.24	3	6	48
	8-62	5-40	5-65	35-70	1.30-1.60	4.00-14.00	0.10-0.14	3.0-5.9	0.0-0.5	.20	.20			
DAM:														
Dam	---	---	---	---	---	---	---	---	---	---	---	--	---	---

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
EnB:														
Enott----------------	0-12	35-80	5-45	7-35	1.45-1.65	4.00-14.00	0.12-0.18	0.0-2.9	0.5-2.0	.24	.28	4	6	48
	12-36	20-45	5-45	35-60	1.30-1.50	0.42-1.40	0.12-0.15	6.0-8.9	0.0-0.5	.20	.20			
	36-55	25-50	25-45	15-35	1.20-1.40	1.40-4.00	0.12-0.16	3.0-5.9	0.0-0.2	.20	.24			
	55-62	---	---	---	---	0.01-0.42	---	---	---	---	---			
EnC:														
Enott----------------	0-12	35-80	5-45	7-35	1.45-1.65	4.00-14.00	0.12-0.18	0.0-2.9	0.5-2.0	.24	.28	4	6	48
	12-36	20-45	5-45	35-60	1.30-1.50	0.42-1.40	0.12-0.15	6.0-8.9	0.0-0.5	.20	.20			
	36-55	25-50	25-45	15-35	1.20-1.40	1.40-4.00	0.12-0.16	3.0-5.9	0.0-0.2	.20	.24			
	55-62	---	---	---	---	0.01-0.42	---	---	---	---	---			
GeB:														
Georgeville----------	0-14	10-60	40-75	15-25	1.20-1.40	4.00-14.00	0.13-0.22	0.0-2.9	0.0-0.5	.43	.43	4	6	48
	14-49	2-20	30-65	35-60	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.17	.17			
	49-57	5-30	45-75	15-40	1.20-1.40	4.00-14.00	0.13-0.20	0.0-2.9	0.0-0.2	.32	.32			
	57-62	10-45	35-75	15-25	1.20-1.40	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.2	.43	.43			
GeC:														
Georgeville----------	0-14	10-60	40-75	15-25	1.20-1.40	4.00-14.00	0.13-0.22	0.0-2.9	0.0-0.5	.43	.43	4	6	48
	14-49	2-20	30-65	35-60	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.17	.17			
	49-57	5-30	45-75	15-40	1.20-1.40	4.00-14.00	0.13-0.20	0.0-2.9	0.0-0.2	.32	.32			
	57-62	10-45	35-75	15-25	1.20-1.40	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.2	.43	.43			
GgB:														
Georgeville----------	0-7	3-20	45-70	27-35	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.2	.37	.37	4	6	48
	7-41	2-20	30-65	35-60	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.2	.17	.17			
	41-52	5-30	45-75	15-40	1.20-1.40	4.00-14.00	0.13-0.20	0.0-2.9	0.0-0.2	.32	.32			
	52-62	10-45	35-75	15-25	1.20-1.40	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.2	.43	.43			
GgC:														
Georgeville----------	0-7	3-20	45-70	27-35	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.2	.37	.37	4	6	48
	7-41	2-20	30-65	35-60	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.2	.17	.17			
	41-52	5-30	45-75	15-40	1.20-1.40	4.00-14.00	0.13-0.20	0.0-2.9	0.0-0.2	.32	.32			
	52-62	10-45	35-75	15-25	1.20-1.40	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.2	.43	.43			
GoC:														
Goldston-------------	0-1	5-75	15-80	5-27	1.40-1.60	14.00-42.00	0.10-0.16	0.0-2.9	0.5-2.0	.24	.43	1	4	56
	1-15	5-75	15-80	5-27	1.40-1.60	14.00-42.00	0.06-0.12	0.0-2.9	0.0-0.5	.10	.43			
	15-41	---	---	---	---	0.01-0.42	---	---	---	---	---			
	41-44	---	---	---	---	0.01-0.20	---	---	---	---	---			
GuC:														
Gullied land---------	---	---	---	---	---	---	---	---	---	---	---	3	5	56

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
HaB:														
Helena---------------	0-12	50-80	5-45	5-20	1.58-1.62	14.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0	.24	.28	4	3	86
	12-42	15-55	5-45	35-60	1.44-1.55	0.42-1.40	0.11-0.15	6.0-8.9	0.0-0.5	.20	.20			
	42-62	30-80	5-50	10-35	1.30-1.60	4.00-42.00	0.10-0.16	0.0-2.9	0.0-0.2	.32	.32			
HbC:														
Helena---------------	0-12	50-80	5-45	5-20	1.58-1.62	14.00-42.00	0.10-0.12	0.0-2.9	0.5-2.0	.24	.28	4	3	86
	12-42	15-55	5-45	35-60	1.44-1.55	0.42-1.40	0.11-0.15	6.0-8.9	0.0-0.5	.20	.20			
	42-62	30-80	5-50	10-35	1.30-1.60	4.00-42.00	0.10-0.16	0.0-2.9	0.0-0.2	.32	.32			
