United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
Kentucky Natural
Resources and
Environmental Protection
Cabinet and Kentucky
Agricultural Experiment
Station

Soil Survey of Fulton County, Kentucky

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

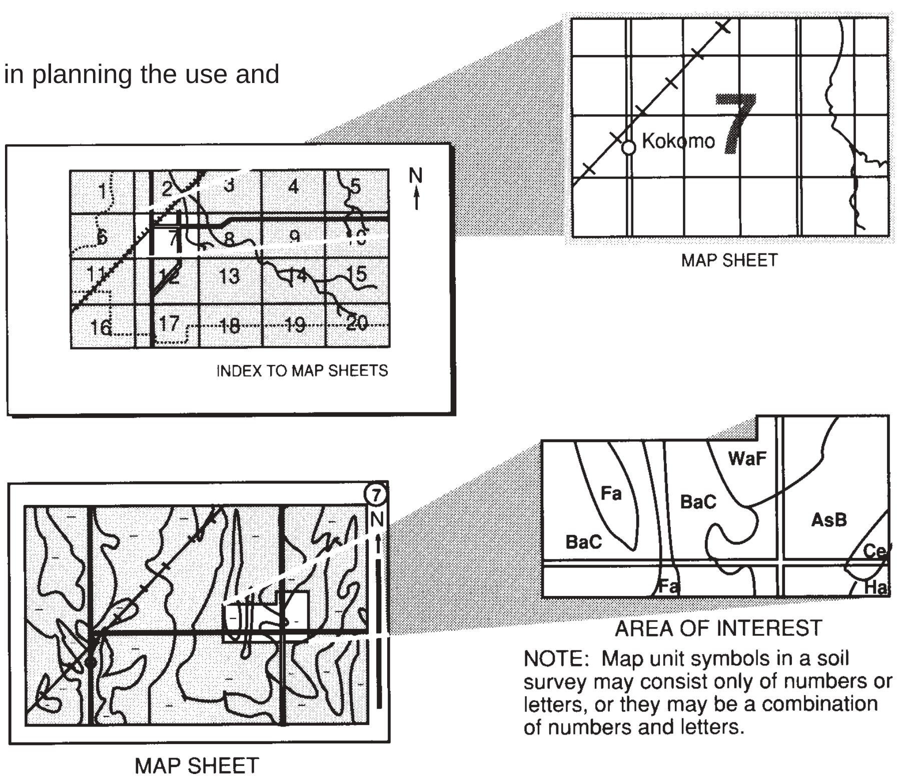
Detailed Soil Maps

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.



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.

Major fieldwork for this soil survey was completed in 2001. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. This survey was made cooperatively by the Natural Resources Conservation Service, the Kentucky Natural Resources and Environmental Protection Cabinet, and the Kentucky Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Fulton County Soil and Water Conservation District.

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: Upper Picture—No-till soybeans (foreground) and corn (background) on Loring and Memphis soils. Lower Picture—Towboat pushing a loaded barge down the Mississippi River.

Additional information about the Nation’s natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov.

Issued 2004

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Foreword

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

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

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

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

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

David G. Sawyer
State Conservationist
Natural Resources Conservation Service

Soil Survey of Fulton County, Kentucky

By Jerry E. McIntosh, Natural Resources Conservation Service

Fieldwork by Jerry E. McIntosh and Phillip G. Gregory, Natural Resources Conservation Service; and Kenneth E. Scott, Kentucky Department for Natural Resources, Division of Conservation

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
Kentucky Natural Resources and Environmental Protection Cabinet, Kentucky Agricultural Experiment Station, and Fulton County Conservation District

This soil survey updates an older survey of Fulton County published in 1964 and later reissued in 1987 (USDA, 1964). This updated soil survey provides newer soil maps containing contemporary photographic imagery, current soil series names and descriptions, and improved soil interpretive data for land use planning and management.

FULTON COUNTY is in the extreme southwestern part of Kentucky (fig. 1). It is bounded on the north and east by Hickman County; on the south by Obion and Lake Counties in Tennessee; and by the Mississippi River along its western boundary with New Madrid and Mississippi counties in Missouri. The main body of the county is 30 miles from east to west, and about 7 miles on average, from north to south.

Fulton County has a total land area of 135,264 acres, or just over 211 square miles. The Mississippi River along its western boundary accounts for approximately 12,224 acres of water, a little more than 8 percent of the total area. The river separates nearly 16,000 acres from the main body of the county. About 70 percent of this acreage is in Madrid Bend, which is accessed through Lake County in Tennessee. The other 30 percent is on Island Number 8, which is accessible only by boat.

In 2000, Fulton County had a population of 7,752. Hickman, the county seat, is in the western part of the county with much of the town located atop a bluff overlooking the Mississippi River. Hickman had a population of 2,560 in 2000. Fulton, located in the southeast corner of the county, is the largest city with a population of 2,775 in 2000 (U.S. Census Bureau, 2000). It is the urban and economic hub of the county.

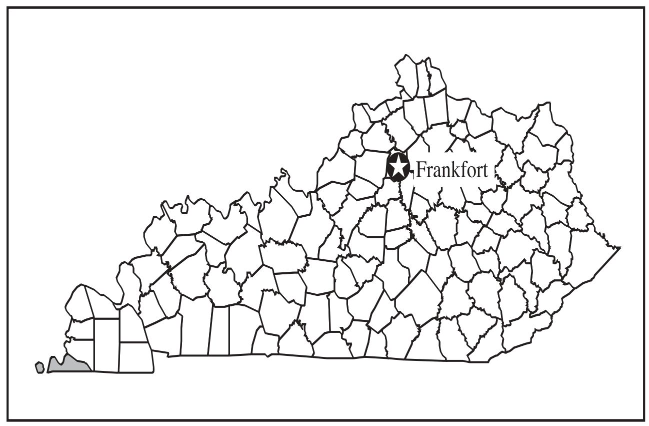

Figure 1.—Location of Fulton County in Kentucky.

Traditionally, Fulton County has been a rural, agricultural area. Its gently rolling upland terrain, fertile river bottomlands, and favorable climate all contribute to it being a leading grain-producing area in the state. According to the 1997 National Resources Inventory, about 69 percent of the county was in farmland and 20 percent was in woodland. Approximately 89 percent of the farmland was in row crop production with corn, wheat, and soybeans as the principal crops. Four percent of the farmland was used as pasture and hay production for beef cattle (USDA, 1997b).

Agriculture and related service companies are economically important industries to residents of Fulton County. In addition, the location of several large manufacturers in area towns and cities, such as Union City in Tennessee and Mayfield, Murray, Paducah, and Calvert City in Kentucky, provide a variety of employment opportunities for Fulton County residents.

General Nature of the Survey Area

This section gives general information about the survey area. It discusses the county's history and development; physiography, relief, and drainage; farming; natural resources and industry; transportation facilities; and climate.

History and Development

Fulton County was established in 1845 in western Kentucky's Jackson Purchase Region. The rights to the area known as the Purchase were acquired for $300,000 by the U.S. government in 1818 from the Chickasaw Indians. General Andrew Jackson was the chief negotiator for this land deal, thus the common association of his name with this physiographic area of Kentucky stretches from the Tennessee River (Kentucky Lake) westward to the Mississippi River. The area was organized three years later into Hickman County, with the county seat located at Columbus.

In 1845, a section of the southwestern part of Hickman County was set apart and organized as a separate county. It was named in honor of Robert Fulton, the great inventor and the first to make steamboat navigation a commercial success. The first permanent settlement in the area actually occurred 26 years earlier in 1819 atop a bluff overlooking the great Mississippi River. The site was named Mills Point after James Mills, one of the early settlers. Mills Point was later renamed Hickman with the establishment of Kentucky's 99th county in 1845.

The city of Fulton was settled in 1860. It serves as the main junction of the north-south line of the Illinois Central railroad and is the urban, overland transportation, and economic hub of the county. Until the advent of refrigerated railroad cars, Fulton was a major distribution point for bananas sold in the eastern United States. Bananas were loaded onto “ice reefers” in New Orleans and shipped northward until reaching Fulton, at which point the railroad cars required a fresh supply of block ice to prevent spoilage. The railroad cars were also broken down at Fulton, with the bananas being shipped northward by the Illinois Central railroad and to the east by the Louisville and Nashville railroad. For years the city hosted an annual banana festival in mid September. The festival has since been replaced by a weekend-long celebration known as Pontotoc Weekend.

Presently, the population of Fulton County is about the same as it was in the late 1800s. There were 7,977 residents in 1880, whereas 7,752 people currently reside in Fulton County according to the latest census. The population of the county peaked in 1940 at 15,413 (USDA, 1964).

From its earliest beginnings, Fulton County has relied heavily on agricultural production as a way of life. For the early settlers, farming was mainly on a subsistence level with crops grown primarily for local consumption and for meeting livestock needs. Today, however, agriculture in Fulton County consists of fewer farmers and larger individual farming enterprises. Also, a larger portion of the population is employed with various industries in Fulton, Hickman, and nearby towns and cities.

The Fulton County Conservation District was established in 1949. Through the leadership of local supervisors and technical assistance provided by the Natural Resources Conservation Service (formerly the Soil Conservation Service), the conservation district has had a positive impact on the total quality of the environment in Fulton County. The district has been a leader in implementing cost effective erosion-control measures and practices, improving drainage on thousands of acres of cropland, and enhancing a variety of wildlife habitat.

Physiography, Relief, and Drainage

Fulton County lies in the southwest corner of Kentucky's Jackson Purchase Physiographic Region. Characteristic of the state of Kentucky itself, Fulton County physiographically contains great variety and contrast from its east to west boundaries.

On a larger geographical scale, about 56 percent of the county is part of the Southern Mississippi Valley Silty Uplands Major Land Resource Area, commonly referred to as MLRA 134. The remaining 44 percent lies within the Mississippi River flood plain and is part of the Southern Mississippi Valley Alluvium Major Land Resource Area, known as MLRA 131 (USDA, 1981).

MLRA 134

The MLRA 134 portion of the county consists of approximately 75,866 acres that is predominantly part of a gentle, northerly sloping, undulating upland plain having been modified by varying degrees of erosion. Deep loess deposits on the uplands and silty alluvium along the valley floors characterize the geological makeup of this area. Approximately 77 percent of this area consists of nearly level to moderately steep uplands; 9 percent is hilly to steep uplands; and 14 percent is nearly level to gently sloping bottoms and stream terraces. The highest elevation in Fulton County is 500 feet above sea level on a ridgetop of the loess bluff, just above the Mississippi River flood plain in the southwest part of the county near the Obion County line (Carey and Stickney, 2001; USGS, 1971b).

Generally, the landscape in MLRA 134 consists of nearly level to gently sloping ridgetops dissected by a young, dendritic drainage system. The slopes from the ridgetops down to the flood plain valleys are commonly gently sloping to moderately steep, with local relief seldom exceeding 50 feet. However, along the Mississippi River bluff in the western part of the county the hillsides are considerably longer, steeper, and much more dissected with local relief ranging from 100 feet to as much as 150 feet.

Approximately 84 percent of the water draining the uplands of Fulton County flows to the north and west into Bayou de Chien Creek via its primary tributaries of Little Bayou de Chien, Mud Creek, Cane Creek, and Rush Creek. Bayou de Chien and the lower reaches of its tributaries experience annual flooding, oftentimes lasting for long duration. Bayou de Chien Creek flows into the Mississippi River, with the confluence occurring just north of Hickman. The

Figure 2.—Areas of the Mississippi River flood plain not protected by a levee experience frequent flooding. Looking northward from the loess bluff at Hickman, the entire Upper Bottom in Fulton County is inundated; water flowing by the Upper Bottom originates from portions of 25 states and 2 Canadian provinces.

remaining 16 percent of the uplands drains south into Tennessee via North Reelfoot Creek and Harris Fork Creek.

MLRA 131

The MLRA 131 portion of Fulton County consists of approximately 59,398 acres on the flood plain of the Mississippi River. The topography of the Mississippi River flood plain is characterized by a system of alternating, nearly level to undulating ridges and valleys. The relief is low, with elevations generally ranging between 285 to 300 feet above sea level. The highest areas on the flood plain are on undulating ridges of natural levees, which consists of deposits of loamy sediments along the banks of the present day, or what were former channels of the Mississippi River in times past. The lowest areas on the flood plain are relatively narrow valleys consisting of swales and backswamps. These valleys are generally concave, depressional areas dominated by clayey, slackwater alluvium. Such areas are frequently flooded and oftentimes remain flooded for long periods during late winter and spring where not protected by levees. Many areas are inundated during much of the year. Within these areas, various ditches and sloughs drain directly or indirectly into the Mississippi River. The lowest elevation in Kentucky occurs in Fulton County within a backswamp in the southwest portion of Madrid Bend at approximately 260 feet above sea level near the Kentucky-Tennessee state line (Carey and Stickney, 2001; USGS, 1963b).

There are three distinct physiographic areas of the Mississippi River flood plain in Fulton County—the Upper Bottom, consisting of nearly 14,000 acres north of Hickman; the Lower Bottom, comprising roughly 28,500 acres south and west of Hickman and dissected by Kentucky Highway 94; and Madrid Bend, a horseshoe-shaped 11,000-acre flood plain occupying the westernmost part of Kentucky and detached from the main body of the county. Highway accessibility into the Bend is from the south through Tennessee.

The Upper Bottom is not protected by a levee and is, therefore, subject to annual flooding from the Mississippi River (fig. 2). Water from a 918,500 square-mile drainage area representing the Ohio River and Upper Mississippi River drainage systems flows by the Upper Bottom portion of Fulton County. Flooding in the Upper Bottom results primarily from water “backing up” from south to north onto the flood plain via Obion Creek and Bayou de Chien Creek once the elevation of the Mississippi River reaches that of the lower-lying swales and depressional areas. On the average, areas at and below 305 feet in elevation are subject to flooding at least once every two years. High soil fertility in the Upper Bottom is in, large part, attributable to annual deposition from sediment laden floodwaters.

The Lower Bottom is protected from flooding by an extensive earthen levee constructed by the U.S. Army Corps of Engineers (fig. 3). The levee begins at Hickman and continues southward along the entire length of the eastern side of the Mississippi River as it flows past the Lower Bottom. Certain depressional areas of the Lower Bottom and land areas adjacent to the levee do experience local flooding resulting from seep water. Seep water occurs as a result of hydraulic pressure exerted on the flood plain once the water level in the Mississippi River outside the levee attains a certain elevation (i.e., volume and consequent weight) during high flood stage events.

A levee beginning near Cates in Tennessee extends up the eastern side of Madrid Bend, preventing floodwaters from sweeping across this area. The levee, however, does not extend around to the western side of Madrid Bend. Most of the Bend, therefore, is subject to flooding via backwater originating from the south in Tennessee and extending northward into the Bend, similar hydrologically to that which occurs in the Upper Bottom. On the average, areas at and below 289 feet in elevation are subject to flooding at least once every two years. The northern tip of Madrid Bend experiences frequent flooding due to regular bank overflow from the Mississippi River once it reaches flood stage.

Farming

Agriculture plays a major role in the Fulton County economy. In 2000, there were about 162 farms and 83,000 acres of cropland. Row crop production is the primary farm enterprise. Fulton County traditionally is among the leading grain-producing counties in Kentucky. In 2000, the county ranked among the top 10 counties in the state in the production of wheat and soybeans. It ranked 11th in corn production (Kentucky Agricultural Statistics Service, 2001).

Soybeans are planted annually on more acreage in Fulton County than any other commodity crop. They are planted virtually each year on portions of the Mississippi River flood plain in the Upper Bottom and Madrid Bend not protected from the threat of late spring flooding. Wheat plantings are reserved primarily to the gently sloping to moderately steep upland soils of the county. A limited acreage of rice is grown in the Lower Bottom. Corn is grown throughout the entire county, except for those areas along the

Figure 3.—This earthen levee constructed by the U.S. Army Corps of Engineers provides protection from Mississippi River floodwaters in the Lower Bottom.

major flood plains most susceptible to late spring flooding.

Most row crop farming operations on the loess uplands utilize no-till or minimum-till cropping systems (fig. 4). On the average, 90 percent of the acreage planted to commodity crops on upland areas utilize conservation tillage. The long growing season and favorable soil conditions permit a corn-wheat-soybean cropping rotation in which many farmers produce three crops in two years.

The areas of hayland and pasture in the county support various mixtures of grasses and legumes. Principal hay crops are alfalfa, red clover, timothy, orchardgrass, and Kentucky 31 fescue. White clover and fescue are commonly grown in pasture mixtures. Hay and pasture are utilized in beef cattle production, as there currently are no dairy operations in Fulton County.

A limited number of farming operations have become engaged in poultry production since the mid-1990s. At present, approximately 4.8 million broilers are produced annually in Fulton County through production contracts between local growers and Tyson Foods or ConAgra, with processing plants in Union City, Tennessee, and Hickory, Kentucky, respectively.

Natural Resources and Industry

Other than soil, the principal natural resources of Fulton County are surface water, ground water, gravel and sand, and timber.

Figure 4.—Double cropping of soybeans into wheat stubble is a common agronomic practice on the loess uplands.

Water is an abundant, vital resource in the survey area. The largest sources of surface water are the Mississippi River, Bayou de Chien Creek, Little Bayou de Chien Creek, Mud Creek, Obion Creek, Blue Pond, Hamby Pond, and Watson Lake. The Mississippi River is the only commercially navigable water body. Thirty-seven miles of the river flow along the western periphery of the county and is a primary source of transportation for raw goods via barge traffic.

The survey area is a model for obtaining quality ground water from aquifer-flow regimes (water-bearing formation). Large quantities of ground water satisfactory for domestic, agricultural, industrial, and municipal uses are available (Carey and Stickney, 2001; Grubb and Arthur, 1991; USGS, 1973; Wells, 1933). About 500 people in Fulton County use private wells for their water supply (Carey and Stickney, 2001). Most domestic wells within the uplands are less than 175 feet deep and obtain ground water from an upper Eocene sand aquifer within the Coastal Plain sediments (USGS, 1967a-b). However, a number of wells in the western part of the county in the highly dissected loess uplands between Brownsville and Hickman are 175 to 250 feet deep. Most of the larger volume municipal and industrial wells penetrate deeper into the aquifer at depths ranging from 400 to 550 feet at Fulton, to between 600- and 700-foot depths at Hickman.

Numerous lenses of clay can be found at relatively shallow depths within the Upper Eocene aquifer. These clay lenses retard downward movement of water, resulting in perched water conditions above the main zone of saturation. Such perched water bodies are not dependable, with the potential for wells completed in these shallow zones to go dry during the drier part of the year.

Another source of abundant ground water supplies in Fulton County is in the alluvial deposits of the Mississippi River flood plain. The main zone of saturation in the alluvium ranges from a few feet to more than 25 feet below the land surface. The saturated thickness ranges from 30 to 150 feet (USGS, 1967a-b and 1968). At present, only a small volume of water is actually withdrawn from the alluvial aquifer. The quantity of water within the main zone of saturation is generally adequate for most uses, though some objectionable constituents may be present (e.g., elevated hardness, iron, manganese, and nitrate levels). A few households in the Lower Bottom and Madrid Bend tap the alluvial aquifer for domestic water supply needs. The largest user of ground water within the Mississippi River valley is irrigation for agricultural production.

Gravel and sand occur at considerable depth below the surficial loess on the uplands throughout most of Fulton County. Deposits of gravel and sand occur at shallowest depth in the eastern one-third of the county. Two commercial gravel pits occur in the northeast corner of the county, one each located on the east and west side of U.S. Highway 51 southeast of Crutchfield. Gravel is obtained from the Continental deposits underlying the surficial loess mantle, whereas sand is obtained from both the Continental deposits and the underlying sand formations of the Coastal Plain sediments. The greater part of the sand and gravel produced is used locally for general construction and building purposes, such as subgrade for highways, parking lots, and building foundations.