Worsham--------------	0-12	15-80	5-75	10-20	1.25-1.55	14.00-42.00	0.10-0.22	0.0-2.9	1.0-2.0	.28	.28	4	3	86
	12-49	20-70	5-45	30-55	1.35-1.65	0.01-0.42	0.10-0.16	3.0-5.9	0.0-0.5	.17	.20			
	49-62	25-80	5-45	10-35	1.20-1.50	1.40-4.00	0.08-0.19	3.0-5.9	0.0-0.5	.20	.24			
HeB:														
Herndon--------------	0-11	5-70	15-80	5-27	1.20-1.40	4.00-14.00	0.14-0.20	0.0-2.9	0.5-1.0	.43	.43	5	4	86
	11-41	2-40	30-65	35-60	1.30-1.60	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.17	.17			
	41-62	5-50	35-80	10-25	1.20-1.40	4.00-14.00	0.10-0.22	0.0-2.9	0.0-0.2	.43	.43			
HeC:														
Herndon--------------	0-11	5-70	15-80	5-27	1.20-1.40	4.00-14.00	0.14-0.20	0.0-2.9	0.5-1.0	.43	.43	5	4	86
	11-41	2-40	30-65	35-60	1.30-1.60	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.17	.17			
	41-62	5-50	35-80	10-25	1.20-1.40	4.00-14.00	0.10-0.22	0.0-2.9	0.0-0.2	.43	.43			
HwB:														
Hiwassee-------------	0-12	25-45	15-45	27-35	1.35-1.55	4.00-14.00	0.12-0.20	0.0-2.9	0.5-2.0	.17	.24	5	6	48
	12-48	5-45	15-55	35-70	1.30-1.45	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.15	.20			
	48-67	5-45	15-65	30-40	1.30-1.45	4.00-14.00	0.12-0.20	0.0-2.9	0.0-0.2	.24	.24			
IrB:														
Iredell--------------	0-9	25-80	5-50	15-27	1.20-1.40	4.00-14.00	0.14-0.17	0.0-2.9	0.5-2.0	.24	.32	3	3	86
	9-40	15-40	10-45	35-60	1.20-1.45	0.42-1.40	0.16-0.22	9.0-25.0	0.0-0.5	.20	.20			
	40-49	50-80	5-40	10-35	1.30-1.60	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.2	.32	.32			
	49-62	---	---	---	---	0.01-0.42	---	---	---	---	---			
IrC:														
Iredell--------------	0-9	25-80	5-50	15-27	1.20-1.40	4.00-14.00	0.14-0.17	0.0-2.9	0.5-2.0	.24	.32	3	3	86
	9-40	15-40	10-45	35-60	1.20-1.45	0.42-1.40	0.16-0.22	9.0-25.0	0.0-0.5	.20	.20			
	40-49	50-80	5-40	10-35	1.30-1.60	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.2	.32	.32			
	49-62	---	---	---	---	0.01-0.42	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
LoB:														
Louisburg------------	0-15	50-80	5-45	5-15	1.25-1.45	42.00-141.00	0.05-0.13	0.0-2.9	0.5-1.0	.20	.24	3	3	86
	15-29	50-80	5-45	5-25	1.30-1.50	42.00-141.00	0.05-0.12	0.0-2.9	0.0-0.5	.20	.24			
	29-46	---	---	---	---	0.01-0.42	---	---	---	---	---			
	46-56	---	---	---	---	0.01-0.10	---	---	---	---	---			
LoC:														
Louisburg------------	0-15	50-80	5-45	5-15	1.25-1.45	42.00-141.00	0.05-0.13	0.0-2.9	0.5-1.0	.20	.24	3	3	86
	15-29	50-80	5-45	5-25	1.30-1.50	42.00-141.00	0.05-0.12	0.0-2.9	0.0-0.5	.20	.24			
	29-46	---	---	---	---	0.01-0.42	---	---	---	---	---			
	46-56	---	---	---	---	0.01-0.10	---	---	---	---	---			
MdB:														
Masada---------------	0-8	50-80	5-40	10-20	1.20-1.50	14.00-42.00	0.10-0.17	0.0-2.9	1.0-3.0	.15	.20	4	3	86
	8-41	15-40	10-45	35-55	1.30-1.60	4.00-14.00	0.10-0.17	3.0-5.9	0.0-0.5	.15	.20			
	41-62	25-70	10-45	15-40	1.30-1.60	4.00-14.00	0.10-0.17	3.0-5.9	0.0-0.2	.32	.32			
MtB:														
Mattaponi------------	0-16	50-80	5-45	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.5-2.0	.20	.28	5	3	86
	16-58	10-55	5-45	35-60	1.40-1.65	1.40-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.17	.20			
	58-62	20-80	5-45	10-40	1.25-1.60	4.00-14.00	0.10-0.17	0.0-2.9	0.0-0.2	.24	.24			
MtC:														
Mattaponi------------	0-16	50-80	5-45	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.5-2.0	.20	.28	5	3	86
	16-58	10-55	5-45	35-60	1.40-1.65	1.40-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.17	.20			
	58-62	20-80	5-45	10-40	1.25-1.60	4.00-14.00	0.10-0.17	0.0-2.9	0.0-0.2	.24	.24			
NaD:														
Nason----------------	0-13	15-50	30-75	10-27	1.25-1.55	4.00-14.00	0.15-0.22	0.0-2.9	1.0-3.0	.32	.43	4	5	56
	13-25	2-15	40-75	35-60	1.30-1.60	4.00-14.00	0.12-0.19	3.0-5.9	0.0-0.5	.15	.17			
	25-58	5-45	45-75	10-40	1.25-1.55	4.00-14.00	0.15-0.22	0.0-2.9	0.0-0.2	.20	.43			
	58-62	---	---	---	---	0.01-0.42	---	---	---	---	---			
OaB:														
Orange---------------	0-15	10-75	10-75	10-27	1.25-1.55	4.00-14.00	0.14-0.22	0.0-2.9	1.0-3.0	.43	.43	3	5	56
	15-36	5-45	10-55	40-60	1.35-1.65	0.01-0.42	0.10-0.14	6.0-8.9	0.0-0.5	.20	.20			
	36-41	10-65	10-35	10-50	1.35-1.65	0.01-1.40	0.10-0.19	0.0-2.9	0.0-0.5	.20	.20			
	41-48	---	---	---	---	0.01-0.42	---	---	---	---	---			
	48-58	---	---	---	---	0.01-0.20	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
OaC:														
Orange	0-15	10-75	10-75	10-27	1.25-1.55	4.00-14.00	0.14-0.22	0.0-2.9	1.0-3.0	.43	.43	3	5	56
	15-36	5-45	10-55	40-60	1.35-1.65	0.01-0.42	0.10-0.14	6.0-8.9	0.0-0.5	.20	.20			
	36-41	10-65	10-35	10-50	1.35-1.65	0.01-1.40	0.10-0.19	0.0-2.9	0.0-0.5	.20	.20			
	41-48	---	---	---	---	0.01-0.42	---	---	---	---	---			
	48-58	---	---	---	---	0.01-0.20	---	---	---	---	---			
PaB:														
Pacolet	0-9	50-80	5-40	8-20	1.00-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.20	.20	3	3	86
	9-24	25-45	5-30	35-60	1.30-1.50	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.20	.20			
	24-36	25-70	5-45	15-40	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.24	.24			
	36-62	30-80	5-40	10-25	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.28	.28			
PaC:														
Pacolet	0-9	50-80	5-40	8-20	1.00-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.20	.20	3	3	86
	9-24	25-45	5-30	35-60	1.30-1.50	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.20	.20			
	24-36	25-70	5-45	15-40	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.24	.24			
	36-62	30-80	5-40	10-25	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.28	.28			
PaD:														
Pacolet	0-9	50-80	5-40	8-20	1.00-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.20	.20	3	3	86
	9-24	25-45	5-30	35-60	1.30-1.50	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.20	.20			
	24-36	25-70	5-45	15-40	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.24	.24			
	36-62	30-80	5-40	10-25	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.28	.28			
PcD:														
Pacolet	0-3	25-70	5-50	20-35	1.30-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.5-1.0	.24	.24	2	5	56
	3-22	25-45	5-30	35-60	1.30-1.50	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.20	.20			
	22-30	25-70	5-45	15-40	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.24	.24			
	30-62	30-80	5-40	10-25	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.28	.28			
TaD:														
Tatum	0-4	10-65	25-75	12-25	1.10-1.40	4.00-14.00	0.16-0.22	0.0-2.9	0.5-2.0	.32	.43	4	5	56
	4-41	2-30	30-65	35-60	1.40-1.60	4.00-14.00	0.10-0.19	3.0-5.9	0.0-0.5	.15	.17			
	41-48	5-35	45-80	15-40	1.40-1.60	4.00-14.00	0.10-0.20	3.0-5.9	0.0-0.5	.43	.43			
	48-62	---	---	---	---	0.01-0.42	---	---	---	---	---			
TcD:														
Tatum	0-3	---	---	27-40	1.30-1.50	4.00-14.00	0.14-0.20	0.0-2.9	0.0-2.0	.28	.37	3	6	48
	3-38	2-30	30-65	35-60	1.40-1.60	4.00-14.00	0.10-0.19	3.0-5.9	0.0-0.5	.15	.17			
	38-42	5-35	45-80	15-40	1.40-1.60	4.00-14.00	0.10-0.20	3.0-5.9	0.0-0.5	.43	.43			
	42-62	---	---	---	---	0.01-0.42	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
ToA:														
Toccoa---------------	0-12	30-88	2-45	2-15	1.40-1.55	14.00-42.00	0.03-0.13	0.0-2.9	1.0-2.0	.28	.28	4	3	86
	12-62	30-80	5-45	5-25	1.40-1.50	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	.32	.32			
WdD:														