Large deposits of sand occur along parts of the Mississippi River flood plain, particularly those areas in close proximity to the river channel in the Upper Bottom, Lower Bottom, and Madrid Bend. These deposits generally are a result of turbulent overflow of the river onto the flood plain during high stage flood events. Sand within these deposits is primarily very fine to medium grained.

Fulton County has about 26,000 acres of forestland (USDA, 1997b). The larger tracts occur on the steeper uplands along the loess bluff and the poorly drained bottomlands of Bayou de Chien Creek and Little Bayou de Chien Creek. Mixed stands of second- and third-growth hardwoods are predominant. There are two local sawmills in operation which produce hardwood lumber and switch ties, with the largest one located on U.S. Highway 51 near the Fulton-Hickman County line north of Crutchfield. Most of the smaller pulpwood and wood chips are shipped to Westvaco Corporation at Wickliffe to make paper.

A rather small, yet diversified, industrial base in Fulton and Hickman provides employment for more than one-third of the county's labor force. Presently, the local industry includes enterprises engaged in the manufacturing of automotive glass and window trim; silicon gaskets and seals; carbon electrodes; precision aluminum castings; concrete reinforcement wire; dairy products; plastic shipping containers; metal fabrication and welding; vegetable, flower, and lawn seed packaging and distribution (Kentucky Cabinet for Economic Development, 2001). An industrial park north of Fulton provides space for new industry. Several county residents work in nearby towns and cities including Union City in Tennessee and Mayfield, Murray, Paducah, and Calvert City in Kentucky.

Tyson Foods, a poultry grow-out and processing business, began initial operations in the mid-1990s. Tyson operates a hatchery and processing plant at Union City, Tennessee, along with a feed mill near South Fulton.

Transportation Facilities

Fulton County is accessible by state and federal highways, railway, water, and air. Major highways include the Purchase Parkway, which skirts along the southeast corner of the county near Fulton and connects to Interstate 24, 50 miles to the northeast. U.S. Highways 45 and 51 run through Fulton on the east side of the county. There are also a number of state highways running through Fulton County. State Highways 94 and 166 are the principal routes connecting Fulton to Hickman and are the main highways spanning east to west across the county. Kentucky Highway 239, running north-south through Cayce in the center of the county, pretty much dissects the main body of the county in half.

Fulton serves as a railway switchyard and is the main junction of the north-south line of the Illinois Central Railroad. Also, the main artery of Amtrak's railway passenger service from Chicago to New Orleans passes through Fulton, with a boarding depot available 0.5 mile north of Fulton on the east side of U.S. Highway 51.

The Mississippi River provides commercial transportation for a number of raw products via water. The Hickman-Fulton County Riverport Authority located at Hickman provides barge shipment for a variety of agricultural grains, steel, petroleum coke, and fertilizers. Two grain elevator operations at Hickman purchase grain from area farmers with load-out facilities for conveying grain onto barges. The Dorena/Hickman toll ferry is one of the few remaining riverboat ferries in the United States still in operation. The ferry provides a unique opportunity to experience the wonder and beauty of the Mississippi River between Dorena, Missouri, and Hickman, Kentucky.

The Fulton Municipal Airport is located approximately 1 mile northwest of Fulton and contains a 2,700-foot paved runway for light aircraft.

Climate

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

Table 1 gives data on temperature and precipitation for the survey area as recorded at Union City in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 36.9 degrees F and the average daily minimum temperature is 27.5 degrees. The lowest temperature on record, which occurred on January 9, 1942, is -22 degrees. In summer, the average temperature is 76.9 degrees and the average daily maximum temperature is 87.8 degrees. The highest recorded temperature, which occurred on August 10, 1930, is 111 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 51.9 inches. Of this, 29.2 inches, or 56 percent, usually falls in April through October. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through October is less than 14.6 inches. The heaviest 1-day rainfall during the period of record was 5.7 inches on June 14, 1970. Thunderstorms occur on about 60 days each year, and most occur between May and August.

The average seasonal snowfall is about 9.4 inches. The greatest snow depth at any one time during the period of record was 11 inches recorded on January 20, 1978. On the average, 8 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 heaviest 1-day snowfall on record was 11 inches on March 9, 1960.

The average relative humidity in midafternoon is about 58 percent. Humidity is higher at night, and the average at dawn is about 86 percent. The sun shines 68 percent of the time possible in summer and 47 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, around 9 miles per hour, from November to 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.

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

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

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

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

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

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Survey Procedures

The general procedures followed in making this survey are described in the “National Soil Survey Handbook” of the Natural Resources Conservation Service and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993; USDA, 1996). The soil survey of Fulton County published in 1964 and other surveys published in the Jackson Purchase Region were used as references.

The soil survey of Fulton County is among the first surveys in the state to be updated. The maps and soil descriptions in the 1964 survey were used as a reference of where to plot soil boundaries on modern photographic imagery and where to plan more intensive soil investigations and transects.

Before the fieldwork began, high-altitude aerial photographs taken in the spring of 1992 and 1993 and enlarged to a scale of 1:12,000 were studied. Soil scientists studied U.S. Geological Survey geologic and topographic maps at a scale of 1:24,000 to relate land and image features (USGS, 1963a-c, 1967a-c, 1971a-b, and 1974). Color infrared maps were used to assist with interpreting soil drainage, degree and extent of soil erosion, and vegetation patterns. Refinement of existing map units or the design of new units were then made according to the pattern of soils interpreted from photographs, maps, and field observations.

Two levels of mapping intensity were used in this survey. More closely spaced observations were made in the valleys and gently sloping uplands where the soils are used for agriculture or potential urban development. Less closely-spaced observations were made on the steeper hillsides where the soils are used as woodland or wildlife habitat. For either level of mapping intensity, the information about the soils can be used to determine soil management and to predict the suitability of the soils for various uses.

Some areas required remapping, particularly on the Mississippi River flood plain within MLRA 131. Traverses in these areas were made by truck or on foot. The soils were examined at intervals ranging from a few hundred feet to about $^{1}/_{4}$ mile, depending on the landscape and complexity of the soil pattern. Over the course of the previous 40 years, ditches have been cut and channels have been deepened and straightened, along with land-clearing and land-grading operations, to improve the drainage of many of the soils in these areas. Some soil series mapped in the older survey are either inactive or no longer used in this state.

On the nearly level to gently sloping deep loess uplands, most of the soil series from the older survey are still valid. In these areas, traverse intervals were much wider than the norm for original mapping. Some adjustments of slope lines and map unit delineations were made during the course of the update.

In many areas, such as those where steep slopes intersect flood plains, soil boundaries are precise because of the abrupt change in landform. In other areas, soil boundaries cannot be exact because they fall within a zone of gradual change between landforms or geology, such as an area where a narrow, sloping ridgetop becomes a moderately steep hillside. Much intermingling of the soils occurs in these zones.

Soil boundaries were determined on the basis of soil examinations, observations, and photo interpretation. The soils were examined with the aid of a hand probe or mechanical hydraulic probe, bucket auger, or a spade to a depth of 3 to 6 feet. Additional soil descriptions were obtained through statistical sampling techniques.

Estimating the amount of soil loss due to erosion is a challenge for any soil survey, particularly one having a significant acreage of highly erodible soils. With this survey, the degree and extent of soil erosion was determined based on the depth from the surface to some diagnostic subsoil feature, such as depth to fragic properties or depth to an argillic horizon. Using these criteria rather than trying to estimate how much soil has actually been lost from the surface layer promoted more consistent mapping among different soil scientists and recognized the practical differences in soil management.

Samples for chemical and physical analyses were taken from some of the soils in the survey area. Most of the analyses were made by the Kentucky Agricultural Experiment Station. Commonly used laboratory procedures were followed (USDA, 1996). The results of the analyses of selected soils are given in tables 19 and 20.

After completion of soil mapping on high-altitude aerial photographs, map unit delineations were compiled by hand to prepunched, 7-mil, single-matte mylar overlain onto 1:12,000 scale quarter-quad, digital orthophotographic base maps. The mylar was then scanned and converted to digital format from which the published survey was made at 1:12,000 scale. Surface drainage and cultural features were also compiled to prepunched mylar overlain onto 1:12,000 scale quarter-quad, digital orthophotographic base maps. Compilation materials and methodology were in accordance with established Soil Survey Geographic (SSURGO) standards (USDA, 1996).

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

MLRA 131—Southern Mississippi Valley Alluvium

Very deep, excessively drained to poorly drained, dominantly nearly level, sandy to clayey textured soils; on the Mississippi River flood plain

The soils comprising the map units in MLRA 131 occur on the Mississippi River flood plain. Collectively, they occur in what the local residents refer to as the Upper Bottom, Lower Bottom, Island Number 8, and Madrid Bend. The soils in each of these areas are very deep, having formed in thick alluvial sediments, and cover an array of drainage classes (poorly drained to well drained) and soil textures (sandy to clayey). Such variations are attributed in large part to their proximity to the present-day and former channels of the Mississippi River.

Most areas of these soils are cleared and used for producing soybeans, corn, and wheat. Some of the most productive agricultural soils in Kentucky occur on the Mississippi River flood plain. In many instances, the physical and chemical properties of these soils are favorable for high levels of sustained crop productivity. Some of the soils, however, have productivity limitations resulting from droughtiness, excessive internal wetness, and flooding where not protected by levees. Forty-four percent of the land acreage in Fulton County consists of soils occurring on the Mississippi River flood plain.

1. Crevasse-Robinsonville

Very deep, excessively drained and well drained, nearly level to undulating, sandy and loamy soils

Setting

Location in the survey area: Upper Bottom, Island Number 8, and Madrid Bend
Landscape: Flood plains
Landform: Point bar deposits, splays, old natural levees, and areas adjacent to or near the present-day Mississippi River channel
Landform position: Crevasse—point bar deposits, splays, and areas adjacent to the Mississippi River; Robinsonville—broad natural levees along the current and former channels of the Mississippi River
Slope range: 0 to 3 percent

Composition

Percent of the survey area: 5
Crevasse soils—61 percent
Robinsonville soils—23 percent
Minor soils—16 percent

Minor soils

- Commerce
- Riverwash

Land Use

Major uses: Woodland, idle land, and wildlife habitat

2. Bowdre-Bondurant-Commerce

Very deep, somewhat poorly drained, nearly level, clayey and loamy soils, or soils that are clayey in the upper part and loamy in the lower part

Setting

Location in the survey area: Lower Bottom and Madrid Bend
Landscape: Flood plains
Landform: Nearly level to slightly depressional alluvial plains
Landform position: Intermediate between old natural levees and lower lying slackwater areas
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 9
Bowdre soils—30 percent
Bondurant soils—29 percent
Commerce soils—23 percent
Minor soils—18 percent

Minor soils

- Bardwell
- Sharkey
- Ware

Land Use

Major uses: Cropland

Figure 5.—Like most soils on the Mississippi River flood plain, the Commerce-Ware-Bardwell general soil map unit is used almost exclusively for row crop production.

3. Commerce-Ware-Bardwell

Very deep, well drained to somewhat poorly drained, nearly level, loamy soils

Setting

Location in the survey area: Lower Bottom, Island Number 8, and Madrid Bend
Landscape: Flood plains
Landform: Ridges and broad alluvial plains
Landform position: Commerce—nearly level to slightly concave broad alluvial plains and along drainageways; Ware and Bardwell—ridges of higher elevation
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 16
Commerce soils—34 percent
Ware soils—26 percent
Bardwell soils—20 percent
Minor soils—20 percent

Minor soils

- Bondurant
- Bowdre
- Openlake
- Phillippy
- Robinsonville
- Sharkey

Land Use

Major uses: Cropland (fig. 5)

4. Sharkey-Tunica

Very deep, poorly drained, nearly level soils that are clayey throughout or are clayey in the upper part and loamy in the lower part

Setting

Location in the survey area: Upper Bottom, Lower Bottom, and Madrid Bend
Landscape: Flood plains
Landform: Swales, backswamps, and drainageways
Landform position: Broad, nearly level to depressional swales, old sloughs, drainageways, and areas of slackwater alluvium
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 6
Sharkey soils—70 percent
Tunica soils—23 percent
Minor soils—7 percent

Minor soils

- Bondurant
- Bowdre
- Keyespoint
- Openlake
- Roellen

Land Use

Major uses: Wildlife and waterfowl habitat, cropland, and woodland

5. Openlake-Keyespoint

Very deep, somewhat poorly drained, nearly level soils that are clayey throughout or are clayey in the upper part and loamy in the lower part

Setting

Location in the survey area: Upper Bottom
Landscape: Flood plains
Landform: Broad, nearly level to slightly depressional alluvial plains
Landform position: Intermediate between old natural levees and lower lying slackwater areas
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 4
Openlake soils—52 percent
Keyespoint soils—37 percent
Minor soils—11 percent

Minor soils

- Commerce
- Sharkey
- Tunica

Land Use

Major uses: Cropland

6. Bardwell-Commerce

Very deep, well drained to somewhat poorly drained, nearly level, loamy soils

Setting

Location in the survey area: Upper Bottom

Landscape: Flood plains
Landform: Ridges and alluvial plains
Landform position: Bardwell—ridges and broad, undulating alluvial plains of higher elevation; Commerce—nearly level to slightly depressional broad alluvial plains and drainageways
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 3
Bardwell soils—58 percent
Commerce soils—22 percent
Minor soils—20 percent

Minor soils

- Phillippy
- Robinsonville
- Ware

Land Use

Major uses: Cropland

7. Convent-Adler

Very deep, moderately well drained and somewhat poorly drained, nearly level, loamy soils

Setting

Location in the survey area: Eastern edge of the Mississippi River flood plain in the Lower Bottom
Landscape: Flood plains
Landform: Alluvial plains and alluvial fans along the base of and parallel to the loess bluff
Landform position: Convent—nearly level to slightly concave depressional areas and along drainageways; Adler—undulating alluvial plains and alluvial fans of slightly higher elevation
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 1
Convent soils—60 percent
Adler soils—31 percent
Minor soils—9 percent

Minor soils

- Center
- Commerce
- Kurk
- Mhoon
- Openlake
- Sharkey

Land Use

Major uses: Cropland

MLRA 134—Southern Mississippi Valley Silty Uplands

Very deep, well drained to poorly drained, nearly level to very steep soils; on deep loess uplands, stream terraces, and narrow flood plains that are tributaries to the Mississippi River

The soils comprising the map units in MLRA 134 occur on uplands, stream terraces, and narrow flood plains that drain the uplands. Soils on the uplands are silty, having formed in thick Pleistocene loess deposits ranging in thickness from 10 feet on the eastern side of the county near the Hickman County line to nearly 100 feet along the bluffs on the western side of the county adjacent to the Mississippi River flood plain. The soils on stream terraces and along the flood plains formed in silty alluvium ranging in thickness from 10 to 40 feet, with low to moderate amounts of clay in the subsoil. In places, sand or gravel occurs below about 15 feet.

Most areas of these soils are cleared and used for row crop production. Principal crops are corn, wheat, and soybeans. Soils occurring on the steeper areas are used as woodland or permanent pasture. Most of the poorly drained soils along Little Bayou de Chien and Bayou de Chien flood plains remain in woodland.

Erosion, seasonal wetness, and maintaining fertility are the main management concerns for these soils. Fifty-six percent of the land acreage in Fulton County consists of soils that occur on the deep loess uplands and narrow flood plains that drain them.

8. Memphis

Very deep, well drained, gently sloping to steep, loamy soils; on highly dissected loess hills

Setting

Location in the survey area: Western part in the vicinity of Brownsville
Landscape: Uplands
Landform: Dissected loess hills
Landform position: Narrow ridgetops and steep hillslopes, side slopes, and footslopes
Slope range: 2 to 50 percent

Composition

Percent of the survey area: 5

Memphis soils—60 percent
Minor soils—40 percent

Minor soils

- Adler
- Convent
- Loring
- Natchez
- Gullied land

Land Use

Major uses: Woodland and pastureland

9. Loring-Memphis

Very deep, well drained, nearly level to moderately steep, loamy soils; on loess uplands

Setting

Location in the survey area: Central part in the vicinity of Cayce
Landscape: Uplands
Landform: Loess hills
Landform position: Ridgetops and side slopes
Slope range: 0 to 20 percent

Composition

Percent of the survey area: 8
Loring soils—49 percent
Memphis soils—33 percent
Minor soils—18 percent

Minor soils

- Adler
- Calloway
- Convent
- Dekoven
- Grenada

Land Use

Major uses: Cropland

10. Loring-Feliciana

Very deep, well drained and moderately well drained, nearly level to moderately steep, loamy soils; on loess uplands

Setting

Location in the survey area: Eastern part east of Little Bayou de Chien near Hickman County
Landscape: Uplands
Landform: Loess hills
Landform position: Ridgetops and side slopes
Slope range: 0 to 20 percent

Composition

Percent of the survey area: 7
Loring soils—56 percent
Feliciana soils—26 percent
Minor soils—18 percent

Minor soils

- Calloway
- Collins
- Falaya
- Grenada

Land Use

Major uses: Cropland

11. Loring-Grenada

Very deep, moderately well drained, nearly level to moderately steep, loamy soils; on broad loess uplands

Setting

Location in the survey area: Scattered throughout the county
Landscape: Uplands
Landform: Loess hills
Landform position: Ridgetops and side slopes
Slope range: 0 to 20 percent

Composition

Percent of the survey area: 24
Loring soils—37 percent
Grenada soils—36 percent
Minor soils—27 percent

Minor soils

- Calloway
- Collins
- Convent
- Dekoven
- Falaya
- Feliciana
- Memphis

Land Use

Major uses: Cropland (fig. 6)

Figure 6.—A typical area of the Loring-Grenada general soil map unit used primarily for producing corn, wheat, and soybeans.

12. Grenada-Calloway

Very deep, moderately well drained and somewhat poorly drained, nearly level to strongly sloping, loamy soils; on broad loess uplands

Setting

Location in the survey area: Scattered throughout the county
Landscape: Uplands
Landform: Broad, undulating loess plains
Landform position: Ridgetops and side slopes
Slope range: 0 to 12 percent

Composition

Percent of the survey area: 4
Grenada soils—41 percent
Calloway soils—36 percent
Minor soils—23 percent

Minor soils

- Convent
- Dekoven
- Falaya
- Kurk
- Loring
- Routon

Land Use

Major uses: Cropland

13. Kurk-Convent-Dekoven

Very deep, somewhat poorly drained, nearly level, loamy soils; on stream terraces and flood plains

Setting

Location in the survey area: Mud Creek flood plain

Landscape: Uplands
Landform: Drainageways
Landform position: Kurk—stream terraces; Convent and Dekoven—flood plains
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 3
Kurk soils—32 percent
Convent soils—27 percent
Dekoven soils—20 percent
Minor soils—21 percent

Minor soils

- Center
- Mhoon
- Routon

Land Use

Major uses: Cropland

14. Convent-Mhoon-Routon

Very deep, somewhat poorly drained and poorly drained, nearly level, loamy soils; on flood plains and stream terraces

Setting

Location in the survey area: Little Bayou de Chien and Bayou de Chien flood plains
Landscape: Uplands
Landform: Drainageways
Landform position: Convent and Mhoon—flood plains; Routon—stream terraces
Slope range: 0 to 2 percent

Composition

Percent of the survey area: 5
Convent soils—42 percent
Mhoon soils—34 percent
Routon soils—14 percent
Minor soils—10 percent

Minor soils

- Center
- Dekoven
- Kurk

Land Use

Major uses: Woodland, wildlife and waterfowl habitat, and cropland

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, Grenada silt loam, 2 to 6 percent slopes, eroded, is a phase of the Grenada series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called 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. Convent-Mhoon complex, 0 to 2 percent slopes, occasionally flooded, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Urban land is an example.