Wedowee--------------	0-8	55-80	5-35	5-25	1.25-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.5-3.0	.24	.28	3	3	86
	8-14	35-75	5-40	14-30	1.30-1.55	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.10	.15			
	14-30	20-60	5-30	35-55	1.30-1.50	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.2	.20	.20			
	30-62	50-80	5-40	10-30	1.20-1.50	4.00-14.00	0.08-0.16	0.0-2.9	0.0-0.2	.28	.28			
WeA:														
Wehadkee-------------	0-8	5-50	30-80	6-40	1.35-1.50	4.00-14.00	0.16-0.24	0.0-2.9	2.0-5.0	.37	.37	5	6	48
	8-54	5-50	30-80	18-35	1.30-1.50	4.00-14.00	0.16-0.20	0.0-2.9	0.2-2.0	.43	.43			
	54-62	5-75	5-80	5-25	1.30-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.43	.43			
WoB:														
Worsham--------------	0-12	15-80	5-75	10-20	1.25-1.55	14.00-42.00	0.10-0.22	0.0-2.9	1.0-2.0	.28	.28	4	3	86
	12-49	20-70	5-45	30-55	1.35-1.65	0.01-0.42	0.10-0.16	3.0-5.9	0.0-0.5	.17	.20			
	49-62	25-80	5-45	10-35	1.20-1.50	1.40-4.00	0.08-0.19	3.0-5.9	0.0-0.5	.20	.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
	Inches	meq/100 g	meq/100 g	pH
AaB:				
Abell	0-12	4.0-11	3.0-8.1	4.5-6.0
	12-32	6.3-13	4.7-10	4.5-6.0
	32-52	10-17	7.9-13	4.5-6.0
	52-62	3.5-11	2.6-7.9	4.5-6.0
AbB:				
Altavista	0-9	3.6-13	2.7-9.6	4.5-6.5
	9-57	4.5-9.9	3.4-7.4	4.5-6.0
	57-62	3.8-9.2	2.8-6.9	4.5-6.0
ApB:				
Appling	0-7	1.6-6.5	1.2-4.9	4.5-6.0
	7-11	1.8-4.6	1.4-3.5	4.5-5.5
	11-38	3.5-6.5	2.6-4.8	4.5-5.5
	38-48	2.0-4.5	1.5-3.3	4.5-5.5
	48-62	0.5-4.0	0.4-3.0	4.5-5.5
ApC:				
Appling	0-7	1.6-6.5	1.2-4.9	4.5-6.0
	7-11	1.8-4.6	1.4-3.5	4.5-5.5
	11-38	3.5-6.5	2.6-4.8	4.5-5.5
	38-48	2.0-4.5	1.5-3.3	4.5-5.5
	48-62	0.5-4.0	0.4-3.0	4.5-5.5
ArC:				
Appling	0-4	3.1-5.8	2.3-4.3	4.5-6.0
	4-11	1.8-4.6	1.4-3.5	4.5-5.5
	11-38	3.5-6.5	2.6-4.8	4.5-5.5
	38-48	2.0-4.5	1.5-3.3	4.5-5.5
	48-62	0.5-4.0	0.4-3.0	4.5-5.5
BuA:				
Buncombe	0-12	1.9-5.2	1.4-3.9	4.5-6.5
	12-44	0.8-4.1	0.6-3.1	4.5-6.5
	44-62	0.2-6.7	0.2-5.0	4.5-6.5
CeB:				
Cecil	0-7	1.6-4.2	1.2-3.2	4.5-6.0
	7-45	3.5-6.6	2.6-4.9	4.5-5.5
	45-55	2.0-4.5	1.5-3.3	4.5-5.5
	55-62	0.8-3.5	0.6-2.6	4.5-5.5
CeC:				
Cecil	0-7	1.6-4.2	1.2-3.2	4.5-6.0
	7-45	3.5-6.6	2.6-4.9	4.5-5.5
	45-55	2.0-4.5	1.5-3.3	4.5-5.5
	55-62	0.8-3.5	0.6-2.6	4.5-5.5
CgC:				
Cecil	0-4	2.5-5.8	1.8-4.3	4.5-6.0
	4-45	3.5-6.6	2.6-4.9	4.5-5.5
	45-55	2.0-4.5	1.5-3.3	4.5-5.5
	55-62	0.8-3.5	0.6-2.6	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
	Inches	meq/100 g	meq/100 g	pH
ChA:				
Chewacla	0-12	5.8-18	4.3-13	4.5-6.5
	12-44	7.4-17	5.6-13	4.5-6.5
	44-62	1.8-22	1.4-16	4.5-7.8
CoA:				
Congaree	0-10	5.8-18	4.3-13	5.6-7.3
	10-58	8.6-19	6.4-14	5.6-7.3
	58-62	3.0-28	2.2-21	5.6-7.3
CrA:				
Congaree	0-10	5.8-18	4.3-13	5.6-7.3
	10-58	8.6-19	6.4-14	5.6-7.3
	58-62	3.0-28	2.2-21	5.6-7.3
Chewacla	0-12	5.8-18	4.3-13	4.5-6.5
	12-44	7.4-17	5.6-13	4.5-6.5
	44-62	1.8-22	1.4-16	4.5-7.8
CuB:				
Cullen	0-8	3.1-8.5	2.3-6.4	5.1-6.5
	8-62	3.5-8.1	2.6-6.1	5.1-6.5
CuC:				
Cullen	0-8	3.1-8.5	2.3-6.4	5.1-6.5
	8-62	3.5-8.1	2.6-6.1	5.1-6.5
DAM:				
Dam	---	---	---	---
EnB:				
Enott	0-12	3.6-17	2.7-13	5.1-7.8
	12-36	12-22	9.2-17	5.1-7.8
	36-55	5.2-14	3.9-11	5.1-7.8
	55-62	---	---	---
EnC:				
Enott	0-12	3.6-17	2.7-13	5.1-7.8
	12-36	12-22	9.2-17	5.1-7.8
	36-55	5.2-14	3.9-11	5.1-7.8
	55-62	---	---	---
GeB:				
Georgeville	0-14	1.5-3.6	1.1-2.7	4.5-6.0
	14-49	3.5-7.1	2.6-5.3	4.5-5.5
	49-57	1.5-4.5	1.1-3.3	4.5-5.5
	57-62	1.5-3.0	1.1-2.2	4.5-5.5
GeC:				
Georgeville	0-14	1.5-3.6	1.1-2.7	4.5-6.0
	14-49	3.5-7.1	2.6-5.3	4.5-5.5
	49-57	1.5-4.5	1.1-3.3	4.5-5.5
	57-62	1.5-3.0	1.1-2.2	4.5-5.5
GgB:				
Georgeville	0-7	2.7-4.6	2.0-3.5	4.5-6.0
	7-41	3.5-7.1	2.6-5.3	4.5-5.5
	41-52	1.5-4.5	1.1-3.3	4.5-5.5
	52-62	1.5-3.0	1.1-2.2	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