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

Ac—Adler silt loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain in the Lower Bottom
Position on the landform: Nearly level to gently sloping areas adjacent to the bluff
Size of areas: 10 to 100 acres

Composition

• Adler and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting
• Commerce and Convent soils
• Areas of alluvial fans with slopes ranging to 5 percent

Similar
• Soils that do not contain 2 chroma mottles until about 2 feet below the surface

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 39 inches—dark yellowish brown and brown, mottled silt loam

Substratum:
39 to 47 inches—mottled grayish brown and dark yellowish brown silt loam
47 to 80 inches—gray and dark gray, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 2 to 5 feet during late winter and early spring
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability class: 1
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Minimizing tillage operations to reduce compaction
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover, red clover, orchardgrass, and tall fescue
Management concerns:
• Seasonal wetness
• Maintaining fertility
Management measures:
• Grasses and legumes that can withstand limited wetness are best suited
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, green ash, and sweetgum
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
• Plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Very limited

Limitations:
- Seasonal wetness

Corrective measures:
- Increasing the size of the absorption area
- Surface drains or curtain drains, where practical, to remove excess water
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Not limited

Ad—Adler silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Flood plains of tributaries to the Mississippi River
Position on the landform: Nearly level areas along creeks and streams
Size of areas: 10 to 100 acres

Composition

- Adler and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting
- Convent soils

Similar
- Soils that do not contain 2 chroma mottles until about 2 feet below the surface

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 39 inches—dark yellowish brown and brown, mottled silt loam

Substratum:
39 to 47 inches—mottled grayish brown and dark yellowish brown silt loam
47 to 80 inches—gray and dark gray, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 2 to 5 feet during late winter and early spring
Frequency of flooding: Occasional—very brief to brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum; however, small grains may be damaged by brief flooding

Management concerns:
- Susceptibility to compaction
- Occasional flooding
- Maintaining tilth and fertility

Management measures:
- Minimizing tillage operations to reduce compaction
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover, red clover, orchardgrass, and tall fescue

Management concerns:
- Seasonal wetness
- Maintaining fertility

Management measures:
- Grasses and legumes that can withstand limited wetness are best suited
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, green ash, and sweetgum

Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality
- Plant competition

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited

Limitations:
• Flooding hazard
Corrective measures:
• Building on better suited soils out of the flood plain
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Seasonal wetness
Corrective measures:
• Installing the absorption field on higher elevation out of the flood plain
• Increasing the size of the absorption area
• Surface drains or curtain drains, where practical, to remove excess water
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Ba—Bardwell silt loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain in the Lower Bottom
Position on the landform: Broad, nearly level areas
Size of areas: 25 to 300 acres

Composition

• Bardwell and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Commerce, Phillippy, Robinsonville, and Ware soils
• Small areas that have fine sandy loam, loam, or silty clay loam surface texture
• Soils similar to Bardwell with a mollic epipedon ranging from 24 to 36 inches thick

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown silt loam

Subsurface layer:
8 to 14 inches—dark brown silty clay loam

Subsoil:
14 to 39 inches—brown silt loam
39 to 53 inches—brown, mottled silt loam

Substratum:
53 to 84 inches—brown, mottled loam and very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 3 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability class: 1
Suitability: Well suited
Adapted crops: Soybeans, corn, and small grains
Management concerns:
• Maintaining tilth and fertility
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, white clover, red clover, alfalfa, and tall fescue
Management concerns:
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited

Adapted species: Eastern cottonwood, green ash, pecan, and sweetgum
Management concerns:
• Plant competition
Management measures:
• Using cultivation and/or chemicals to alleviate undesirable species
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Seasonal wetness at 3 feet depth
Corrective measures:
• Increasing the size of the absorption area
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Somewhat limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Bd—Bardwell silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Mississippi River flood plain in Madrid Bend
Position on the landform: Broad, nearly level areas
Size of areas: 30 to 250 acres

Composition

• Bardwell and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Commerce, Phillippy, Robinsonville, and Ware soils
• Small areas that have fine sandy loam, loam, or silty clay loam surface texture

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown silt loam

Subsurface layer:
8 to 14 inches—dark brown silty clay loam

Subsoil:
14 to 39 inches—brown silt loam
39 to 53 inches—brown, mottled silt loam

Substratum:
53 to 84 inches—brown, mottled loam and very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 2.5 to 5 feet of the surface during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Soybeans, corn, and small grains
Management concerns:
• Occasional flooding
• Maintaining tilth and fertility
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, white clover, red clover, alfalfa, and tall fescue
Management concerns:
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited

Adapted species: Eastern cottonwood, green ash, pecan, and sweetgum
Management concerns:
• Plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Be—Bardwell silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Broad, nearly level areas
Size of areas: 25 to 300 acres

Composition

• Bardwell and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Commerce, Phillippy, Robinsonville, and Ware soils
• Small areas that have fine sandy loam, loam, or silty clay loam surface texture
• Soils similar to Bardwell with a mollic epipedon ranging from 24 to 30 inches thick

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown silt loam

Subsurface layer:
8 to 14 inches—dark brown silty clay loam

Subsoil:
14 to 39 inches—brown silt loam
39 to 53 inches—brown, mottled silt loam

Substratum:
53 to 84 inches—brown, mottled loam and very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 3 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Soybeans and corn (fig. 7)
Management concerns:
• Spring flooding sometimes lasting for long duration
• Delayed plantings in the spring
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Management concerns:
• Flooding sometimes lasting for long duration
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Figure 7.—Soybeans in an area of Bardwell silt loam, 0 to 2 percent slopes, frequently flooded. Soybean is the primary crop produced each year in the Upper Bottom.

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, green ash, pecan, and sweetgum
Management concerns:
• Flooding hazard
• Plant competition
Management measures:
• Using cultivation and/or chemicals to alleviate undesirable species
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Bf—Bardwell silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Broad, nearly level areas
Size of areas: 15 to 75 acres

Composition

- Bardwell and similar soils: 80 percent
- Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
- Commerce, Openlake, Phillippy, Robinsonville, and Ware soils
- Small areas that have fine sandy loam, loam, or silt loam surface texture
- Soils similar to Bardwell with a mollic epipedon ranging from 24 to 30 inches thick

Typical Profile

Surface layer:
0 to 10 inches—very dark grayish brown silty clay loam

Subsurface layer:
10 to 15 inches—very dark grayish brown and dark brown silty clay loam

Subsoil:
15 to 28 inches—brown silt loam
28 to 35 inches—brown and dark yellowish brown silt loam
35 to 44 inches—olive brown, mottled silt loam

Substratum:
44 to 80 inches—olive brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 3 to 6 feet during winter and early spring
Shrink-swell potential: Moderate in the upper 1.5 feet
Frequency of flooding: Frequent—brief to very long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
- Flooding hazard

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
- Flooding sometimes lasting for very long duration
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, green ash, pecan, and sweetgum
Management concerns:
- Plant competition

Management measures:
- Using cultivation and/or chemicals to alleviate undesirable species
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Bn—Bondurant silty clay loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 150 acres

Composition

- Bondurant and similar soils: 80 percent
- Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
- Bowdre, Commerce, Keyespoint, and Openlake soils
- Small areas that have silty clay surface texture
- Soils with a mollic epipedon ranging from 24 to 32 inches thick
- Soils with a dark grayish brown overwash layer ranging from 6 to 12 inches thick

Typical Profile

Surface layer:
0 to 11 inches—very dark grayish brown silty clay loam

Subsurface layer:
11 to 20 inches—very dark grayish brown, mottled silty clay

Subsoil:
20 to 50 inches—dark grayish brown, mottled silty clay
50 to 67 inches—mottled olive brown and dark gray clay loam

Substratum:
67 to 80 inches—gray, mottled very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and early spring
Shrink-swell potential: High
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
- Narrow range of workability due to high clay content
- Seasonal high water table
- Delayed plantings for corn
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
- Wetness
- Controlling weeds
- Maintaining tilth

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• High shrink-swell potential
• Wetness
Corrective measures:
• Adding extra reinforcement in foundations or building on concrete slab
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Wetness
• Very slow permeability
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• High shrink-swell potential
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Bo—Bondurant silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 150 acres

Composition

• Bondurant and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Bowdre, Commerce, Keyespoint, and Openlake soils
• Areas that have silty clay surface texture
• Soils with a mollic epipedon ranging from 24 to 30 inches thick
• Soils with a dark grayish brown overwash layer ranging from 6 to 12 inches thick

Typical Profile

Surface layer:
0 to 11 inches—very dark grayish brown silty clay loam

Subsurface layer:
11 to 20 inches—very dark grayish brown, mottled silty clay

Subsoil:
20 to 50 inches—dark grayish brown, mottled silty clay
50 to 67 inches—mottled olive brown and dark gray clay loam

Substratum:
67 to 80 inches—gray, mottled very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and early spring
Shrink-swell potential: High
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4w
Suitability: Suited
Adapted crops: Soybeans
Management concerns:
• Frequent flooding sometimes lasting for long duration
• Narrow range of workability due to high clay content

- Seasonal high water table
- Susceptibility to excessive compaction
- Delayed plantings
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Limiting tillage and restricting it to periods when the soil is moist, and not too wet or too dry
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Not suited
Management concerns:
- Frequent flooding sometimes lasting for long duration
- Wetness

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum
Management concerns:
- Frequent flooding sometimes lasting for long duration
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness
- Very slow permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Br—Bowdre silty clay, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 400 acres

Composition

- Bowdre and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bondurant, Commerce, Keyespoint, Openlake, Roellen, and Tunica soils
- Small areas that have silty clay loam surface texture
- Soils similar to Bowdre with a mollic epipedon greater than 24 inches thick

Typical Profile

Surface layer:
0 to 6 inches—very dark gray silty clay

Subsurface layer:
6 to 20 inches—very dark grayish brown, mottled silty clay

Subsoil:
20 to 24 inches—dark grayish brown, mottled silty clay loam
24 to 30 inches—mottled grayish brown and light olive brown very fine sandy loam

Substratum:
30 to 80 inches—grayish brown, mottled loamy fine sand

Soil Properties and Qualities

Depth: Very deep

Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow in the upper 2 feet; moderately rapid in the substratum
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and spring
Shrink-swell potential: High in the upper 2 feet
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
- Narrow range of workability due to high clay content
- Seasonal high water table
- Delayed plantings for corn
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
- Wetness
- Controlling weeds
- Maintaining tilth

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- High shrink-swell potential in the upper 2 feet
- Wetness

Corrective measures:
- Adding extra reinforcement in foundations or building on concrete slab
- Surface drains or curtain drains to remove excess water
- Tile drains by footings
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Wetness
- Very slow permeability in the upper 2 feet

Corrective measures:
- Curtain drains to remove excess water
- Special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- High shrink-swell potential
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Bw—Bowdre silty clay, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain in Madrid Bend
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 400 acres

Composition

- Bowdre and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bondurant, Commerce, and Openlake soils
- Soils similar to Bowdre with a mollic epipedon greater than 24 inches thick

Typical Profile

Surface layer:
0 to 6 inches—very dark gray silty clay

Subsurface layer:
6 to 20 inches—very dark grayish brown, mottled silty clay

Subsoil:
20 to 24 inches—dark grayish brown, mottled silty clay loam
24 to 30 inches—mottled grayish brown and light olive brown very fine sandy loam

Substratum:
30 to 80 inches—grayish brown, mottled loamy fine sand

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow in the upper 2 feet; moderately rapid in the substratum
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and spring
Shrink-swell potential: High in the upper 2 feet
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4w
Suitability: Suited
Adapted crops: Soybeans
Management concerns:
- Frequent flooding sometimes lasting for very long duration
- Narrow range of workability due to high clay content
- Seasonal high water table
- Delayed plantings
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Not suited
Management concerns:
- Frequent flooding sometimes lasting for very long duration
- Wetness

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential in the upper 2 feet
- Wetness

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness
- Very slow permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited

Limitations:
- Flooding hazard
- High shrink-swell potential
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

CaA—Calloway silt loam, 0 to 2 percent slopes

Setting

Major landform: Uplands
Position on the landform: Nearly level to slightly concave areas of broad summits
Size of areas: 5 to 200 acres

Composition

- Calloway and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Center and Routon soils on lower lying stream terraces
- Convent soils occupying narrow drainageways
- Grenada soils in slightly higher landscape positions
- Poorly drained soils that contain a fragipan

Similar:
- Soils similar to Calloway in the Mud Creek watershed with a higher pH in the upper part of the subsoil

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown and brown, mottled silt loam

Subsurface layer:
8 to 19 inches—brown, mottled silt loam

Subsoil:
19 to 30 inches—light brownish gray, mottled silt loam
30 to 50 inches—a fragipan of mottled strong brown silty clay loam and light brownish gray silt loam
50 to 60 inches—a fragipan of strong brown, mottled silt loam
60 to 80 inches—strong brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 1.5 feet during winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum

Management concerns:
- Seasonal high water table
- Fragipan
- Delayed plantings
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Surface drains can be used to remove excess water
- Minimizing tillage operations to reduce compaction
- Crop residue management and conservation tillage
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue

Management concerns:
- Seasonal wetness
- Maintaining tilth and fertility

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Southern red oak, hickory, red maple, white oak, and sweetgum

Management concerns:
- Moderate equipment limitations due to seasonal wetness
- Moderate plant competition

Management measures:
- Restricting equipment use to periods when the soil is dry

• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Wetness
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Wetness
• Slow permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

CaB2—Calloway silt loam, 2 to 4 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Side slopes
Size of areas: 10 to 75 acres

Composition

• Calloway and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Convent soils occupying narrow drainageways
• Grenada soils
• Areas with slopes ranging to 6 percent

Similar:
• Soils similar to Calloway in the Mud Creek watershed with a higher pH in the upper part of the subsoil

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown and brown, mottled silt loam

Subsurface layer:
5 to 19 inches—brown, mottled silt loam

Subsoil:
19 to 25 inches—light brownish gray, mottled silt loam
25 to 50 inches—a fragipan of mottled strong brown silty clay loam and light brownish gray silt loam
50 to 60 inches—a fragipan of strong brown, mottled silt loam
60 to 80 inches—strong brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 1.5 feet during winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Seasonal high water table
• Fragipan
• Delayed plantings
• Erodibility
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Surface drains can be used to remove excess water

• Minimizing tillage operations to reduce compaction
• Crop residue management and conservation tillage
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Maintaining tilth and fertility
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Southern red oak, hickory, red maple, white oak, and sweetgum
Management concerns:
• Moderate equipment limitations due to seasonal wetness
• Moderate plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Wetness
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Wetness
• Slow permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

CeA—Center silt loam, 0 to 3 percent slopes

Setting

Major landform: Loess uplands
Position on the landform: Higher, gently undulating portions of stream terraces
Size of areas: 3 to 100 acres

Composition

• Center and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Small areas of Kurk soils in depressions
• Small areas about 50 feet wide around the periphery of the map unit containing slopes ranging from 4 to 6 percent

Typical Profile

Surface layer:
0 to 10 inches—brown, mottled silt loam

Subsoil:
10 to 21 inches—yellowish brown, mottled silt loam
21 to 38 inches—mottled yellowish brown, light olive brown, and light brownish gray silty clay loam
38 to 80 inches—mottled yellowish brown and light olive brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate in the upper part of the solum; moderately slow in the lower part of the solum
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderately slow
Depth to seasonal high water table: 1.5 to 2.5 feet during winter and early spring
Frequency of flooding: None (a few of the lowest lying areas may experience rare flooding)

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Seasonal high water table
• Erodibility in areas exceeding 2 percent slope
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Surface drains to remove or divert excess water
• Crop residue management and conservation tillage
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Maintaining tilth and fertility
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, red maple, green ash, and sweetgum
Management concerns:
• Moderate equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
• Wetness
Corrective measures:
• Surface drains or curtain drains to remove excess water
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Restricted permeability below about 2 feet
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

CfA—Center silt loam, 0 to 3 percent slopes, occasionally flooded

Setting

Major landform: Stream terraces along Bayou de Chien and near the mouth of Mud Creek
Position on the landform: Higher, gently undulating portions of stream terraces
Size of areas: 10 to 40 acres

Composition

• Center and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Small areas of Kurk soils in depressions
• Small areas about 50 feet wide around the periphery of the map unit containing slopes ranging from 4 to 6 percent
• Small areas generally less than 5 acres near the mouth of Mud Creek that frequently flood

Typical Profile

Surface layer:
0 to 10 inches—brown, mottled silt loam

Subsoil:
10 to 21 inches—yellowish brown, mottled silt loam
21 to 38 inches—mottled yellowish brown, light olive brown, and light brownish gray silty clay loam

38 to 80 inches—mottled yellowish brown and light olive brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate in the upper part of the solum; moderately slow in the lower part of the solum
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderately slow
Depth to seasonal high water table: 1.5 to 2.5 feet during winter and early spring
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, and grain sorghum; small grains are subject to occasional flooding sometimes lasting for long duration
Management concerns:
• Seasonal high water table
• Occasional flooding sometimes lasting for long duration
• Erodibility in areas exceeding 2 percent slope
• Maintaining tilth and fertility
Management measures:
• Surface drains to remove or divert excess water
• Crop residue management and conservation tillage
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Occasional flooding sometimes lasting for long duration
• Maintaining tilth and fertility
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, red maple, green ash, and sweetgum
Management concerns:
• Moderate equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Selecting a site at a higher elevation above flood-prone areas
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Seasonal wetness
• Restricted permeability below about 2 feet
Corrective measures:
• Selecting a site at a higher elevation above flood-prone areas
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Cg—Collins silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Flood plains in the easternmost part of the county

Position on the landform: Along creeks and streams
Size of areas: 10 to 500 acres

Composition

- Collins and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting
- Falaya soils in similar positions
- Soils that are less acid throughout

Typical Profile

Surface layer:
0 to 12 inches—brown and dark yellowish brown silt loam

Subsoil:
12 to 19 inches—yellowish brown, mottled silt loam

Substratum:
19 to 42 inches—yellowish brown and dark yellowish brown, mottled silt loam
42 to 80 inches—mottled yellowish brown and light brownish gray silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 2 to 5 feet during late winter and early spring
Frequency of flooding: Occasional—very brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum; however, small grains and other winter cover crops may be damaged by very brief flooding
Management concerns:
- Seasonal high water table
- Flooding
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Surface drainage or tile drainage can be used to help remove excess water
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover, red clover, orchardgrass, and tall fescue
Management concerns:
- Seasonal wetness
- Maintaining fertility

Management measures:
- Grasses and legumes that can withstand limited wetness are best suited
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, green ash, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality
- Plant competition

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Building on better suited soils out of the flood plain
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- Building on higher elevation out of the flood plain
- Increasing the size of the absorption area
- Surface drains or curtain drains, where practical, to remove excess water

• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Ch—Commerce silt loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 30 to 250 acres

Composition

• Commerce and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Bardwell, Bondurant, Openlake, Phillippy, and Ware soils
• Soils similar to Commerce that have a mollic epipedon
• Small areas that have silty clay loam surface texture

Typical Profile

Surface layer:
0 to 11 inches—dark brown and dark grayish brown silt loam

Subsoil:
11 to 17 inches—dark grayish brown, mottled silt loam
17 to 25 inches—mottled dark grayish brown and gray silt loam
25 to 43 inches—dark gray, mottled silty clay loam

Substratum:
43 to 80 inches—dark grayish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1.5 to 4 feet of the surface during winter and early spring
Shrink-swell potential: None
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Suited
Adapted crops: Corn, soybeans, and small grains
Management concerns:
• Seasonal high water table
• Delayed plantings
• Maintaining tilth
Management measures:
• Maintenance of existing open drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, ladino clover, tall fescue
Management concerns:
• Seasonal wetness
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, green ash, and pecan
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
- Shrink-swell potential
- Wetness

Corrective measures:
- Adding extra reinforcement in foundations or building on concrete slab
- Surface drains or curtain drains to remove excess water
- Tile drains by footings
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Wetness
- Restricted permeability

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption field
- Special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Ck—Commerce silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Mississippi River flood plain in Madrid Bend
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 30 to 75 acres

Composition

- Commerce and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bardwell, Bondurant, Openlake, Phillippy, and Ware soils
- Soils similar to Commerce that have a mollic epipedon

Typical Profile

Surface layer:
0 to 11 inches—dark brown and dark grayish brown silt loam

Subsoil:
11 to 17 inches—dark grayish brown, mottled silt loam
17 to 25 inches—mottled dark grayish brown and gray silt loam
25 to 43 inches—dark gray, mottled silty clay loam

Substratum:
43 to 80 inches—dark grayish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1.5 to 4 feet of the surface during winter and early spring
Shrink-swell potential: Moderate in the upper 1.5 feet
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, and small grains
Management concerns:
- Seasonal high water table
- Flooding hazard
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, ladino clover, tall fescue
Management concerns:
- Seasonal wetness
- Flooding hazard
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, green ash, and pecan
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Cm—Commerce silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 500 acres

Composition

- Commerce and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Bardwell, Keyespoint, and Openlake soils
- Small areas that have silty clay loam surface texture

Typical Profile

Surface layer:
0 to 11 inches—dark brown and dark grayish brown silt loam

Subsoil:
11 to 17 inches—dark grayish brown, mottled silt loam
17 to 25 inches—mottled dark grayish brown and gray silt loam
25 to 43 inches—dark gray, mottled silty clay loam

Substratum:
43 to 80 inches—dark grayish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 1.5 to 4 feet of the surface during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Frequent—brief to very long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4w

Suitability: Suited
Adapted crops: Soybeans
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Seasonal high water table
• Delayed plantings
• Maintaining tilth
Management measures:
• Maintenance of existing open drainage system
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Not suited
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Wetness

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, green ash, and pecan
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
• Restricted permeability
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Cn—Commerce silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Mississippi River flood plain in Madrid Bend
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 30 to 75 acres

Composition

• Commerce and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Bardwell, Bondurant, Openlake, Phillippy, and Ware soils
• Soils similar to Commerce that have a mollic epipedon

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown silty clay loam

Subsoil:
11 to 17 inches—dark grayish brown, mottled silty clay loam
17 to 37 inches—mottled gray, dark gray, and dark grayish brown silt loam
37 to 43 inches—olive brown, mottled loam

Substratum:
43 to 80 inches—olive brown, mottled fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow

Depth to seasonal high water table: 1.5 to 4 feet of the surface during winter and early spring
Shrink-swell potential: Moderate in the upper 1.5 feet
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, and small grains
Management concerns:
- Seasonal high water table
- Flooding hazard
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, ladino clover, tall fescue
Management concerns:
- Seasonal wetness
- Flooding hazard
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, green ash, and pecan
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Co—Commerce silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 150 acres

Composition

- Commerce and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Bardwell, Keyespoint, and Openlake soils

Typical Profile

Surface layer:
0 to 6 inches—very dark grayish brown and dark grayish brown silty clay loam

Subsurface layer:
6 to 14 inches—dark grayish brown silty clay loam

Subsoil:
14 to 40 inches—dark grayish brown, mottled silt loam

Substratum:
40 to 80 inches—brown, mottled silt loam and fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 1.5 to 4 feet of the surface during winter and early spring
Shrink-swell potential: Moderate in the upper 1.5 feet
Frequency of flooding: Frequent—brief to very long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4w
Suitability: Suited
Adapted crops: Soybeans
Management concerns:
- Frequent flooding sometimes lasting for very long duration
- Seasonal high water table
- Delayed plantings
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Not suited
Management concerns:
- Frequent flooding sometimes lasting for very long duration
- Wetness

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, green ash, and pecan
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Cp—Convent silt loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain in the Lower Bottom
Position on the landform: Not limited depressional areas adjacent to the bluff
Size of areas: 5 to 150 acres

Composition

- Convent and similar soils: 85 to 90 percent
- Contrasting components of minor extent: 10 to 15 percent

Minor Components

Contrasting:
- Adler, Commerce, and Mhoon soils

Typical Profile

Surface layer:
0 to 10 inches—brown, mottled silt loam

Subsoil:
10 to 19 inches—olive brown, mottled silt loam
19 to 23 inches—mottled grayish brown and olive brown silt loam

Substratum:
23 to 45 inches—grayish brown and gray, mottled silt loam
45 to 80 inches—mottled very dark gray and dark gray silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 1.5 to 2 feet during winter and spring
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Seasonal wetness
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Surface drainage or tile drainage to remove excess water
• Minimizing tillage operations to reduce compaction
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover, red clover, orchardgrass, and tall fescue
Management concerns:
• Seasonal wetness
• Maintaining tilth and fertility
Management measures:
• Grasses and legumes that can withstand seasonal wetness are best suited
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, Eastern cottonwood, green ash, and sweetgum
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
• Plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
• Seasonal wetness
Corrective measures:
• Surface drains or curtain drains to remove excess water
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
Corrective measures:
• Increasing the size of the absorption area
• Surface drains or curtain drains, where practical, to remove excess water
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Somewhat limited
Limitations:
• Seasonal wetness
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Cr—Convent silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Flood plains of tributaries to the Mississippi River
Position on the landform: Not limited depressions along creeks and streams
Size of areas: 5 to 250 acres

Composition

- Convent and similar soils: 85 to 90 percent
- Contrasting components of minor extent: 10 to 15 percent

Minor Components

Contrasting:
- Adler, Dekoven, and Mhoon soils in similar positions

Typical Profile

Surface layer:
0 to 10 inches—brown, mottled silt loam

Subsoil:
10 to 19 inches—olive brown, mottled silt loam
19 to 23 inches—mottled grayish brown and olive brown silt loam

Substratum:
23 to 45 inches—grayish brown and gray, mottled silt loam
45 to 80 inches—mottled very dark gray, dark gray, and light brownish gray silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 1.5 to 2 feet during winter and spring
Frequency of flooding: Occasional—very brief to brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum; however, small grains may be damaged by brief flooding
Management concerns:
- Wetness
- Occasional flooding
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Surface drainage or tile drainage to remove excess water
- Minimizing tillage operations to reduce compaction
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
- Wetness
- Maintaining tilth and fertility

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, Eastern cottonwood, green ash, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Moderate seedling mortality
- Very limited plant competition

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Building on better suited soils out of the flood plain
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited

Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Cs—Convent silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Flood plains
Position on the landform: Nearly level to slightly depressional areas along tributaries to the Mississippi River
Size of areas: 5 to 30 acres

Composition

• Convent and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Dekoven, Kurk, and Mhoon soils

Typical Profile

Surface layer:
0 to 10 inches—brown, mottled silt loam

Subsoil:
10 to 19 inches—olive brown, mottled silt loam
19 to 23 inches—mottled grayish brown and olive brown silt loam

Substratum:
23 to 45 inches—grayish brown and gray, mottled silt loam
45 to 80 inches—mottled very dark gray, dark gray, and light brownish gray silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1.5 to 2 feet of the surface during winter and early spring
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Corn, soybeans, and grain sorghum; not suited to winter wheat
Management concerns:
• Seasonal high water table
• Delayed plantings
• Frequent flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Surface drainage or tile drainage to remove excess water
• Restricting tillage operations to minimize compaction
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Frequent flooding sometimes lasting for long duration
• Controlling weeds
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, Eastern cottonwood, green ash, and sweetgum
Management concerns:
• Frequent flooding sometimes lasting for long duration

- Equipment limitations due to seasonal wetness
- Plant competition

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Wetness
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Ct—Convent-Mhoon complex, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Flood plains
Position on the landform: Depressional areas along creeks and streams
Size of areas: 5 to 30 acres

Composition

- Convent and similar soils: 55 percent
- Mhoon and similar soils: 40 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Dekoven, Kurk, and Routon soils

Typical Profile

Convent

Surface layer:
0 to 10 inches—brown, mottled silt loam

Subsoil:
10 to 19 inches—olive brown, mottled silt loam
19 to 23 inches—mottled grayish brown and olive brown silt loam

Substratum:
23 to 45 inches—grayish brown and gray, mottled silt loam
45 to 80 inches—mottled very dark gray, dark gray, and light brownish gray silt loam

Mhoon

Surface layer:
0 to 5 inches—dark grayish brown, mottled silt loam
5 to 9 inches—mottled grayish brown and dark grayish brown silt loam

Subsoil:
9 to 22 inches—dark gray, mottled silt loam
22 to 33 inches—dark gray, mottled silty clay loam

Substratum:
33 to 80 inches—gray, mottled silty clay loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Convent—somewhat poorly drained; Mhoon—poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: Convent—from 1.5 to 2 feet of the surface during winter and early spring; Mhoon—within 1 foot of the surface during winter and early spring
Frequency of flooding: Occasional—brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: Convent—2w; Mhoon—3w
Suitability: Suited for areas adequately drained
Adapted crops: Corn, soybeans, and grain sorghum in areas that have been adequately drained; generally not suited to winter wheat
Management concerns:
- Seasonal high water table

- Delayed plantings
- Occasional flooding
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Maintenance of existing drainage system
- Reducing tillage operations to minimize compaction
- Mhoon—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
- Wetness
- Flooding
- Maintaining tilth and fertility

Management measures:
- Mhoon—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, Eastern cottonwood, green ash, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Convent—plant competition
- Mhoon—seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- Mhoon—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- Building on better suited soils out of the flood plain
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Mhoon—low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- Mhoon—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Engineering, Building Site Development Section

Cu—Convent-Mhoon complex, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Flood plains
Position on the landform: Depressional areas along major tributaries to the Mississippi River
Size of areas: 5 to 250 acres

Composition

- Convent and similar soils: 55 percent
- Mhoon and similar soils: 40 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Dekoven, Kurk, and Routon soils

Typical Profile

Convent

Surface layer:
0 to 10 inches—brown, mottled silt loam

Subsoil:
10 to 19 inches—olive brown, mottled silt loam
19 to 23 inches—mottled grayish brown and olive brown silt loam

Substratum:
23 to 45 inches—grayish brown and gray, mottled silt loam

45 to 80 inches—mottled very dark gray, dark gray, and light brownish gray silt loam

Mhoon

Surface layer:
0 to 5 inches—dark grayish brown, mottled silt loam
5 to 9 inches—mottled grayish brown and dark grayish brown silt loam

Subsoil:
9 to 22 inches—dark gray, mottled silt loam
22 to 33 inches—dark gray, mottled silty clay loam

Substratum:
33 to 80 inches—gray, mottled silty clay loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Convent—somewhat poorly drained; Mhoon—poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: Convent—from 1.5 to 2 feet of the surface during winter and early spring; Mhoon—within 1 foot of the surface during winter and early spring
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: Convent—3w; Mhoon—3w
Suitability: Moderately suited
Adapted crops: Corn, soybeans, and grain sorghum in areas that have been adequately drained; not suited to winter wheat
Management concerns:
• Seasonal high water table
• Delayed plantings
• Frequent flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• Reducing tillage operations to minimize compaction
• Mhoon—compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Frequent flooding sometimes lasting for long duration
• Maintaining tilth and fertility
Management measures:
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, Eastern cottonwood, green ash, and sweetgum
Management concerns:
• Frequent flooding sometimes lasting for long duration
• Equipment limitations due to seasonal wetness
• Convent—plant competition
• Mhoon—seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited

Limitations:
• Flooding hazard
• Mhoon—low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• Mhoon—Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Engineering, Building Site Development Section

Cv—Crevasse loamy fine sand, 0 to 3 percent slopes, occasionally flooded

Setting

Major landform: Mississippi River flood plain in Madrid Bend
Position on the landform: Riverbanks, flood plain splays, and point bars at greater than 290 feet elevation
Size of areas: 15 to 500 acres

Composition

• Crevasse and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Crevasse soils with fine sand or sand surface texture
• Robinsonville soils
• Areas along riverbanks with slopes ranging from 4 to 15 percent

Typical Profile

Surface layer:
0 to 4 inches—very dark grayish brown loamy fine sand

Subsurface:
4 to 7 inches—dark brown loamy fine sand

Substratum:
7 to 16 inches—brown fine sand
16 to 80 inches—pale brown sand

Soil Properties and Qualities

Depth: Very deep
Drainage class: Excessively drained
Organic matter content: Low
Permeability: Rapid
Available water capacity: Low
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Forestland and wildlife habitat

Cropland

Land capability subclass: 6s
Suitability: Poorly suited
Adapted crops: Soybeans
Management concerns:
• Flooding hazard
• Very limited droughtiness
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Management concerns:
• Flooding sometimes lasting for long duration
• Very limited droughtiness
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Moderately suited
Adapted species: Eastern cottonwood, American sycamore, American elm, sugarberry, and sweetgum
Management concerns:
• Seedling mortality due to droughtiness
Management measures:
• Planting seedlings during late fall or early winter to ensure adequate moisture for survival
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited

Limitations:
- Flooding hazard
- Groundwater pollution due to poor filtering capacity

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Cw—Crevasse loamy fine sand, 0 to 3 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Riverbanks, flood plain splays, and point bars
Size of areas: 15 to 250 acres

Composition

- Crevasse and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Crevasse and Robinsonville soils
- Soils with fine sand or sand surface texture
- Areas along riverbanks with slopes ranging from 4 to 15 percent

Typical Profile

Surface layer:
0 to 4 inches—very dark grayish brown loamy fine sand

Subsurface:
4 to 7 inches—dark brown loamy fine sand

Substratum:
7 to 16 inches—brown fine sand
16 to 80 inches—pale brown sand

Soil Properties and Qualities

Depth: Very deep
Drainage class: Excessively drained
Organic matter content: Low
Permeability: Rapid
Available water capacity: Low
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Forestland and wildlife habitat

Cropland

Land capability subclass: 6s
Suitability: Poorly suited
Adapted crops: Soybeans
Management concerns:
- Flooding hazard
- Very limited droughtiness

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Management concerns:
- Flooding sometimes lasting for long duration
- Very limited droughtiness
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Moderately suited
Adapted species: Eastern cottonwood, American sycamore, American elm, black willow, and sugarberry
Management concerns:
- Seedling mortality due to droughtiness

Management measures:
- Planting seedlings during late fall or early winter to ensure adequate moisture for survival
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Groundwater pollution due to poor filtering capacity
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Cx—Crevasse silt loam, 0 to 3 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain splay in the Upper Bottom
Position on the landform: Nearly level to slightly depressional areas where the river has cut and deposited large volumes of sand greater than 5 feet in thickness
Size of areas: 250 acres

Composition

• Crevasse and similar soils: 95 percent
• Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
• Commerce and Robinsonville soils

Typical Profile

Surface layer:
0 to 4 inches—very dark grayish brown silt loam

Subsurface:
4 to 7 inches—very dark grayish brown loam

Substratum:
7 to 16 inches—brown loamy sand
16 to 80 inches—light brownish gray sand

Soil Properties and Qualities

Depth: Very deep
Drainage class: Excessively drained
Organic matter content: Low
Permeability: Rapid
Available water capacity: Low
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Forestland and wildlife habitat

Cropland

Land capability subclass: 4s
Suitability: Poorly suited
Adapted crops: Soybeans
Management concerns:
• Flooding hazard
• Very limited droughtiness
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Management concerns:
• Flooding sometimes lasting for long duration
• Very limited droughtiness
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Moderately suited
Adapted species: Eastern cottonwood, American sycamore, American elm, sugarberry, and sweetgum
Management concerns:
• Seedling mortality due to droughtiness
Management measures:
• Planting seedlings during late fall or early winter to ensure adequate moisture for survival
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard

Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Groundwater pollution due to poor filtering capacity
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

De—Dekoven silt loam, drained, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Flood plains
Position on the landform: Nearly level areas along creeks and streams
Size of areas: 5 to 30 acres

Composition

• Dekoven and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Small areas of Convent, Kurk, and Mhoon soils
• Soils similar to Dekoven with a mollic epipedon more than 24 inches thick
• Soils with a brown overwash surface layer from 6 to 12 inches thick
• Small, depressional undrained areas

Typical Profile

Surface layer:
0 to 7 inches—very dark grayish brown silt loam

Subsurface layer:
7 to 20 inches—very dark gray, mottled silt loam

Subsoil:
20 to 27 inches—dark grayish brown, mottled silty clay loam
27 to 44 inches—dark gray, mottled silt loam
44 to 62 inches—mottled grayish brown and light brownish gray silt loam

Substratum:
62 to 80 inches—dark gray and light brownish gray, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and early spring
Frequency of flooding: Occasional—brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, and grain sorghum; generally not suited to winter wheat
Management concerns:
• Seasonal high water table
• Delayed plantings
• Occasional flooding
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Controlling weeds
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, red maple, green ash, and sweetgum

Management concerns:
• Equipment limitations due to seasonal wetness
• Plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Building on better suited soils out of the flood plain
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Dk—Dekoven silt loam, drained, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Flood plains
Position on the landform: Nearly level areas along creeks and streams
Size of areas: 5 to 30 acres

Composition

• Dekoven and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Small areas of Convent, Kurk, and Mhoon soils
• Soils similar to Dekoven with a mollic epipedon more than 24 inches thick
• Soils with a brown overwash surface layer from 6 to 12 inches thick
• Small, depressional undrained areas

Typical Profile

Surface layer:
0 to 7 inches—very dark grayish brown silt loam

Subsurface layer:
7 to 20 inches—very dark gray, mottled silt loam

Subsoil:
20 to 27 inches—dark grayish brown, mottled silty clay loam
27 to 44 inches—dark gray, mottled silt loam
44 to 62 inches—mottled grayish brown and light brownish gray silt loam

Substratum:
62 to 80 inches—dark gray and light brownish gray, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and early spring
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Corn, soybeans, and grain sorghum; not suited to winter wheat
Management concerns:
• Seasonal high water table
• Delayed plantings
• Frequent flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility

Management measures:
• Maintenance of existing drainage system
• Limiting the number of passes with tillage equipment
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Frequent flooding sometimes lasting for long duration
• Controlling weeds
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, red maple, green ash, and sweetgum
Management concerns:
• Frequent flooding sometimes lasting for long duration
• Equipment limitations due to seasonal wetness
• Plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Do—Dekoven silt loam, drained, 0 to 2 percent slopes, occasionally flooded, overwash

Setting

Major landform: Flood plains
Position on the landform: Nearly level to slightly depressional areas along creeks and streams
Size of areas: 5 to 30 acres

Composition

• Dekoven overwash and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Small areas of Convent and Kurk soils
• Small areas that do not have the surface layer of overwash

Typical Profile

Surface layer:
0 to 14 inches—brown silt loam

Subsurface layer:
14 to 34 inches—very dark gray and very dark grayish brown, mottled silt loam

Subsoil:
34 to 38 inches—mottled dark grayish brown, dark gray, and olive brown silty clay loam
38 to 57 inches—mottled grayish brown and light brownish gray silt loam
57 to 78 inches—mottled grayish brown and light olive brown silt loam

Substratum:
78 to 80 inches—mottled grayish brown and light brownish gray silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained

Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and early spring
Frequency of flooding: Occasional—brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, and grain sorghum; generally not suited to winter wheat
Management concerns:
• Seasonal high water table
• Delayed plantings
• Occasional flooding (fig. 8)
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Controlling weeds
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, red maple, green ash, and sweetgum

Figure 8.—Spring flooding in some years can delay planting in areas of Dekoven silt loam, drained, 0 to 2 percent slopes, occasionally flooded, overwash.