	Inches	meq/100 g	meq/100 g	pH
GgC:				
Georgeville----------	0-7	2.7-4.6	2.0-3.5	4.5-6.0
	7-41	3.5-7.1	2.6-5.3	4.5-5.5
	41-52	1.5-4.5	1.1-3.3	4.5-5.5
	52-62	1.5-3.0	1.1-2.2	4.5-5.5
GoC:				
Goldston-------------	0-1	2.9-14	2.2-10	4.0-6.0
	1-15	1.8-11	1.3-7.9	4.0-6.0
	15-41	---	---	---
	41-44	---	---	---
GuC:				
Gullied land---------	---	---	---	---
HaB:				
Helena---------------	0-12	1.6-6.5	1.2-4.9	4.5-6.5
	12-42	3.5-7.1	2.6-5.3	4.5-5.5
	42-62	1.0-4.0	0.8-3.0	4.5-5.5
HbC:				
Helena---------------	0-12	1.6-6.5	1.2-4.9	4.5-6.5
	12-42	3.5-7.1	2.6-5.3	4.5-5.5
	42-62	1.0-4.0	0.8-3.0	4.5-5.5
Worsham--------------	0-12	4.8-9.5	3.6-7.1	4.5-5.5
	12-49	7.5-15	5.6-11	4.5-5.5
	49-62	2.5-9.9	1.9-7.4	4.5-5.5
HeB:				
Herndon--------------	0-11	1.6-5.0	1.2-3.7	4.5-6.5
	11-41	3.5-7.1	2.6-5.3	4.5-5.5
	41-62	1.0-3.0	0.8-2.2	4.5-5.5
HeC:				
Herndon--------------	0-11	1.6-5.0	1.2-3.7	4.5-6.5
	11-41	3.5-7.1	2.6-5.3	4.5-5.5
	41-62	1.0-3.0	0.8-2.2	4.5-5.5
HwB:				
Hiwassee-------------	0-12	3.1-8.0	2.3-6.0	4.5-6.5
	12-48	3.5-8.1	2.6-6.1	4.5-6.5
	48-67	3.0-4.5	2.2-3.3	4.5-6.5
IrB:				
Iredell--------------	0-9	8.6-18	6.5-14	5.1-7.3
	9-40	18-31	13-23	5.6-7.8
	40-49	5.0-18	3.8-14	6.6-8.4
	49-62	---	---	---
IrC:				
Iredell--------------	0-9	8.6-18	6.5-14	5.1-7.3
	9-40	18-31	13-23	5.6-7.8
	40-49	5.0-18	3.8-14	6.6-8.4
	49-62	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
LoB:				
Louisburg------------	0-15	2.4-8.2	1.8-6.2	4.5-6.0
	15-29	1.8-5.6	1.3-4.2	4.5-6.0
	29-46	---	---	---
	46-56	---	---	---
LoC:				
Louisburg------------	0-15	2.4-8.2	1.8-6.2	4.5-6.0
	15-29	1.8-5.6	1.3-4.2	4.5-6.0
	29-46	---	---	---
	46-56	---	---	---
MdB:				
Masada---------------	0-8	4.8-12	3.6-8.8	4.5-6.5
	8-41	8.8-15	6.6-11	4.5-5.5
	41-62	3.8-10	2.8-7.8	4.5-5.5
MtB:				
Mattaponi------------	0-16	2.4-9.0	1.8-6.8	4.5-6.5
	16-58	8.8-16	6.6-12	4.5-5.5
	58-62	2.5-10	1.9-7.8	4.5-5.5
MtC:				
Mattaponi------------	0-16	2.4-9.0	1.8-6.8	4.5-6.5
	16-58	8.8-16	6.6-12	4.5-5.5
	58-62	2.5-10	1.9-7.8	4.5-5.5
NaD:				
Nason----------------	0-13	4.8-14	3.6-10	4.5-5.5
	13-25	8.8-16	6.6-12	4.5-5.5
	25-58	2.5-10	1.9-7.8	4.5-5.5
	58-62	---	---	---
OaB:				
Orange---------------	0-15	7.2-20	5.4-15	5.1-7.3
	15-36	18-31	13-23	5.1-6.5
	36-41	16-26	12-19	5.6-7.8
	41-48	---	---	---
	48-58	---	---	---
OaC:				
Orange---------------	0-15	7.2-20	5.4-15	5.1-7.3
	15-36	18-31	13-23	5.1-6.5
	36-41	16-26	12-19	5.6-7.8
	41-48	---	---	---
	48-58	---	---	---
PaB:				
Pacolet--------------	0-9	1.9-6.5	1.4-4.9	4.5-6.0
	9-24	3.5-7.1	2.6-5.3	4.5-6.0
	24-36	1.5-4.5	1.1-3.3	4.5-6.0
	36-62	1.0-3.0	0.8-2.2	4.5-6.0
PaC:				
Pacolet--------------	0-9	1.9-6.5	1.4-4.9	4.5-6.0
	9-24	3.5-7.1	2.6-5.3	4.5-6.0
	24-36	1.5-4.5	1.1-3.3	4.5-6.0
	36-62	1.0-3.0	0.8-2.2	4.5-6.0

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
PaD:				
Pacolet	0-9	1.9-6.5	1.4-4.9	4.5-6.0
	9-24	3.5-7.1	2.6-5.3	4.5-6.0
	24-36	1.5-4.5	1.1-3.3	4.5-6.0
	36-62	1.0-3.0	0.8-2.2	4.5-6.0
PcD:				
Pacolet	0-3	3.1-5.8	2.3-4.3	4.5-6.0
	3-22	3.5-7.1	2.6-5.3	4.5-6.0
	22-30	1.5-4.5	1.1-3.3	4.5-6.0
	30-62	1.0-3.0	0.8-2.2	4.5-6.0
TaD:				
Tatum	0-4	4.1-11	3.1-8.1	4.5-5.5
	4-41	8.8-16	6.6-12	4.5-5.5
	41-48	3.8-11	2.8-8.3	4.5-5.5
	48-62	---	---	---
TcD:				
Tatum	0-3	6.8-14	5.1-11	4.5-5.5
	3-38	8.8-16	6.6-12	4.5-5.5
	38-42	3.8-11	2.8-8.3	4.5-5.5
	42-62	---	---	---
ToA:				
Toccoa	0-12	3.0-9.8	2.2-7.3	5.6-6.5
	12-62	0.7-7.8	0.5-5.8	5.6-6.5
WdD:				
Wedowee	0-8	1.6-9.2	1.2-6.9	4.5-5.5
	8-14	1.4-4.1	1.0-3.1	4.5-5.5
	14-30	3.5-6.0	2.6-4.5	4.5-5.5
	30-62	1.0-3.5	0.8-2.6	4.5-5.5
WeA:				
Wehadkee	0-8	6.6-25	4.9-19	5.1-7.3
	8-54	6.9-17	5.1-13	5.6-7.3