Management concerns:
• Equipment limitations due to seasonal wetness
• Plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Building on better suited soils out of the flood plain
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Dv—Dekoven silt loam, drained, 0 to 2 percent slopes, frequently flooded, overwash

Setting

Major landform: Flood plains
Position on the landform: Nearly level areas along creeks and streams
Size of areas: 5 to 30 acres

Composition

• Dekoven overwash and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Small areas of Convent and Kurk soils
• Small areas that do not have the surface layer of overwash

Typical Profile

Surface layer:
0 to 14 inches—brown silt loam

Subsurface layer:
14 to 34 inches—very dark gray and very dark grayish brown, mottled silt loam

Subsoil:
34 to 38 inches—mottled dark grayish brown, dark gray, and olive brown silty clay loam
38 to 57 inches—mottled grayish brown and light brownish gray silt loam
57 to 78 inches—mottled grayish brown and light olive brown silt loam

Substratum:
78 to 80 inches—mottled grayish brown and light brownish gray silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: High
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and early spring
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Corn, soybeans, and grain sorghum; not suited to winter wheat
Management concerns:
• Seasonal high water table
• Delayed plantings
• Frequent flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility

Management measures:
• Maintenance of existing drainage system
• Limiting the number of passes with tillage equipment
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Frequent flooding sometimes lasting for long duration
• Controlling weeds
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, American sycamore, red maple, green ash, and sweetgum
Management concerns:
• Frequent flooding sometimes lasting for long duration
• Equipment limitations due to seasonal wetness
• Plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Fa—Falaya silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Flood plains in the easternmost part of the county
Position on the landform: Slightly depressional areas along creeks and streams
Size of areas: 5 to 100 acres

Composition

• Falaya and similar soils: 85 to 90 percent
• Contrasting components of minor extent: 10 to 15 percent

Minor Components

Contrasting:
• Collins and Waverly soils in similar positions
• Soils that are less acid throughout

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 14 inches—brown, mottled silt loam
14 to 24 inches—light brownish gray, mottled silt loam

Substratum:
24 to 52 inches—light brownish gray and gray, mottled silt loam
52 to 80 inches—mottled brown and light brownish gray silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet during winter and spring

Frequency of flooding: Occasional—very brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum; however, small grains and winter cover crops may be damaged by very brief flooding
Management concerns:
- Wetness
- Flooding
- Maintaining tilth and fertility

Management measures:
- Surface drainage or tile drainage to remove excess water
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
- Wetness
- Maintaining tilth and fertility

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, red maple, green ash, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Moderate seedling mortality
- Very limited plant competition

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- Building on better suited soils out of the flood plain
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Fc—Falaya-Waverly complex, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Flood plains in the easternmost part of the county
Position on the landform: Depressional areas along creeks and streams
Size of areas: 5 to 30 acres

Composition

- Falaya and similar soils: 55 percent
- Waverly and similar soils: 40 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Small areas of Collins soils in slightly higher positions
- Soils that are less acid throughout

Typical Profile

Falaya

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 14 inches—brown, mottled silt loam
14 to 24 inches—light brownish gray, mottled silt loam

Substratum:
24 to 52 inches—light brownish gray and gray, mottled silt loam
52 to 80 inches—mottled brown and light brownish gray silt loam

Waverly

Surface layer:
0 to 10 inches—brown and grayish brown, mottled silt loam

Subsoil:
10 to 54 inches—light brownish gray and gray, mottled silt loam

Substratum:
54 to 80 inches—gray, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Falaya—somewhat poorly drained; Waverly—poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: Falaya—1 foot to 2 feet below the surface during winter and early spring; Waverly—within 1 foot of the surface during winter and early spring
Frequency of flooding: Occasional—brief duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: Falaya—2w; Waverly—3w
Suitability: Suited for areas adequately drained
Adapted crops: Corn, soybeans, and grain sorghum in areas that have been adequately drained; generally not suited to winter wheat
Management concerns:
- Seasonal high water table
- Delayed plantings
- Occasional flooding
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Maintenance of existing drainage system
- Reducing tillage operations to minimize compaction
- Waverly—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
- Wetness
- Flooding
- Maintaining tilth and fertility

Management measures:
- Waverly—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, red maple, green ash, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Falaya—plant competition
- Waverly—seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- Waverly—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- Building on better suited soils out of the flood plain
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- Selecting a site at a higher elevation above flood-prone areas
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited

Limitations:
- Flooding hazard
- Waverly—wetness

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- Waverly—compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Engineering, Building Site Development Section

FnA—Feliciana silt loam, 0 to 2 percent slopes

Setting

Major landform: Uplands
Position on the landform: Nearly level ridgetops
Size of areas: 5 to 25 acres

Composition

- Feliciana and similar soils: 95 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Loring soils in similar positions

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 12 inches—strong brown silty clay loam
12 to 35 inches—strong brown silt loam
35 to 80 inches—strong brown and brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability class: 1
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Maintaining tilth and fertility

Management measures:
- Crop residue management and conservation tillage
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Plant competition

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
- Restricted permeability

Corrective measures:
- Increasing the size of the absorption area
- Surface drains or curtain drains, where practical, to remove excess water
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

FnB—Feliciana silt loam, 2 to 6 percent slopes

Setting

Major landform: Uplands
Position on the landform: Gently sloping narrow ridgetops
Size of areas: 5 to 250 acres

Composition

- Feliciana and similar soils: 95 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Loring soils in similar positions
- Small eroded areas

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 12 inches—brown silty clay loam
12 to 35 inches—strong brown silt loam
35 to 80 inches—strong brown and brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Moderate erosion hazard
- Maintaining tilth and fertility

Management measures:
- Grassed waterways along drainageways
- Crop residue management and conservation tillage
- Intensifying measures as slope increases
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Plant competition

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
- Restricted permeability

Corrective measures:
- Increasing the size of the absorption area
- Surface drains or curtain drains, where practical, to remove excess water
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

FnB2—Feliciana silt loam, 2 to 6 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Gently sloping narrow ridgetops
Size of areas: 5 to 250 acres

Composition

- Feliciana and similar soils: 95 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Loring soils in similar positions
- Non-eroded areas

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 17 inches—strong brown silty clay loam
17 to 80 inches—brown and strong brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Moderate erosion hazard
- Maintaining tilth and fertility

Management measures:
- Grassed waterways along drainageways
- Crop residue management and conservation tillage
- Intensifying measures as slope increases
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Plant competition

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
- Restricted permeability

Corrective measures:
- Increasing the size of the absorption area
- Surface drains or curtain drains, where practical, to remove excess water
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

FnC2—Feliciana silt loam, 6 to 12 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Sloping, narrow ridgetops and upper shoulders of side slopes
Size of areas: 5 to 75 acres

Composition

- Feliciana and similar soils: 95 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Loring soils in similar positions
- Small, very limitedly eroded areas

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 17 inches—strong brown silty clay loam
17 to 80 inches—brown and strong brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Severe erosion hazard
- Maintaining tilth and fertility

Management measures:
- Grassed waterways along drainageways
- Crop residue management and conservation tillage
- Intensifying measures as slope increases
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Plant competition

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
- Slope

Corrective measures:
- Proper engineering design, site preparation, and construction
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Moderate
Limitations:
- Restricted permeability
- Slope

Corrective measures:
- Increasing the size of the absorption area
- Surface drains or curtain drains, where practical, to remove excess water
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

FnC3—Feliciana silt loam, 6 to 12 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Side slopes
Size of areas: 5 to 75 acres

Composition

- Feliciana and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Loring soils in similar positions
- Small areas with only moderate erosion or not limited for use because of erosion

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Transitional layer:
3 to 6 inches—dark yellowish brown silt loam

Subsoil:
6 to 15 inches—strong brown silty clay loam
15 to 80 inches—strong brown and brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4e
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Severe erosion hazard
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Plant competition
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
• Slope
Corrective measures:
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Restricted permeability
• Slope
Corrective measures:
• Increasing the size of the absorption area
• Surface drains or curtain drains, where practical, to remove excess water
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

FnD3—Feliciana silt loam, 12 to 20 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Side slopes
Size of areas: 20 to 175 acres

Composition

• Feliciana and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Loring soils in similar positions
• Small areas with only moderate erosion

Typical Profile

Surface layer:
0 to 4 inches—brown and strong brown silt loam

Subsoil:
4 to 12 inches—strong brown silty clay loam
12 to 80 inches—strong brown and brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Pasture

Cropland

Land capability subclass: 6e
Suitability: Not suited
Management concerns:
- Slope
- Severe erosion hazard

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
- Severe erosion hazard
- Maintaining desired species composition

Management measures:
- Frequent pasture renovation
- Maximizing the forage efficiency with proper stocking rates, pasture rotation, and deferred grazing
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Plant competition

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Slope

Corrective measures:
- Proper engineering design, site preparation, and construction
- Utilizing adjacent areas with less slope
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Slope

Corrective measures:
- Utilizing adjacent areas with less slope
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Slope
- Low strength

Corrective measures:
- Proper engineering design, site preparation, and construction
- Utilizing adjacent areas with less slope
- See Use and Management of the Soils, Engineering, Building Site Development Section

FnE3—Feliciana silt loam, 20 to 30 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Side slopes
Size of areas: 20 to 175 acres

Composition

- Feliciana and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Small areas with only moderate erosion

Typical Profile

Surface layer:
0 to 4 inches—brown and strong brown silt loam

Subsoil:
4 to 12 inches—strong brown silty clay loam
12 to 80 inches—strong brown and brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Pasture

Cropland

Land capability subclass: 7e
Suitability: Not suited
Management concerns:
- Slope
- Severe erosion hazard

Pasture and Forage

Suitability: Pasture—suited; forage—poorly suited
Adapted plants: White clover and tall fescue
Management concerns:
- Severe erosion hazard
- Maintaining desired species composition

Management measures:
- Frequent pasture renovation
- Maximizing the forage efficiency with proper stocking rates, pasture rotation, and deferred grazing
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Equipment limitations due to slope

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Slope

Corrective measures:
- Utilizing adjacent areas with less slope
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Slope

Corrective measures:
- Utilizing adjacent areas with less slope
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Slope
- Low strength

Corrective measures:
- Design to conform to natural contour
- Utilizing adjacent areas with less slope
- See Use and Management of the Soils, Engineering, Building Site Development Section

GrA—Grenada silt loam, 0 to 2 percent slopes

Setting

Major landform: Uplands
Position on the landform: Nearly level, broad summits
Size of areas: 5 to 75 acres

Composition

- Grenada and similar soils: 80 to 85 percent
- Contrasting components of minor extent: 15 to 20 percent

Minor Components

Contrasting:
- Small areas of Calloway soils in similar positions
- Small areas with slopes ranging to 4 percent

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam

Transitional layer:
7 to 13 inches—yellowish brown silt loam

Subsoil:
13 to 24 inches—yellowish brown, mottled silt loam

24 to 30 inches—mottled light brownish gray silt loam and yellowish brown silty clay loam
30 to 42 inches—a fragipan consisting of mottled strong brown and light brownish gray silt loam
42 to 80 inches—a fragipan consisting of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Moderately slow
Depth to seasonal high water table: 1.8 to 2.5 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Seasonal wetness
• Fragipan
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Crop residue management and conservation tillage
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Maintaining tilth and fertility
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Seasonal wetness
Corrective measures:
• Surface drains or curtain drains to remove excess water
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Slow permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

GrB—Grenada silt loam, 2 to 6 percent slopes

Setting

Major landform: Uplands
Position on the landform: Gently sloping, broad summits of interfluves
Size of areas: 5 to 200 acres

Composition

• Grenada and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Small areas of Adler and Convent soils occupying narrow drainageways
- Small areas of Calloway soils in slightly concave positions

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam

Transitional layer:
7 to 13 inches—yellowish brown silt loam

Subsoil:
13 to 24 inches—yellowish brown, mottled silt loam
24 to 30 inches—mottled light brownish gray silt loam and yellowish brown silty clay loam
30 to 42 inches—a fragipan consisting of mottled strong brown and light brownish gray silt loam
42 to 80 inches—a fragipan consisting of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.8 to 2.5 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Moderate erosion hazard
- Seasonal high water table
- Fragipan
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Grassed waterways along drainageways
- Crop residue management and conservation tillage
- Intensifying measures as slope increases
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- Seasonal wetness
- Maintaining tilth and fertility
- Alfalfa stands become sparse after 2 to 3 years due to seasonal wetness and moderate rooting depth

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Equipment limitations due to seasonal wetness

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
- Seasonal wetness due to the fragipan

Corrective measures:
- Surface drains or curtain drains to remove excess water
- Tile drains by footings
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Seasonal wetness
- Slow permeability due to the fragipan

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption area, and in some instances, special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

GrB2—Grenada silt loam, 2 to 6 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Gently sloping, broad summits of interfluves
Size of areas: 5 to 200 acres

Composition

• Grenada and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Small areas of Adler and Convent soils occupying narrow drainageways
• Small areas of Calloway soils in slightly concave positions
• Areas that are very limitedly eroded

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 13 inches—yellowish brown silt loam
13 to 20 inches—yellowish brown, mottled silt loam
20 to 26 inches—mottled light brownish gray silt loam and yellowish brown silty clay loam
26 to 38 inches—a fragipan of mottled strong brown and light brownish gray silt loam
38 to 80 inches—a fragipan consisting of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.8 to 2.5 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Moderate erosion hazard
• Seasonal high water table
• Fragipan
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Maintaining tilth and fertility
• Alfalfa stands become sparse after 2 to 3 years due to seasonal wetness and moderate rooting depth
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited

Limitations:
• Seasonal wetness due to the fragipan
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Slow permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

GrB3—Grenada silt loam, 4 to 6 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Gently sloping, convex shoulders and side slopes
Size of areas: 5 to 75 acres

Composition

• Grenada and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Small areas of Adler and Convent soils occupying narrow drainageways
• Small areas of Calloway soils in slightly concave positions
• Areas that are not very limitedly eroded

Typical Profile

Surface layer:
0 to 4 inches—brown silt loam

Subsoil:
4 to 10 inches—yellowish brown silt loam
10 to 16 inches—yellowish brown, mottled silt loam
16 to 20 inches—mottled light brownish gray silt loam and yellowish brown silty clay loam
20 to 32 inches—a fragipan consisting of mottled strong brown and light brownish gray silt loam
32 to 80 inches—a fragipan consisting of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.5 to 2 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3e
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Severe erosion hazard
• Seasonal high water table
• Shallow depth to the fragipan
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness

• Maintaining tilth and fertility
• Alfalfa stands become sparse after 2 to 3 years due to seasonal wetness and moderate rooting depth
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
• Seasonal wetness due to the fragipan
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Slow permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in many instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
• Depth to fragipan
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

GrC2—Grenada silt loam, 6 to 12 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Sloping, convex shoulders and side slopes
Size of areas: 5 to 200 acres

Composition

• Grenada and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Small areas of Adler and Convent soils occupying narrow drainageways
• Small areas of Calloway soils in slightly concave positions
• Areas that are very limitedly eroded

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 13 inches—yellowish brown silt loam
13 to 20 inches—yellowish brown, mottled silt loam
20 to 26 inches—mottled light brownish gray silt loam and yellowish brown silty clay loam
26 to 38 inches—a fragipan consisting of mottled strong brown and light brownish gray silt loam
38 to 80 inches—a fragipan consisting of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.8 to 2.5 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3e

Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Severe erosion hazard
- Seasonal high water table
- Fragipan
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Grassed waterways along drainageways
- Crop residue management and conservation tillage
- Intensifying measures as slope increases
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- Seasonal wetness
- Maintaining tilth and fertility
- Alfalfa stands become sparse after 2 to 3 years due to seasonal wetness and moderate rooting depth

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Equipment limitations due to seasonal wetness

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
- Seasonal wetness due to the fragipan
- Slope

Corrective measures:
- Surface drains or curtain drains to remove excess water
- Tile drains by footings
- Proper engineering design, site preparation, and construction
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Seasonal wetness
- Slow permeability due to the fragipan

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption area, and in some instances, special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

GrC3—Grenada silt loam, 6 to 12 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Sloping, convex shoulders and side slopes
Size of areas: 5 to 75 acres

Composition

- Grenada and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Small areas of Adler and Convent soils occupying narrow drainageways
- Small areas of Calloway soils in slightly concave positions
- Areas that are not very limitedly eroded

Typical Profile

Surface layer:
0 to 4 inches—brown silt loam

Subsoil:
4 to 10 inches—yellowish brown silt loam
10 to 16 inches—yellowish brown, mottled silt loam

16 to 20 inches—mottled light brownish gray silt loam and yellowish brown silty clay loam
20 to 32 inches—a fragipan consisting of mottled strong brown and light brownish gray silt loam
32 to 80 inches—a fragipan consisting of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.5 to 2 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4e
Suitability: Moderately suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Severe erosion hazard
- Seasonal high water table
- Shallow depth to the fragipan
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Grassed waterways along drainageways
- Crop residue management and conservation tillage
- Intensifying measures as slope increases
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
- Seasonal wetness
- Maintaining tilth and fertility
- Alfalfa stands become sparse after 2 to 3 years due to seasonal wetness and moderate rooting depth

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Equipment limitations due to seasonal wetness

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
- Seasonal wetness due to the fragipan
- Slope

Corrective measures:
- Surface drains or curtain drains to remove excess water
- Tile drains by footings
- Proper engineering design, site preparation, and construction
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Seasonal wetness
- Slow permeability due to the fragipan

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption area, and in many instances, special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength
- Depth to fragipan

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

GuF—Gullied land-Memphis complex, 30 to 50 percent slopes

Setting

Major landform: Uplands
Position on the landform: Very steep side slopes of the highly dissected Mississippi River bluff. Gullied land is a miscellaneous land type consisting of areas where erosion has cut a network of V-shaped or U-shaped gullies that are as much as 200 feet wide and 75 feet deep; Memphis soils occur as narrow remnants scattered between the gullies. The two components occur as areas so intricately mixed or so small that mapping them separately is not practical at the scale used.
Size of areas: 20 to 75 acres

Composition

- Gullied land and similar soils: 60 percent
- Memphis and similar soils: 35 percent
- Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
- Natchez soils
- Areas that have geologic clay, mudstone, siltstone, and/or sandstone below 3.5 feet depth with outcropping in places
- Areas with slopes ranging to 60 percent

Typical Profile

Memphis

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 17 inches—strong brown silt loam
17 to 80 inches—brown and strong brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Very rapid
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Wasteland

Cropland

Land capability subclass: Gullied land—7e; Memphis—7e
Suitability: Not suited
Management concerns:
- Slope
- Severe erosion hazard

Pasture and Forage

Suitability: Not suited
Management concerns:
- Slope
- Severe erosion hazard
- Vegetative establishment and maintenance; most areas are overgrown with kudzu

Forestland

Suitability: Poorly suited
Management concerns:
- Difficulty establishing, maintaining, and harvesting timber due to slope and instability

Management measures:
- Attempt to establish such species as loblolly pine to foster soil stability
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Slope
- Soil instability

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Slope

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Slope
- Low strength

Corrective measures:
- Extensive onsite investigation before conducting any reshaping, grading, or smoothing operations
- See Use and Management of the Soils, Engineering, Building Site Development Section

Ke—Keyespoint silty clay loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 250 acres

Composition

- Keyespoint and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bondurant, Bowdre, Commerce, and Openlake soils
- Small areas that have silty clay surface texture

Similar:
- Soils that are more acid in the subsoil

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown and dark grayish brown, mottled silty clay loam

Subsoil:
8 to 24 inches—dark grayish brown, mottled silty clay
24 to 36 inches—dark gray, mottled silty clay loam
36 to 44 inches—brown and dark gray loam

Substratum:
44 to 54 inches—brown, mottled fine sandy loam
54 to 80 inches—brown fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow in the upper 2 feet; moderate below 2 feet
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and spring
Shrink-swell potential: High in the upper 2 feet
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
- Narrow range of workability due to high clay content
- Seasonal high water table
- Delayed plantings for corn
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
- Wetness
- Controlling weeds
- Maintaining tilth

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- High shrink-swell potential in the upper 2 feet
- Wetness

Corrective measures:
- Adding extra reinforcement in foundations or building on concrete slab
- Surface drains or curtain drains to remove excess water

• Tile drains by footings
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Wetness
• Very slow permeability in the upper 2 feet
Corrective measures:
• Curtain drains to remove excess water
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• High shrink-swell potential
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Kf—Keyespoint silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional slackwater areas
Size of areas: 50 to 500 acres

Composition

• Keyespoint and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Commerce and Openlake soils
• Small areas that have silty clay surface texture