	54-62	1.8-9.9	1.3-7.4	5.1-7.3
WoB:				
Worsham	0-12	4.8-9.5	3.6-7.1	4.5-5.5
	12-49	7.5-15	5.6-11	4.5-5.5
	49-62	2.5-9.9	1.9-7.4	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	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
AaB:										
Abell	B	Low	Jan-Mar	2.0-3.5	>6.0	---	---	None	---	None
			Apr-Nov	---	---	---	---	None	---	None
			Dec	2.0-3.5	>6.0	---	---	None	---	None
AbB:										
Altavista	C	Low	Jan-Apr	1.5-2.5	>6.0	---	---	None	---	Rare
			May-Nov	---	---	---	---	None	---	Rare
			Dec	1.5-2.5	>6.0	---	---	None	---	Rare
ApB:										
Appling	B	Low	Jan-Dec	---	---	---	---	None	---	None
ApC:										
Appling	B	Medium	Jan-Dec	---	---	---	---	None	---	None
ArC:										
Appling	B	Medium	Jan-Dec	---	---	---	---	None	---	None
BuA:										
Buncombe	A	Very low	Jan	---	---	---	---	None	---	---
			Feb-Jun	---	---	---	---	None	Very brief	Occasional
			Jul-Dec	---	---	---	---	None	---	---
CeB:										
Cecil	B	Low	Jan-Dec	---	---	---	---	None	---	None
CeC:										
Cecil	B	Medium	Jan-Dec	---	---	---	---	None	---	None
CgC:										
Cecil	B	Medium	Jan-Dec	---	---	---	---	None	---	None
ChA:										
Chewacla	C	Very high	Jan-Apr	0.5-1.5	>6.0	---	---	None	Long	Occasional
			May-Oct	---	---	---	---	None	---	---
			Nov-Dec	0.5-1.5	>6.0	---	---	None	Long	Occasional

Table 18.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
CoA:										
Congaree------------------	B	Low	Jan-Apr	2.5-4.0	>6.0	---	---	None	Brief	Occasional
			May-Oct	---	---	---	---	None	---	---
			Nov-Dec	2.5-4.0	>6.0	---	---	None	Brief	Occasional
CrA:										
Congaree------------------	B	Low	Jan-Apr	2.5-4.0	>6.0	---	---	None	Brief	Frequent
			May-Oct	---	---	---	---	None	---	---
			Nov-Dec	2.5-4.0	>6.0	---	---	None	Brief	Frequent
Chewacla------------------	C	Very high	Jan-Apr	0.5-1.5	>6.0	---	---	None	Long	Frequent
			May-Oct	---	---	---	---	None	---	---
			Nov-Dec	0.5-1.5	>6.0	---	---	None	Long	Frequent
CuB:										
Cullen--------------------	C	Low	Jan-Dec	---	---	---	---	None	---	None
CuC:										
Cullen--------------------	C	Medium	Jan-Dec	---	---	---	---	None	---	None
EnB:										
Enott---------------------	C	Low	Jan-Dec	---	---	---	---	None	---	None
EnC:										
Enott---------------------	C	Medium	Jan-Dec	---	---	---	---	None	---	None
GeB:										
Georgeville---------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
GeC:										
Georgeville---------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
GgB:										
Georgeville---------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
GgC:										
Georgeville---------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
GoC:										
Goldston------------------	C	High	Jan-Dec	---	---	---	---	None	---	None
GuC:										
Gullied land--------------	---	---	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
HaB:										
Helena	C	Low	Jan-Apr	1.5-2.5	3.0-5.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	3.0-5.0	---	---	None	---	None
HbC:										
Helena	C	Medium	Jan-Apr	1.5-2.5	3.0-5.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	3.0-5.0	---	---	None	---	None
Worsham	D	Very high	Jan-Apr	0.0-1.0	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	---	None
HeB:										
Herndon	B	Low	Jan-Dec	---	---	---	---	None	---	None
HeC:										
Herndon	B	Medium	Jan-Dec	---	---	---	---	None	---	None
HwB:										
Hiwassee	B	Low	Jan-Dec	---	---	---	---	None	---	None
IrB:										
Iredell	C/D	Very high	Jan-May	1.0-2.0	3.0-5.0	---	---	None	---	None
			Jun-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.0-2.0	3.0-5.0	---	---	None	---	None
IrC:										
Iredell	C/D	Very high	Jan-May	1.0-2.0	3.0-5.0	---	---	None	---	None
			Jun-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.0-2.0	3.0-5.0	---	---	None	---	None
LoB:										
Louisburg	B	Medium	Jan-Dec	---	---	---	---	None	---	None
LoC:										
Louisburg	B	High	Jan-Dec	---	---	---	---	None	---	None
MdB:										
Masada	C	Low	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
MtB:										
Mattaponi	C	Low	Jan-Apr	3.0-5.0	4.0-6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	3.0-5.0	4.0-6.0	---	---	None	---	None
MtC:										
Mattaponi	C	Medium	Jan-Apr	3.0-5.0	4.0-6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	3.0-5.0	4.0-6.0	---	---	None	---	None
NaD:										
Nason	C	Medium	Jan-Dec	---	---	---	---	None	---	None
OaB:										
Orange	D	Medium	Jan-Apr	1.0-3.0	3.3-4.6	---	---	None	---	None
			May	3.0-3.3	3.3-4.6	---	---	None	---	None
			Jun-Aug	---	---	---	---	None	---	None
			Sep	3.0-3.3	3.3-4.6	---	---	None	---	None
			Oct-Dec	1.0-3.0	3.3-4.6	---	---	None	---	None
OaC:										
Orange	D	High	Jan-Apr	1.0-3.0	3.3-4.6	---	---	None	---	None
			May	3.0-3.3	3.3-4.6	---	---	None	---	None
			Jun-Aug	---	---	---	---	None	---	None
			Sep	3.0-3.3	3.3-4.6	---	---	None	---	None
			Oct-Dec	1.0-3.0	3.3-4.6	---	---	None	---	None
PaB:										
Pacolet	B	Low	Jan-Dec	---	---	---	---	None	---	None
PaC:										
Pacolet	B	Medium	Jan-Dec	---	---	---	---	None	---	None
PaD:										
Pacolet	B	Medium	Jan-Dec	---	---	---	---	None	---	None
PcD:										
Pacolet	B	Medium	Jan-Dec	---	---	---	---	None	---	None
TaD:										
Tatum	B	Medium	Jan-Dec	---	---	---	---	None	---	None
TcD:										
Tatum	B	Medium	Jan-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				
ToA:										
Toccoa	B	Very low	Jan-Dec	2.5-5.0	>6.0	---	---	None	Brief	Occasional
WdD:										
Wedowee	B	Medium	Jan-Dec	---	---	---	---	None	---	None
WeA:										
Wehadkee	D	Very high	Jan-Jun	0.0-1.0	>6.0	---	---	None	Long	Frequent
			Jul-Oct	---	---	---	---	None	---	---
			Nov-Dec	0.0-1.0	>6.0	---	---	None	Long	Frequent
WoB:										
Worsham	D	Very high	Jan-Apr	0.0-1.0	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	---	None

Table 19.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
AaB:							
Abell	---	---	---	---	---	Moderate	High
AbB:							
Altavista	---	---	---	---	---	Moderate	Moderate
ApB:							
Appling	---	---	---	---	---	Moderate	Moderate
ApC:							
Appling	---	---	---	---	---	Moderate	Moderate
ArC:							
Appling	---	---	---	---	---	Moderate	Moderate
BuA:							
Buncombe	---	---	---	---	---	Low	Moderate
CeB:							
Cecil	---	---	---	---	---	High	High
CeC:							
Cecil	---	---	---	---	---	High	High
CgC:							
Cecil	---	---	---	---	---	High	High
ChA:							
Chewacla	---	---	---	---	---	High	Moderate
CoA:							
Congaree	---	---	---	---	---	Moderate	Moderate
CrA:							
Congaree	---	---	---	---	---	Moderate	Moderate
Chewacla	---	---	---	---	---	High	Moderate
CuB:							
Cullen	---	---	---	---	---	High	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
CuC:							
Cullen	---	---	---	---	---	High	Moderate
DAM:							
Dam	---	---	---	---	---	---	---
EnB:							
Enott	Paralithic bedrock	40-60	---	Very weakly cemented	---	High	Moderate
EnC:							
Enott	Paralithic bedrock	40-60	---	Very weakly cemented	---	High	Moderate
GeB:							
Georgeville	---	---	---	---	---	High	High
GeC:							
Georgeville	---	---	---	---	---	High	High
GgB:							
Georgeville	---	---	---	---	---	High	High
GgC:							
Georgeville	---	---	---	---	---	High	High
GoC:							
Goldston	Paralithic bedrock	10-20	---	Very weakly cemented	---	Moderate	High
	Lithic bedrock	20-41	---	Indurated			
GuC:							