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown and dark grayish brown, mottled silty clay loam

Subsoil:
8 to 24 inches—dark grayish brown, mottled silty clay
24 to 36 inches—dark gray, mottled silty clay loam
36 to 44 inches—brown and dark gray loam

Substratum:
44 to 54 inches—brown, mottled fine sandy loam
54 to 80 inches—brown fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow in the upper 2 feet; moderate below 2 feet
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and spring
Shrink-swell potential: High in the upper 2 feet
Frequency of flooding: Frequent—brief to very long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4w
Suitability: Suited
Adapted crops: Soybeans
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Narrow range of workability due to high clay content
• Seasonal high water table
• Delayed plantings
• Maintaining tilth
Management measures:
• Maintenance of existing open drainage system
• Restricting tillage to periods when the soil is moist, and not too wet or too dry
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Not suited
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Wetness

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum

Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential in the upper 2 feet
- Wetness

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

KrA—Kurk silt loam, 0 to 2 percent slopes

Setting

Major landform: Loess uplands
Position on the landform: Nearly level to slightly concave areas of stream terraces
Size of areas: 10 to 75 acres

Composition

- Kurk and similar soils: 80 percent
- Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
- Center and Routon soils in similar positions
- Convent and Dekoven soils along drainageways
- Soils similar to Kurk that are strongly alkaline or very strongly alkaline throughout

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown, mottled silt loam

Transitional layer:
8 to 15 inches—yellowish brown, mottled silt loam

Subsoil:
15 to 27 inches—mottled light brownish gray and grayish brown silty clay loam
27 to 42 inches—light brownish gray, mottled silty clay loam
42 to 65 inches—grayish brown, mottled silt loam
65 to 80 inches—mottled grayish brown and yellowish brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate in the upper part of the solum; slow in the lower part of the solum
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1.2 to 1.7 feet during winter and early spring
Frequency of flooding: None (a few of the lowest lying areas may experience rare flooding)

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum in areas that have been adequately drained
Management concerns:
- Seasonal high water table
- Delayed plantings
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Crop residue management and conservation tillage

• Surface drains to remove and/or divert excess water
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Maintaining tilth and fertility
Management measures:
• Utilizing forage species tolerant of seasonal wetness
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, red maple, green ash, and sweetgum
Management concerns:
• Moderate equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Wetness
Corrective measures:
• Surface drains or curtain drains to remove excess water
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Wetness
• Slow permeability
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area
• Special design or alternate system may be needed
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

KsA—Kurk silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Stream terraces along Bayou de Chien and near the mouth of Mud Creek
Position on the landform: Nearly level to slightly concave, depressional areas
Size of areas: 10 to 75 acres

Composition

• Kurk and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Center and Routon soils in similar positions
• Convent and Dekoven soils along drainageways
• Soils similar to Kurk that are strongly alkaline or very strongly alkaline throughout

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown, mottled silt loam

Transitional layer:
8 to 15 inches—yellowish brown, mottled silt loam

Subsoil:
15 to 27 inches—mottled light brownish gray and grayish brown silty clay loam
27 to 42 inches—light brownish gray, mottled silty clay loam
42 to 65 inches—grayish brown, mottled silt loam
65 to 80 inches—mottled grayish brown and yellowish brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate in the upper part of the solum; slow in the lower part of the solum
Available water capacity: High

Depth of root zone: Deep in summer, but restricted by the water table in winter and spring
Surface runoff: Slow
Depth to seasonal high water table: 1.2 to 1.7 feet during winter and early spring
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Suited
Adapted crops: Corn, soybeans, and grain sorghum in areas that have been adequately drained; small grains are subject to occasional flooding
Management concerns:
• Seasonal high water table
• Delayed plantings
• Occasional flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Surface drains to remove and/or divert excess water
• Crop residue management and conservation tillage
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Occasional flooding sometimes lasting for long duration
• Maintaining tilth and fertility
Management measures:
• Utilizing forage species tolerant of seasonal wetness
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, red maple, green ash, and sweetgum
Management concerns:
• Moderate equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Selecting a site at a higher elevation above flood-prone areas
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
• Restricted permeability
Corrective measures:
• Selecting a site at a higher elevation above flood-prone areas
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

KuA—Kurk silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Stream terraces along Bayou de Chien and near the mouth of Mud Creek
Position on the landform: Nearly level to slightly concave areas
Size of areas: 10 to 40 acres

Composition

• Kurk and similar soils: 75 to 80 percent
• Contrasting components of minor extent: 20 to 25 percent

Minor Components

Contrasting:
• Convent and Dekoven soils along drainageways
• Routon soils in similar positions
• Soils similar to Kurk that are strongly alkaline or very strongly alkaline throughout

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown, mottled silt loam

Transitional layer:
8 to 15 inches—yellowish brown, mottled silt loam

Subsoil:
15 to 27 inches—mottled light brownish gray and grayish brown silty clay loam
27 to 42 inches—light brownish gray, mottled silty clay loam
42 to 65 inches—grayish brown, mottled silt loam
65 to 80 inches—mottled grayish brown and yellowish brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Moderate in the upper part of the solum; slow in the lower part of the solum
Available water capacity: High
Depth of root zone: Deep in summer, but restricted by the water table in winter and spring
Surface runoff: Slow
Depth to seasonal high water table: 1.2 to 1.7 feet during winter and early spring
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Suited
Adapted crops: Corn, soybeans, and grain sorghum in areas that have been adequately drained; small grains are generally not suited due to the flooding hazard
Management concerns:
• Seasonal high water table
• Delayed plantings
• Frequent flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Surface drains to remove and/or divert excess water
• Crop residue management and conservation tillage
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Seasonal wetness
• Frequent flooding sometimes lasting for long duration
• Maintaining tilth and fertility
Management measures:
• Utilizing forage species tolerant of seasonal wetness
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Bottomland oaks, red maple, green ash, and sweetgum
Management concerns:
• Moderate equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited

Limitations:
- Flooding hazard
- Wetness
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

LEVEE—Levee

This map unit consists of a continuous, compacted, earthen embankment designed and constructed by the U.S. Army Corps of Engineers to provide protection against floodwaters from the Mississippi River. The levee is generally about 300 feet wide at the bottom and between 15 and 20 feet wide at the top. The levee runs continuously along the south and eastern side of the Mississippi River in the Lower Bottom south of Hickman, and extends northward nearly halfway around the eastern edge of Madrid Bend. A gravel road runs along the top of the levee. A mixture of grasses, legumes, and weeds occurs on both sides of the levee and is usually cut and rolled into large round bales during summer.

Though the levee protects land and property from floodwaters in the Lower Bottom below Hickman, ground water in the form of "seepwater" does inundate depressional areas on the flood plain and soils immediately adjacent to the inside of the levee when the river remains above flood stage for an extended period.

In Madrid Bend the levee is designed to prevent high velocity floodwaters from sweeping across this area. However, areas below about 300 feet elevation are not protected against floods because there is no levee on the west side of the Bend. Much of the flooding results from inundation due to backwater from the south near the Tennessee state line stretching northward into the Bend when the river exceeds flood stage.

LoA—Loring silt loam, 0 to 2 percent slopes

Setting

Major landform: Uplands
Position on the landform: Summits of ridges
Size of areas: 10 to 50 acres

Composition

- Loring and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Feliciana and Memphis soils in similar positions

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 21 inches—strong brown silt loam
21 to 25 inches—mixed yellowish brown and brown, mottled silt loam
25 to 31 inches—mottled brown and light brownish gray silty clay loam
31 to 80 inches—a weak fragipan of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Low
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, slightly restricted by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.7 to 2.8 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- A weak fragipan
- Maintaining tilth and fertility

Management measures:
- Crop residue management and conservation tillage
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Equipment limitations due to seasonal wetness

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
- Seasonal wetness due to the fragipan

Corrective measures:
- Surface drains or curtain drains to remove excess water
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Seasonal wetness
- Restricted permeability due to the fragipan

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption area, and in some instances, special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

LoB—Loring silt loam, 2 to 6 percent slopes

Setting

Major landform: Uplands
Position on the landform: Ridgetops
Size of areas: 10 to 500 acres

Composition

- Loring and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Feliciana and Memphis soils in similar positions
- Small areas of Calloway soils near the head of drainageways

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 21 inches—strong brown silt loam
21 to 25 inches—mixed yellowish brown and brown, mottled silt loam
25 to 31 inches—mottled brown and light brownish gray silty clay loam
31 to 46 inches—a weak fragipan of brown, mottled silt loam
46 to 80 inches—a weak fragipan of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Low
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, slightly restricted by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.7 to 2.8 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Moderate erosion hazard
• Seasonal high water table
• Fragipan
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
• Seasonal wetness due to the fragipan
Corrective measures:
• Surface drains or curtain drains to remove excess water
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Restricted permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

LoB2—Loring silt loam, 2 to 6 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Ridgetops and upper side slopes
Size of areas: 10 to 500 acres

Composition

• Loring and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Feliciana and Memphis soils in similar positions
• Small areas of Calloway soils near the head of drainageways

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Transitional layer:
5 to 11 inches—dark yellowish brown silt loam

Subsoil:
11 to 21 inches—strong brown silt loam
21 to 25 inches—mixed yellowish brown and brown, mottled silt loam
25 to 80 inches—a weak fragipan of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Low
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Moderate

Depth of root zone: Moderately deep, slightly restricted by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.7 to 2.8 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Moderate erosion hazard
• Seasonal high water table
• Fragipan
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Somewhat limited
Limitations:
• Seasonal wetness due to the fragipan
Corrective measures:
• Surface drains or curtain drains to remove excess water
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Restricted permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

LoB3—Loring silt loam, 4 to 6 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Gently sloping, convex shoulders and side slopes
Size of areas: 5 to 50 acres

Composition

• Loring and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Convent soils occupying narrow drainageways
• Small areas of Calloway soils in slightly concave positions
• Areas that are not very limitedly eroded

Similar:
• Grenada soils in similar positions

Typical Profile

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

Subsoil:
4 to 21 inches—strong brown, mottled silt loam

21 to 65 inches—a weak fragipan of brown and strong brown, mottled silt loam
65 to 80 inches—strong brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Low
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, slightly restricted by the fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.5 to 1.8 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3e
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Severe erosion hazard
• Depth to weak fragipan
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope length or gradient increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Shallow depth to weak fragipan
• Maintaining fertility
Management measures:
• Selecting grasses and legumes that are best adapted to moderately deep rooting depths
• Maximizing the forage efficiency with proper stocking rates, pasture rotation, and deferred grazing
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to seasonal wetness
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Moderate
Limitations:
• Seasonal wetness due to the fragipan
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Restricted permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
• Depth to fragipan
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

LoC2—Loring silt loam, 6 to 12 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Sloping, convex shoulders and side slopes
Size of areas: 10 to 50 acres

Composition

- Loring and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Feliciana and Memphis soils in similar positions
- Small areas of Calloway soils in slightly concave positions near the head of drainageways
- Areas that are very limitedly eroded

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Transitional layer:
5 to 11 inches—dark yellowish brown silt loam

Subsoil:
11 to 21 inches—strong brown silt loam
21 to 25 inches—mixed yellowish brown and brown, mottled silt loam
25 to 80 inches—a weak fragipan of brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Low
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Moderate
Depth of root zone: Moderately deep, limited by the fragipan
Surface runoff: Moderate to moderately rapid
Depth to seasonal high water table: 1.7 to 2.8 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
- Severe erosion hazard
- Seasonal high water table
- Fragipan
- Susceptibility to compaction
- Maintaining tilth and fertility

Management measures:
- Grassed waterways along drainageways
- Crop residue management and conservation tillage
- Intensifying measures as slope increases
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
- No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
- Equipment limitations due to seasonal wetness

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Slope
- Seasonal wetness due to the fragipan

Corrective measures:
- Surface drains or curtain drains to remove excess water
- Tile drains by footings
- Proper engineering design, site preparation, and construction
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Seasonal wetness
- Slow permeability due to the fragipan

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption area, and in some instances, special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Low strength

Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

LoC3—Loring silt loam, 6 to 12 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Shoulders and side slopes
Size of areas: 5 to 500 acres

Composition

• Loring and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Adler and Convent soils occupying narrow drainageways
• Calloway soils in slightly concave positions at the head of small drainages
• Areas that are not very limitedly eroded

Typical Profile

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

Subsoil:
4 to 21 inches—yellowish brown and strong brown, mottled silt loam
21 to 48 inches—a weak fragipan of yellowish brown and brown, mottled silt loam
48 to 80 inches—strong brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Low
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Available water capacity: Low
Depth of root zone: Moderately deep, slightly restricted by the weak fragipan
Surface runoff: Moderate
Depth to seasonal high water table: 1.5 to 1.8 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4e
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Severe erosion hazard
• Depth to the fragipan
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope length or gradient increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Depth to the fragipan
• Maintaining fertility
Management measures:
• Selecting grasses and legumes that are best adapted to shallow to moderately deep rooting depths
• Maximizing the forage efficiency with proper stocking rates, pasture rotation, and deferred grazing
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Severe equipment limitations due to seasonal wetness
• Moderate plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Slope
• Seasonal wetness due to the fragipan

Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• Restricted permeability due to the fragipan
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area, and in some instances, special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
• Depth to fragipan
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

LoD3—Loring silt loam, 12 to 20 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Moderately steep side slopes
Size of areas: 10 to more than 100 acres

Composition

• Loring and similar soils: 80 to 85 percent
• Contrasting components of minor extent: 15 to 20 percent

Minor Components

Contrasting:
• Feliciana and Memphis soils in similar positions
• Small areas that are not very limitedly eroded

Typical Profile

Surface layer:
0 to 4 inches—yellowish brown silt loam

Subsoil:
4 to 20 inches—strong brown, mottled silt loam
20 to 38 inches—a weak fragipan consisting of strong brown, mottled silt loam
38 to 80 inches—dark brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Low
Permeability: Moderately slow
Available water capacity: Low
Depth of root zone: Shallow, limited by the weak fragipan
Surface runoff: Moderate to moderately rapid
Depth to seasonal high water table: 1.5 to 1.8 feet during wet periods in winter and early spring
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 6e
Suitability: Poorly suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Severe erosion hazard
• Limited available water holding capacity
• Shallow depth to the fragipan
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope length or gradient increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Shallow depth to the fragipan
• Maintaining fertility.
Management measures:
• Selecting grasses and legumes that are best adapted to shallow to moderately deep rooting depths
• Maximizing the forage efficiency with proper stocking rates, pasture rotation, and deferred grazing
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to seasonal wetness
• Moderate plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Slope
• Restricted permeability due to the fragipan
• Seasonal wetness
Corrective measures:
• Installing the absorption field on adjacent, less sloping areas
• Curtain drains to remove excess water
• Special design or alternate system in some instances
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Slope
• Low strength
Corrective measures:
• Proper engineering design, site preparation, and construction
• Utilizing adjacent areas with less slope
• See Use and Management of the Soils, Engineering, Building Site Development Section

M-W—Miscellaneous water

This map unit consists of miscellaneous areas of water occupying municipal sewage treatment lagoons and industrial waste ponds. The lagoons and waste ponds are manmade structures, either square or rectangular in shape, and contain an earthen berm around the periphery of the structure. These miscellaneous areas of water remain inundated throughout the year.

MeA—Memphis silt loam, 0 to 2 percent slopes

Setting

Major landform: Uplands
Position on the landform: Nearly level ridgetops
Size of areas: 5 to 25 acres

Composition

• Memphis and similar soils: 95 percent
• Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
• Loring soils in similar positions

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam

Subsoil:
7 to 31 inches—strong brown silt loam
31 to 80 inches—brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability class: 1

Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Maintaining tilth and fertility
Management measures:
• Crop residue management and conservation tillage
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Plant competition
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Restricted permeability
Corrective measures:
• Increasing the size of the absorption area
• Surface drains or curtain drains, where practical, to remove excess water
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

MeB—Memphis silt loam, 2 to 6 percent slopes

Setting

Major landform: Uplands
Position on the landform: Gently sloping narrow ridgetops
Size of areas: 5 to 250 acres

Composition

• Memphis and similar soils: 95 percent
• Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
• Loring soils in similar positions
• Small eroded areas

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam

Subsoil:
7 to 31 inches—strong brown silt loam
31 to 80 inches—brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Moderate erosion hazard
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage

• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Plant competition
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Restricted permeability
Corrective measures:
• Increasing the size of the absorption area
• Surface drains or curtain drains, where practical, to remove excess water
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

MeB2—Memphis silt loam, 2 to 6 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Gently sloping narrow ridgetops
Size of areas: 5 to 250 acres

Composition

• Memphis and similar soils: 95 percent
• Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
• Loring soils in similar positions
• Uneroded areas

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 31 inches—strong brown silt loam
31 to 80 inches—brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Moderate erosion hazard
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Plant competition
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Restricted permeability
Corrective measures:
• Increasing the size of the absorption area
• Surface drains or curtain drains, where practical, to remove excess water
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

MeC2—Memphis silt loam, 6 to 12 percent slopes, eroded

Setting

Major landform: Uplands
Position on the landform: Sloping, narrow ridgetops and upper shoulders of side slopes
Size of areas: 5 to 75 acres

Composition

• Memphis and similar soils: 95 percent
• Contrasting components of minor extent: 5 percent

Minor Components

Contrasting:
• Loring soils on the lower one-third of the unit
• Small, very limitedly eroded areas

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 31 inches—strong brown silt loam
31 to 80 inches—brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3e
Suitability: Well suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Severe erosion hazard
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Plant competition
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Restricted permeability
• Slope
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area
• Utilizing adjacent areas with less slope
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

MeC3—Memphis silt loam, 6 to 12 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Side slopes
Size of areas: 5 to 75 acres

Composition

• Memphis and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Loring soils on the lower one-third of the unit
• Small areas with only moderate erosion or not limited for use because of erosion

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Transitional layer:
3 to 6 inches—dark yellowish brown silt loam

Subsoil:
6 to 16 inches—brown silt loam
16 to 80 inches—brown and strong brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4e
Suitability: Suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Severe erosion hazard
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: White clover and tall fescue
Management concerns:
• No significant limitations

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Plant competition

Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Restricted permeability
• Slope
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area
• Utilizing adjacent areas with less slope
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

MeD3—Memphis silt loam, 12 to 20 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Side slopes
Size of areas: 20 to 175 acres

Composition

• Memphis and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Loring soils on the lower one-third of the unit
• Small areas with only moderate erosion or not limited for use because of erosion

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Transitional layer:
3 to 6 inches—dark yellowish brown silt loam

Subsoil:
6 to 16 inches—brown silt loam
16 to 80 inches—brown and strong brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Pasture (fig. 9)

Cropland

Land capability subclass: 6e
Suitability: Poorly suited
Adapted crops: Corn, soybeans, wheat, and grain sorghum
Management concerns:
• Slope
• Severe erosion hazard
• Maintaining tilth and fertility
Management measures:
• Grassed waterways along drainageways
• Crop residue management and conservation tillage
• Intensifying measures as slope increases
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: White clover and tall fescue
Management concerns:
• Severe erosion hazard
• Maintaining desired species composition
Management measures:
• Frequent pasture renovation
• Maximizing the forage efficiency with proper stocking rates, pasture rotation, and deferred grazing

Figure 9.—Pastureland consisting of a mixture of fescue and white clover on Loring silt loam, 6 to 12 percent slopes, severely eroded, in the foreground and Memphis silt loam 12 to 20 percent slopes, severely eroded, in the background.

• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Plant competition
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Utilizing adjacent areas with less slope
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Utilizing adjacent areas with less slope
• Increasing the size of the absorption area

• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Slope
• Low strength
Corrective measures:
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

MeE3—Memphis silt loam, 20 to 30 percent slopes, severely eroded

Setting

Major landform: Uplands
Position on the landform: Side slopes
Size of areas: 20 to 175 acres

Composition

• Memphis and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Loring and Natchez soils in similar positions
• Small areas with only moderate erosion

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Transitional layer:
3 to 6 inches—dark yellowish brown silt loam

Subsoil:
6 to 16 inches—brown silt loam
16 to 80 inches—brown and strong brown silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Low
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Moderate
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Pasture

Cropland

Land capability subclass: 7e
Suitability: Not suited
Management concerns:
• Slope
• Severe erosion hazard

Pasture and Forage

Suitability: Pasture—suited; forage—poorly suited
Adapted plants: White clover and tall fescue
Management concerns:
• Severe erosion hazard
• Maintaining desired species composition
Management measures:
• Frequent pasture renovation
• Maximizing the forage efficiency with proper stocking rates, pasture rotation, and deferred grazing
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, hickory, and yellow-poplar
Management concerns:
• Equipment limitations due to slope
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Utilizing adjacent areas with less slope
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Utilizing adjacent areas with less slope
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Slope
• Low strength
Corrective measures:
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

MmF—Memphis-Natchez complex, 30 to 50 percent slopes, gullied

Setting

Major landform: Uplands
Position on the landform: Very steep side slopes of the highly dissected Mississippi River bluff. Memphis soils occur primarily on mid to lower side slopes and on ridgetops and nose slopes; Natchez soils occur primarily on the mid to upper one-third of side slopes. The two soils occur as areas so intricately mixed or so small that mapping them separately is not practical at the scale used.
Size of areas: 50 to 2,500 acres

Composition

• Memphis and similar soils: 55 percent
• Natchez and similar soils: 35 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Soils similar to Memphis and Natchez soils with redoximorphic features below 3 feet
• The steepest areas that have geologic clay, mudstone, siltstone, and/or sandstone below 3.5 feet depth with outcropping in places
• Areas with slopes ranging to 60 percent

Typical Profile

Memphis

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 31 inches—strong brown silt loam
31 to 80 inches—brown silt loam

Natchez

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

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

Subsoil:
8 to 48 inches—yellowish brown silt loam

Substratum:
48 to 80 inches—yellowish brown silt

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Rapid
Depth to seasonal high water table: Greater than 6 feet
Frequency of flooding: None

Land Use

Major uses: Forestland

Cropland

Land capability subclass: Memphis—7e; Natchez—7e
Suitability: Not suited
Management concerns:
• Slope
• Severe erosion hazard

Pasture and Forage

Suitability: Poorly suited
Adapted plants: White clover and tall fescue
Management concerns:
• Severe erosion hazard
• Very steep slopes prevent effective species establishment and renovation
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Upland oaks, sweetgum, sugar maple, hickory, and yellow-poplar
Management concerns:
• Equipment limitations and erosion hazard due to slope
Management measures:
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Utilizing adjacent areas with less slope
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Slope
Corrective measures:
• Utilizing adjacent areas with less slope
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Slope
• Memphis—low strength
Corrective measures:
• Proper engineering design, site preparation, and construction
• See Use and Management of the Soils, Engineering, Building Site Development Section

Mo—Mhoon silt loam, ponded

Setting

Major landform: Flood plains
Position on the landform: Depressional areas along major tributaries to the Mississippi River
Size of areas: 5 to 100 acres

Composition

• Mhoon and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Small areas of Convent and Dekoven soils scattered throughout the unit

Similar:
• Soils similar to Mhoon on a slightly higher elevation that are ponded for only short periods throughout the year

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown, mottled silt loam
5 to 9 inches—mottled grayish brown and dark grayish brown silt loam

Subsoil:
9 to 22 inches—dark gray, mottled silt loam
22 to 33 inches—dark gray, mottled silty clay loam

Substratum:
33 to 80 inches—gray, mottled silty clay loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 0.5 foot to 4 feet above the surface throughout most of the year
Frequency of flooding: Inundated throughout most of the year

Use and Management

Major uses: Forestland and wildlife habitat

Cropland

Land capability subclass: 5w
Suitability: Not suited
Management concerns:
• Excessive wetness via ponding throughout most of the year
• Compliance with existing wetland laws and regulations

Pasture and Forage

Suitability: Not suited
Management concerns:
• Excessive wetness via ponding throughout most of the year
• Compliance with existing wetland laws and regulations

Forestland

Suitability: Moderately suited
Adapted species: Water-tolerant trees, such as baldcypress, pin oak, silver maple, water tupelo, and black willow
Management concerns:
• Excessive wetness via ponding throughout most of the year

Management measures:
- Timber management is limited by the ponding
- Managing for wetland wildlife habitat
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Ponding
- Wetness

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Ponding
- Wetness
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Ponding
- Wetness
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Engineering, Building Site Development Section

Op—Openlake silty clay loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 50 to 500 acres

Composition

- Openlake and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Bondurant, Commerce, and Keyespoint soils
- Small areas that have silty clay surface texture

Typical Profile

Surface layer:
0 to 6 inches—very dark grayish brown and dark grayish brown, mottled silty clay loam

Subsoil:
6 to 36 inches—dark grayish brown, mottled silty clay
36 to 51 inches—dark grayish brown, mottled silty clay loam
51 to 65 inches—dark grayish brown, mottled silt loam

Substratum:
65 to 80 inches—gray and grayish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and spring
Shrink-swell potential: High
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
- Narrow range of workability due to high clay content
- Seasonal high water table
- Delayed plantings for corn
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
- Wetness
- Controlling weeds
- Maintaining tilth

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- High shrink-swell potential
- Wetness

Corrective measures:
- Adding extra reinforcement in foundations or building on concrete slab
- Surface drains or curtain drains to remove excess water
- Tile drains by footings
- See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Wetness
- Restricted permeability

Corrective measures:
- Curtain drains to remove excess water
- Special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- High shrink-swell potential
- Low strength

Corrective measures:
- Construction on suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Os—Openlake silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional slackwater areas
Size of areas: 50 to 500 acres

Composition

- Openlake and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Commerce and Keyespoint soils
- Small areas that have silty clay surface texture

Typical Profile

Surface layer:
0 to 6 inches—very dark grayish brown and dark grayish brown, mottled silty clay loam

Subsoil:
6 to 36 inches—dark grayish brown, mottled silty clay
36 to 51 inches—dark grayish brown, mottled silty clay loam
51 to 65 inches—dark grayish brown, mottled silt loam

Substratum:
65 to 80 inches—gray and grayish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Somewhat poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 1 foot to 2 feet of the surface during winter and early spring
Shrink-swell potential: High

Frequency of flooding: Frequent—brief to very long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4w
Suitability: Suited
Adapted crops: Soybeans
Management concerns:
- Frequent flooding sometimes lasting for very long duration
- Narrow range of workability due to high clay content
- Seasonal high water table
- Delayed plantings
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Not suited
Management concerns:
- Frequent flooding sometimes lasting for very long duration
- Wetness

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, green ash, pecan, and sweetgum
Management concerns:
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential
- Wetness

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Restricted permeability
- Wetness

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Ph—Phillippy silty clay loam, 0 to 3 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to gently sloping convex low ridges, many of which are old river terraces at a slightly higher elevation than the surrounding flood plain
Size of areas: 10 to 100 acres

Composition

- Phillippy and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bardwell, Bowdre, and Ware soils
- Soils similar to Phillippy with a mollic epipedon greater than 24 inches thick
- Soils that have only 1 foot of clayey textures overlying loamy layers

Typical Profile

Surface layer:
0 to 10 inches—very dark grayish brown silty clay loam

Subsurface layer:
10 to 19 inches—dark brown silty clay

Subsoil:
19 to 24 inches—brown, mottled loam
24 to 29 inches—brown, mottled very fine sandy loam
29 to 42 inches—brown loamy fine sand

Substratum:
42 to 65 inches—brown fine sand
65 to 80 inches—brown, mottled fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderately slow in the surface; very slow in the subsurface; moderate in the subsoil; moderately rapid in the substratum
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 2 to 4 feet below the surface during winter and spring
Shrink-swell potential: High in the upper 1.5 feet
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
• Narrow range of workability due to high clay content
• Maintaining tilth
Management measures:
• Restricting tillage to periods when the soil is moist, and not too wet or too dry
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
• Controlling weeds
• Maintaining tilth
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, green ash, pecan, and sweetgum
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Moderate
Limitations:
• Restricted permeability in the upper 2 feet
• Seasonal wetness
Corrective measures:
• Curtain drains to remove excess water
• Increasing the size of the absorption area
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Not limited

Pp—Phillippy silty clay loam, 0 to 3 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain in the Upper Bottom
Position on the landform: Nearly level to gently sloping convex low ridges, many of which are old river terraces at a slightly higher elevation than the surrounding flood plain
Size of areas: 10 to 75 acres

Composition

• Phillippy and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Bardwell, Commerce, and Ware soils
• Soils similar to Phillippy with a mollic epipedon greater than 24 inches thick

• Soils that have only 1 foot of clayey texture overlying loamy layers

Typical Profile

Surface layer:
0 to 3 inches—very dark grayish brown silty clay loam
3 to 10 inches—very dark grayish brown silty clay

Subsurface layer:
10 to 19 inches—dark brown silty clay

Subsoil:
19 to 24 inches—brown, mottled loam
24 to 29 inches—brown, mottled very fine sandy loam
29 to 42 inches—brown loamy fine sand

Substratum:
42 to 65 inches—brown fine sand
65 to 80 inches—brown, mottled fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Moderately well drained
Organic matter content: Moderate
Permeability: Moderately slow in the surface; very slow in the subsurface; moderate in the subsoil; moderately rapid in the substratum
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Slow
Depth to seasonal high water table: 2 to 4 feet below the surface during winter and spring
Shrink-swell potential: High in the upper 1.5 feet
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Soybeans
Management concerns:
• Frequent flooding sometimes lasting for long duration
• Narrow range of workability due to high clay content in the surface layers
• Maintaining tilth
Management measures:
• Restricting tillage to periods when the soil is moist, and not too wet or too dry
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Management concerns:
• Frequent flooding sometimes lasting for long duration
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, elm, pecan, and sweetgum
Management concerns:
• Flooding hazard
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• High shrink-swell potential in the upper 2 feet
Corrective measures:
• Impractical or none feasible
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Restricted permeability in the upper 2 feet
• Seasonal wetness
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

PtD—Pits-Udorthents complex, 0 to 20 percent slopes

Setting

Major landform: Areas excavated for earthen fill, gravel or sand
Size of areas: 10 to 100 acres

Composition

- Pits: 75 percent
- Udorthents: 15 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Areas of Commerce, Feliciana, and Loring soils
- Areas that have water at the bottom of some pits

Typical Profile

This map unit consists of areas in which the soil has been excavated for earthen fill or has been removed to expose the underlying gravel and sand. The earthen fill has been used primarily for levee and highway construction. Gravel and sand are used for general construction and building purposes such as subgrade for highways, parking lots, and foundations.

Pits are open excavations from which soil and underlying materials have been removed. These areas typically have vertical or nearly vertical walls that are 10 to 40 feet high.

Udorthents consist of loamy material containing a mixture of topsoil, subsoil, and the substratum where the three materials have been smoothed and graded. A portion of the gravel pit in the northeast area of the county, east of Crutchfield, has been reclaimed and reseeded to a permanent vegetative cover. Texture is generally silt loam or silty clay loam with no definite arrangement into layers because of the mixing that occurred during mineral extraction.

In some places, each miscellaneous area is large enough to map separately, but because of present and predicted use, they are mapped as one unit.

Soil Properties and Qualities

Udorthents

Natural fertility: Very low
Organic matter content: Very low
Permeability: Highly variable because of the nature of the materials
Available water capacity: Low
Depth of root zone: Shallow to moderately deep
Surface runoff: Medium to very high

Land Use

Cropland

Land capability subclass: Pits—none assigned; Udorthents—7e
Suitability: Not suited

Pasture and Forage

Suitability: Poorly suited
Adapted plants: Fescue and native grasses
Management concerns:
- Severe erosion hazard
- Droughtiness
- Coarse fragment content in places

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Poorly suited
Adapted species: Loblolly pine and shortleaf pine
Management concerns:
- Droughtiness
- Erosion hazard
- Equipment limitations
- Seedling mortality

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Most areas have very limited soil interpretations for Residential and Commercial Uses. Onsite investigation is necessary to determine the limitations and suitability for any proposed use.

Ra—Riverwash, 0 to 3 percent slopes, frequently flooded

This map unit is a miscellaneous area consisting of unvegetated sand bars in the main channel of the Mississippi River. Use and management of riverwash is impractical and, therefore, this map unit is not assigned a land capability class.

Rb—Robinsonville fine sandy loam, 0 to 3 percent slopes, protected

Setting

Major landform: Mississippi River flood plain in the Lower Bottom and in Madrid Bend above 300 feet elevation

Position on the landform: Near the levee, occupying a slightly higher elevation than surrounding areas
Size of areas: 15 to 75 acres

Composition

• Robinsonville and similar soils: 85 percent
• Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
• Bardwell, Commerce, Phillippy, and Ware soils
• Soils similar to Robinsonville that are moderately well drained
• Areas that have silt loam or loam surface texture

Typical Profile

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

Transitional layer:
5 to 14 inches—brown fine sandy loam

Substratum:
14 to 80 inches—brown fine and very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet below the surface during winter and early spring
Shrink-swell potential: None
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability class: 1
Suitability: Well suited
Adapted crops: Soybeans, corn, and small grains
Management concerns:
• Maintaining tilth and fertility
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, white clover, red clover, and tall fescue
Management concerns:
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, American elm, pecan, and sweetgum
Management concerns:
• Plant competition
Management measures:
• Using cultivation and/or chemicals to alleviate undesirable species
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Somewhat limited
Limitations:
• Seasonal wetness
Corrective measures:
• Installing effluent lines above 3 feet depth

Local Roads and Streets

Limitation rating: Not limited

Rc—Robinsonville fine sandy loam, 0 to 3 percent slopes, occasionally flooded

Setting

Major landform: Madrid Bend area of the Mississippi River flood plain
Position on the landform: Near the levee and along the north side of the escarpment, occupying a slightly higher elevation than surrounding areas
Size of areas: 15 to 125 acres

Composition

• Robinsonville and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Bardwell, Commerce, Crevasse, and Ware soils

- Soils similar to Robinsonville that are moderately well drained
- Small areas that have silt loam or loam surface texture
- Small areas above 300 feet elevation that rarely flood

Typical Profile

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

Subsurface layer:
5 to 14 inches—brown fine sandy loam

Substratum:
14 to 80 inches—brown fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Corn, soybeans, and wheat
Management concerns:
- Flooding hazard
- Droughtiness

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Management concerns:
- Flooding
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, American elm, pecan, and sweetgum
Management concerns:
- Plant competition

Management measures:
- Using cultivation and/or chemicals to alleviate undesirable species
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Rf—Robinsonville fine sandy loam, 0 to 3 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain in the Upper Bottom and Madrid Bend
Position on the landform: Areas of slightly higher elevation than surrounding landscapes
Size of areas: 15 to 250 acres

Composition

- Robinsonville and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Bardwell, Commerce, Crevasse, Phillippy, and Ware soils
• Soils similar to Robinsonville that are moderately well drained
• Small areas that have silt loam or loam surface texture

Typical Profile

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

Transitional layer:
5 to 14 inches—brown fine sandy loam

Substratum:
14 to 80 inches—brown fine and very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
• Spring flooding sometimes lasting for long duration
• Delayed plantings in the spring
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Management concerns:
• Flooding sometimes lasting for long duration
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, elm, pecan, and sweetgum (fig.10)
Management concerns:
• Plant competition
Management measures:
• Using cultivation and/or chemicals to alleviate undesirable species
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

RmD—Robinsonville fine sandy loam, natural levee, 8 to 25 percent slopes, occasionally flooded

Setting

Major landform: Mississippi River flood plain in Madrid Bend
Position on the landform: Nearly linear to arcuate natural levee escarpment along the southern part of the bend
Size of areas: 250 acres

Composition

• Robinsonville and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Figure 10.—Agroforestry consisting of American sycamore plantings on Robinsonville fine sandy loam, 0 to 3 percent slopes, frequently flooded, on the right and Crevasse loamy fine sand, 0 to 3 percent slopes, frequently flooded, on the left (soybeans growing in the foreground).

Minor Components

Contrasting:
- Crevasse and Ware soils
- Small areas that have silt loam or loam surface texture

Typical Profile

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

Transitional layer:
6 to 14 inches—brown fine sandy loam

Substratum:
14 to 80 inches—brown fine and very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet during winter and spring
Shrink-swell potential: None
Frequency of flooding: Occasional—portions of the escarpment below 300 feet elevation experience occasional backwater flooding of brief to long duration

Land Use

Major uses: Idle land

Cropland

Land capability subclass: 4e
Suitability: Not suited
Management concerns:
- Slope
- Severe erosion hazard
- Maintaining tilth and fertility

Pasture and Forage

Suitability: Suited
Adapted plants: White clover, tall fescue, and common bermudagrass
Management concerns:
- Severe erosion hazard
- Short, steep slopes in places prevent effective species establishment and renovation

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Suited
Adapted species: Eastern cottonwood, American elm, pecan, sugarberry, and sweetgum
Management concerns:
- Equipment limitations and erosion hazard due to slope

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Slope

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Slope

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Slope—adapting road design to the slope
- Low strength—using a more suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Ro—Roellen silty clay, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Mississippi River flood plain in the Lower Bottom
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 5 to 200 acres

Composition

- Roellen and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bondurant, Bowdre, Sharkey, and Tunica soils

Typical Profile

Surface layer:
0 to 5 inches—very dark grayish brown, mottled silty clay

Subsurface layer:
5 to 13 inches—very dark grayish brown, mottled silty clay

Subsoil:
13 to 42 inches—gray, mottled silty clay and clay

Substratum:
42 to 80 inches—gray, mottled silty clay

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Very slow
Depth to seasonal high water table: 0 to 1.5 feet of the surface during winter and spring
Shrink-swell potential: High

Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Moderately suited
Adapted crops: Soybeans
Management concerns:
- Flooding
- Narrow range of workability and poor tilth due to high clay content
- Excessive wetness
- Susceptibility to excessive compaction
- Delayed plantings

Management measures:
- Maintenance of existing open drainage system
- Limiting tillage and restricting it to periods when the soil is moist, and not too wet or too dry
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
- Flooding sometimes lasting for long duration
- Excessive wetness
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Suited
Adapted species: Eastern cottonwood, black willow, baldcypress, green ash, and sweetgum
Management concerns:
- Flooding sometimes lasting for long duration
- Equipment limitations due to seasonal wetness
- Seedling mortality

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential
- Excessive wetness

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Excessive wetness
- Very slow permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- High shrink-swell potential
- Wetness
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

RsA—Routon silt loam, 0 to 2 percent slopes

Setting

Major landform: Loess uplands
Position on the landform: Stream terraces and the head of drainageways
Size of areas: 3 to 50 acres

Composition

- Routon and similar soils: 80 percent
- Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
- Small areas of Kurk soils in similar positions
- Soils similar to Routon near the periphery of the map unit that contain a fragipan below 1.5 feet

• Soils similar to Routon in the Little Bayou de Chien watershed that are alkaline or very strongly alkaline throughout

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown and grayish brown, mottled silt loam

Subsurface layer:
8 to 15 inches—gray, mottled silt loam

Subsoil:
15 to 60 inches—light brownish gray, mottled silt loam

Substratum:
60 to 80 inches—yellowish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Moderate in the solum; slow in the substratum
Available water capacity: High
Depth of root zone: Deep in summer, but restricted by the water table in winter and spring
Surface runoff: Slow
Depth to seasonal high water table: Within 1 foot of the surface during winter and early spring
Frequency of flooding: None (a few of the lowest lying areas may experience rare flooding)