Gullied land	---	---	---	---	---	---	---
HaB:							
Helena	---	---	---	---	---	High	High
HbC:							
Helena	---	---	---	---	---	High	High
Worsham	---	---	---	---	---	High	Moderate
HeB:							
Herndon	---	---	---	---	---	High	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
HeC:							
Herndon	---	---	---	---	---	High	High
HwB:							
Hiwassee	---	---	---	---	---	Moderate	Moderate
IrB:							
Iredell	Paralithic bedrock	40-60	---	Moderately cemented	---	High	Low
IrC:							
Iredell	Paralithic bedrock	40-60	---	Moderately cemented	---	High	Low
LoB:							
Louisburg	Paralithic bedrock	20-40	---	Moderately cemented	---	Low	Moderate
	Lithic bedrock	40-60	---	Indurated			
LoC:							
Louisburg	Paralithic bedrock	20-40	---	Moderately cemented	---	Low	Moderate
	Lithic bedrock	40-60	---	Indurated			
MdB:							
Masada	---	---	---	---	---	High	High
MtB:							
Mattaponi	---	---	---	---	---	High	High
MtC:							
Mattaponi	---	---	---	---	---	High	High
NaD:							
Nason	Paralithic bedrock	40-60	---	Very weakly cemented	---	Moderate	High
OaB:							
Orange	Paralithic bedrock	40-55	---	Very weakly cemented	---	High	Moderate
	Lithic bedrock	40-60	---	Indurated			

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
OaC:							
Orange	Paralithic bedrock	40-55	---	Very weakly cemented	---	High	Moderate
	Lithic bedrock	40-60	---	Indurated			
PaB:							
Pacolet	---	---	---	---	---	High	High
PaC:							
Pacolet	---	---	---	---	---	High	High
PaD:							
Pacolet	---	---	---	---	---	High	High
PcD:							
Pacolet	---	---	---	---	---	High	High
TaD:							
Tatum	Paralithic bedrock	40-60	---	Very weakly cemented	---	High	High
TcD:							
Tatum	Paralithic bedrock	40-60	---	Very weakly cemented	---	High	High
ToA:							
Toccoa	---	---	---	---	---	Low	Moderate
WdD:							
Wedowee	---	---	---	---	---	Moderate	High
WeA:							
Wehadkee	---	---	---	---	---	High	Moderate
WoB:							
Worsham	---	---	---	---	---	High	Moderate

Table 20.—Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Abell	Fine-loamy, mixed, semiactive, thermic Aquic Hapludults
Altavista	Fine-loamy, mixed, semiactive, thermic Aquic Hapludults
Appling	Fine, kaolinitic, thermic Typic Kanhapludults
Buncombe	Mixed, thermic Typic Udipsamments
Cecil	Fine, kaolinitic, thermic Typic Kanhapludults
Chewacla	Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts
Congaree	Fine-loamy, mixed, active, nonacid, thermic Oxyaquic Udifluvents
Cullen	Very-fine, kaolinitic, thermic Typic Hapludults
Enott	Fine, mixed, active, mesic Typic Hapludalfs
Georgeville	Fine, kaolinitic, thermic Typic Kanhapludults
Goldston	Loamy-skeletal, siliceous, semiactive, thermic, shallow Typic Dystrudepts
Helena	Fine, mixed, semiactive, thermic Aquic Hapludults
Herndon	Fine, kaolinitic, thermic Typic Kanhapludults
Hiwassee	Very-fine, kaolinitic, thermic Rhodic Kanhapludults
Iredell	Fine, mixed, active, thermic Oxyaquic Vertic Hapludalfs
Louisburg	Coarse-loamy, mixed, semiactive, thermic Ruptic-Ultic Dystrudepts
Masada	Fine, mixed, semiactive, thermic Typic Hapludults
Mattaponi	Fine, mixed, subactive, thermic Oxyaquic Hapludults
Nason	Fine, mixed, semiactive, thermic Typic Hapludults
Orange	Fine, smectitic, mesic Albaquic Hapludalfs
Pacolet	Fine, kaolinitic, thermic Typic Kanhapludults
Tatum	Fine, mixed, semiactive, thermic Typic Hapludults
Toccoa	Coarse-loamy, mixed, active, nonacid, thermic Typic Udifluvents
Wedowee	Fine, kaolinitic, thermic Typic Kanhapludults
Wehadkee	Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts
Worsham	Fine, mixed, active, thermic Typic Endoaquults

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