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Moderately suited
Adapted crops: Corn, soybeans, and grain sorghum in areas that have been adequately drained; generally not suited to winter wheat
Management concerns:
• Seasonal high water table
• Delayed plantings
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• Reducing tillage operations to minimize compaction
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Maintaining tilth and fertility
Management measures:
• Utilizing forage species tolerant of excessive seasonal wetness
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Green ash, sweetgum, cherrybark oak, pin oak, southern red oak, shagbark hickory, and red maple
• Moderate equipment limitations due to seasonal wetness
• Seedling mortality and plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Wetness
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Excessive seasonal wetness
• Restricted permeability
Corrective measures:
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Wetness
• Low strength

Corrective measures:
• Construction on suitable subgrade or base material
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Engineering, Building Site Development Section

RtA—Routon silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Stream terraces along Bayou de Chien and near the mouth of Mud Creek
Position on the landform: Slightly depressional areas
Size of areas: 3 to 50 acres

Composition

• Routon and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Convent, Dekoven, and Mhoon soils along drainageways
• Small areas of Kurk soils in similar positions
• Soils similar to Routon that contain a fragipan below 1.5 feet
• Soils similar to Routon that are strongly alkaline throughout

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown and grayish brown, mottled silt loam

Subsurface layer:
8 to 15 inches—gray, mottled silt loam

Subsoil:
15 to 60 inches—light brownish gray, mottled silt loam

Substratum:
60 to 80 inches—yellowish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Moderate in the solum; slow in the substratum
Available water capacity: High
Depth of root zone: Deep in summer, but restricted by the water table in winter and spring
Surface runoff: Slow
Depth to seasonal high water table: Within 1 foot of the surface during winter and early spring
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Moderately suited
Adapted crops: Corn, soybeans, and grain sorghum in areas that have been adequately drained; generally not suited to winter wheat
Management concerns:
• Wetness
• Delayed plantings
• Occasional flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility
Management measures:
• Maintenance of existing drainage system
• Reducing tillage operations to minimize compaction
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: White clover and tall fescue
Management concerns:
• Wetness
• Occasional flooding sometimes lasting for long duration
• Maintaining tilth and fertility
Management measures:
• Utilizing forage species tolerant of excessive seasonal wetness
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Green ash, sweetgum, cherrybark oak, pin oak, southern red oak, shagbark hickory, and red maple
• Moderate equipment limitations due to seasonal wetness
• Seedling mortality and plant competition
Management measures:
• Restricting equipment use to periods when the soil is dry

• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
Corrective measures:
• Selecting a site at a higher elevation above flood-prone areas
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Excessive seasonal wetness
• Restricted permeability
Corrective measures:
• Selecting a site at a higher elevation above flood-prone areas
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Wetness
• Low strength
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Engineering, Building Site Development Section

RuA—Routon silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Stream terraces along Bayou de Chien and mouth of Mud Creek
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 15 to 300 acres

Composition

• Routon and similar soils: 80 percent
• Contrasting components of minor extent: 20 percent

Minor Components

Contrasting:
• Convent, Dekoven, and Mhoon soils along drainageways
• Small areas of Kurk soils in similar positions
• Soils similar to Routon that are strongly alkaline throughout

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown and grayish brown, mottled silt loam

Subsurface layer:
8 to 15 inches—gray, mottled silt loam

Subsoil:
15 to 60 inches—light brownish gray, mottled silt loam

Substratum:
60 to 80 inches—yellowish brown, mottled silt loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Moderate in the solum; slow in the substratum
Available water capacity: High
Depth of root zone: Deep in summer, but restricted by the water table in winter and spring
Surface runoff: Slow
Depth to seasonal high water table: Within 1 foot of the surface during winter and early spring
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 4w
Suitability: Moderately suited
Adapted crops: Soybeans and grain sorghum
Management concerns:
• Wetness
• Delayed plantings
• Frequent flooding sometimes lasting for long duration
• Susceptibility to compaction
• Maintaining tilth and fertility

Management measures:
- Maintenance of existing drainage system
- Reducing tillage operations to minimize compaction
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Adapted plants: White clover and tall fescue
Management concerns:
- Wetness
- Frequent flooding sometimes lasting for long duration
- Maintaining tilth and fertility

Management measures:
- Utilizing forage species tolerant of excessive seasonal wetness
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Green ash, sweetgum, shagbark hickory, and red maple
- Moderate equipment limitations due to seasonal wetness
- Seedling mortality and plant competition

Management measures:
- Restricting equipment use to periods when the soil is dry
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Excessive seasonal wetness
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard
- Wetness
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Sc—Sharkey silty clay, ponded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Depressional areas
Size of areas: 10 to 150 acres

Composition

- Sharkey and similar soils: 90 percent
- Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
- Tunica soils

Typical Profile

Surface layer:
0 to 5 inches—very dark grayish brown, mottled silty clay

Subsoil:
5 to 36 inches—gray, mottled silty clay

Substratum:
36 to 80 inches—gray, mottled silty clay

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Very slow
Depth to seasonal high water table: 0.5 foot to 4 feet above the surface during winter and spring
Shrink-swell potential: High
Frequency of flooding: Inundated due to ponded conditions during most of the year

Land Use

Major uses: Forestland and wetland wildlife habitat (fig. 11)

Cropland

Land capability subclass: 5w
Suitability: Not suited
Management concerns:
- Excessive wetness resulting from ponded conditions

Pasture and Forage

Suitability: Not suited
Management concerns:
- Excessive wetness resulting from ponded conditions

Forestland

Suitability: Moderately suited
Adapted species: Baldcypress, Eastern cottonwood, and black willow

Figure 11.—An area of Sharkey silty clay, ponded, exhibiting excellent vegetative morphological adaptations in response to wetland hydrology. Notice the buttressed trunks and pneumatophores (knees) of the bald cypress trees. High water marks can also be seen about 3 feet up from the base of the trees.

Management concerns:
- Equipment limitations due to ponded conditions
- Slow growth

Management measures:
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Excessive wetness resulting from ponded conditions
- High shrink-swell potential

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Excessive wetness resulting from ponded conditions
- Restricted permeability

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Excessive wetness resulting from ponded conditions
- High shrink-swell potential
- Low strength

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Sh—Sharkey silty clay, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 20 to 100 acres

Composition

- Sharkey and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Keyespoint, Openlake, and Tunica soils

Typical Profile

Surface layer:
0 to 5 inches—very dark grayish brown, mottled silty clay

Subsoil:
5 to 36 inches—gray, mottled silty clay

Substratum:
36 to 80 inches—gray, mottled silty clay

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Very slow
Depth to seasonal high water table: 0 to 1 foot of the surface during winter and spring
Shrink-swell potential: High
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event.

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Moderately suited
Adapted crops: Soybeans
Management concerns:
- Narrow range of workability due to high clay content
- Excessive wetness
- Delayed plantings
- Maintaining tilth

Management measures:
- Maintenance of existing open drainage system
- Restricting tillage to periods when the soil is moist, and not too wet or too dry
- Compliance with existing wetland laws and regulations
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited

Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
• Excessive wetness
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, baldcypress, green ash, pecan, and sweetgum
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Wetness
• High shrink-swell potential
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• Construction on suitable subgrade or base material
• Adding extra reinforcement in foundations or building on concrete slab
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Wetness
• Restricted permeability
Corrective measures:
• Curtain drains to remove excess water
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• High shrink-swell potential
• Seasonal wetness
• Low strength
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Sk—Sharkey silty clay, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional slackwater areas
Size of areas: 5 to 200 acres

Composition

• Sharkey and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Keyespoint, Openlake, and Tunica soils

Typical Profile

Surface layer:
0 to 5 inches—very dark grayish brown, mottled silty clay

Subsoil:
5 to 36 inches—gray, mottled silty clay

Substratum:
36 to 80 inches—gray, mottled silty clay

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Very slow
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Very slow
Depth to seasonal high water table: 0 to 1 foot of the surface during winter and spring
Shrink-swell potential: High
Frequency of flooding: Frequent—brief to very long duration

Land Use

Major uses: Forestland and cropland

Cropland

Land capability subclass: 5w

Suitability: Poorly suited
Adapted crops: Soybeans
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Narrow range of workability due to high clay content
• Excessive wetness
• Delayed plantings
• Maintaining tilth
Management measures:
• Maintenance of existing open drainage system
• Restricting tillage to periods when the soil is moist, and not too wet or too dry
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Not suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Excessive wetness

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, baldcypress, green ash, pecan, and sweetgum
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Excessive wetness
• High shrink-swell potential
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Excessive seasonal wetness
• Restricted permeability
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
• High shrink-swell potential
• Low strength
• Excessive seasonal wetness
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Tc—Tunica silty clay, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional areas
Size of areas: 25 to 250 acres

Composition

• Tunica and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Bondurant, Bowdre, and Sharkey soils
• Soils similar to Tunica that have a mollic epipedon

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown, mottled silty clay

Subsoil:
8 to 22 inches—gray, mottled silty clay
22 to 33 inches—gray, mottled silty clay loam
33 to 40 inches—mottled gray and dark grayish brown silt loam
40 to 48 inches—gray, mottled loam

Substratum:
48 to 80 inches—brown sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate

Permeability: Very slow in the upper 2 feet; moderate below 2 feet
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Very slow
Depth to seasonal high water table: 0 to 1 foot of the surface during winter and spring
Shrink-swell potential: High
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event.

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Moderately suited
Adapted crops: Soybeans
Management concerns:
• Narrow range of workability due to high clay content in the surface layer
• Excessive wetness
• Delayed plantings
• Maintaining tilth
Management measures:
• Maintenance of existing open drainage system
• Restricting tillage to periods when the soil is moist, and not too wet or too dry
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Moderately suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
• Excessive wetness
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, baldcypress, green ash, pecan, and sweetgum
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Seasonal wetness
• High shrink-swell potential
Corrective measures:
• Surface drains or curtain drains to remove excess water
• Tile drains by footings
• Construction on suitable subgrade or base material
• Adding extra reinforcement in foundations or building on concrete slab
• See Use and Management of the Soils, Engineering, Building Site Development Section

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Wetness
• Restricted permeability
Corrective measures:
• Curtain drains to remove excess water
• Special design or alternate system
• See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• High shrink-swell potential
• Low strength
• Excessive seasonal wetness
Corrective measures:
• Construction on suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Tu—Tunica silty clay, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly depressional slackwater areas
Size of areas: 5 to 200 acres

Composition

• Tunica and similar soils: 90 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Keyespoint, Openlake, and Sharkey soils

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown, mottled silty clay

Subsoil:
8 to 22 inches—gray, mottled silty clay
22 to 33 inches—gray, mottled silty clay loam
33 to 40 inches—mottled gray and dark grayish brown silt loam
40 to 48 inches—gray, mottled loam

Substratum:
48 to 80 inches—brown sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Poorly drained
Organic matter content: Moderate
Permeability: Very slow in the upper 2 feet; moderate below 2 feet
Available water capacity: Moderate
Depth of root zone: Deep
Surface runoff: Very slow
Depth to seasonal high water table: 0 to 1 foot of the surface during winter and spring
Shrink-swell potential: High
Frequency of flooding: Frequent—brief to very long duration

Land Use

Major uses: Forestland and cropland

Cropland

Land capability subclass: 5w
Suitability: Poorly suited
Adapted crops: Soybeans
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Narrow range of workability due to high clay content
• Excessive wetness
• Delayed plantings
• Maintaining tilth
Management measures:
• Maintenance of existing open drainage system
• Restricting tillage to periods when the soil is moist, and not too wet or too dry
• Compliance with existing wetland laws and regulations
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Adapted plants: Common bermudagrass, white clover, and tall fescue
Management concerns:
• Frequent flooding sometimes lasting for very long duration
• Excessive wetness
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, black willow, baldcypress, green ash, pecan, and sweetgum
Management concerns:
• Equipment limitations due to seasonal wetness
• Seedling mortality
Management measures:
• Restricting equipment use to periods when the soil is dry
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
• High shrink-swell potential
• Excessive wetness
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
• Excessive wetness
• Restricted permeability
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited

Limitations:
• Flooding hazard
• High shrink-swell potential
• Excessive seasonal wetness
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

UdC—Udorthents-Urban land complex, 5 to 25 percent slopes

Setting

Major landform: Areas of significant highway and commercial development
Position on the landform: Uplands and flood plains along the Purchase Parkway and the Mud Creek flood plain along Kentucky Highway 94. The two components occur as areas so intricately mixed or so small that mapping them separately is not practical at the scale used.
Size of areas: 25 to 250 acres

Composition

• Udorthents: 55 percent
• Urban land: 35 percent
• Contrasting components of minor extent: 10 percent

Minor Components

Contrasting:
• Small areas of Calloway, Convent, Feliciana, Grenada, Loring, and Memphis soils
• Narrow areas of exit ramps containing slopes that range to 40 percent

Typical Profile

This map unit consists of cut-and-fill areas containing loamy material of mixed topsoil, subsoil, sand, and/or gravel where the natural soil was graded and smoothed primarily for highway development. The natural soil has been so altered or obscured by cut-and-fill operations that soil identification is no longer feasible.

Udorthents consist of loamy material containing a mixture of topsoil, subsoil, sand, and/or gravel that have been smoothed and graded. Texture ranges from gravelly silt loam or sandy loam to extremely gravelly silty clay loam with no definite arrangement into layers because of the mixing during cut-and-fill operations. Most areas containing fill material occur where the highway extends across a natural flood plain. Areas that have been cut and regraded occur primarily on upland ridges and side slopes.

Urban land is primarily land covered by highways, but also includes commercial buildings, parking lots, and other urban structures. In places, the natural drainage pattern has been altered and replaced by a system of ditches and storm drains.

In some places, each miscellaneous area is large enough to map separately, but because of present and predicted use, they are mapped as one unit. Most delineations contain both miscellaneous areas, but a few contain only one of these areas.

Soil Properties and Qualities

Udorthents

Natural fertility: Low
Organic matter content: Low
Permeability: Highly variable because of the nature of the materials
Available water capacity: Low to moderate
Depth of root zone: Shallow to moderately deep
Surface runoff: Medium to very high

Land Use

Major uses: Commercial highways

Land capability subclass: None assigned

Permanent Vegetative Cover

Suitability: Udorthents—moderately suited
Adapted plants: Tall fescue, Ladino clover, and lespedeza
Management concerns:
• Udorthents—acidity, steep slopes, droughtiness, and very low fertility levels
Management measures:
• Periodic fertilization helps to maintain a lush, vegetative cover for erosion control
• See Use and Management of the Soils, Engineering, Building Site Development Section

UrB—Urban land-Udorthents complex, 2 to 8 percent slopes

Setting

Major landform: Areas of commercial and industrial development
Position on the landform: Gently sloping to sloping ridges and side slopes and, less commonly, on nearly level flood plains. The two components occur as areas so intricately mixed or so small that mapping them separately is not practical at the scale used.

Size of areas: 5 to 40 acres

Composition

- Urban land: 65 percent
- Udorthents: 20 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Collins and Falaya soils on flood plains
- Very small areas of Feliciana, Grenada, and Loring soils on upland ridges and side slopes

Typical Profile

This map unit consists of areas containing loamy material of mixed topsoil, subsoil, sand, and/or gravel where the natural soil was graded and smoothed in order to build urban structures. The vast majority of this map unit occurs in and around Fulton. The natural soils—primarily those of the Feliciana, Grenada, and Loring series—have been so altered or obscured by urban works and structures that soil identification is no longer feasible.

Urban land is land covered by commercial buildings, streets, parking lots, railroad yards, and other urban structures. In places, the natural drainage pattern has been altered and replaced by a system of ditches and storm drains.

Udorthents consist of areas in which the natural soil has been cut and graded, or has been filled with loamy material containing a mixture of topsoil, subsoil, sand, and/or gravel that has been smoothed and graded. Texture ranges from gravelly silt loam or sandy loam to extremely gravelly silty clay loam with no definite arrangement into layers because of the mixing during cut-and-fill operations. On most areas, either the depth of the mixed material is 2 to 5 feet, or about 10 inches to 5 feet or more of the natural soil was removed.

In some places, each miscellaneous area is large enough to map separately, but because of present and predicted use, they are mapped as one unit. Most delineations contain both miscellaneous areas, but a few contain only one.

Soil Properties and Qualities

Udorthents

Natural fertility: Very low
Organic matter content: Very low
Permeability: Highly variable because of the nature of the materials
Available water capacity: Low to moderate
Depth of root zone: Shallow to moderately deep
Surface runoff: Medium to very high

Land Use

Major uses: Business and industrial development

Land capability subclass: None assigned

Landscaping and Greenways

Suitability: Udorthents—Moderately suited
Adapted plants: Most commonly grown lawn and landscaping plants can be used
Management concerns:
- Udorthents—acidity, droughtiness, and very low fertility levels

Management measures:
- A better suited topsoil material in places having an abundance of small gravel, excessive compaction during grading and smoothing operations, limited rooting depth, and removal of the surface soil
- Adequate lime, fertilizer, and water
- Incorporating organic matter, such as bark and mulching, help to assure a successful seeding
- Field borders around parks, cemeteries, and utility right-of-ways promote habitat diversity
- See Use and Management of the Soils, Engineering, Building Site Development Section

Residential and Commercial Uses

- Onsite investigation is necessary to determine the limitations and suitability for any proposed use.

W—Water

This map unit consists of water occupying ponds, lakes, rivers, and double-line streams. These areas are inundated by water in most years, at least during the period that is warm enough for plants to grow. However, most areas are covered with water throughout the year. Pits containing water most of the time are also mapped as Water.

Wa—Ware loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain in the Lower Bottom
Position on the landform: Nearly level, low ridges of old natural levees at a slightly higher elevation than surrounding areas
Size of areas: 15 to 75 acres

Composition

- Ware and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bardwell and Robinsonville soils
- Soils similar to Ware that are fine-loamy
- Areas that have fine sandy loam surface texture
- About 15 acres located at Sassafras Ridge with slopes ranging from 3 to 6 percent

Typical Profile

Surface layer:
0 to 15 inches—very dark grayish brown and very dark gray loam

Subsoil:
15 to 30 inches—brown and dark yellowish brown fine sandy loam and very fine sandy loam

Substratum:
30 to 80 inches—brown fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet of the surface during winter and early spring
Shrink-swell potential: None
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability class: 1
Suitability: Well suited
Adapted crops: Soybeans, corn, and small grains
Management concerns:
- Droughtiness (fig. 12)

Management measures:
- Irrigation to overcome prolonged droughty periods
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, white clover, red clover, and tall fescue
Management concerns:
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, American elm, pecan, and sweetgum
Management concerns:
- Plant competition

Management measures:
- Cultivation and/or chemicals to alleviate undesirable species
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Seasonal wetness within 3 feet of the surface
- Groundwater pollution due to poor filtering capacity

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption area
- Installing effluent lines above 3 feet depth
- Special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Not limited

Wm—Ware loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major landform: Mississippi River flood plain in Madrid Bend between about 288 feet and 300 feet elevation
Position on the landform: Nearly level old natural levees occupying a slightly higher elevation than surrounding areas
Size of areas: 15 to 75 acres

Composition

- Ware and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Figure 12.—Supplemental irrigation is an effective means of increasing crop yields in areas of Ware loam, 0 to 2 percent slopes, protected.

Minor Components

Contrasting:
- Bardwell, Commerce, and Robinsonville soils
- Areas that have silt loam or very fine sandy loam surface texture
- Areas that have a thin overwash of lighter colored brown fine sandy loam overlying the darker mollic material

Typical Profile

Surface layer:
0 to 15 inches—very dark grayish brown and very dark gray loam

Subsoil:
15 to 30 inches—brown and dark yellowish brown fine sandy loam and very fine sandy loam

Substratum:
30 to 80 inches—brown fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow

Depth to seasonal high water table: 4 to 6 feet of the surface during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Occasional—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 2w
Suitability: Well suited
Adapted crops: Soybeans and corn
Management concerns:
- Flooding hazard
- Droughtiness

Management measures:
- Irrigation to overcome prolonged droughty periods
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Suited
Adapted plants: Common bermudagrass, white clover, red clover, and tall fescue
Management concerns:
- Flooding sometimes lasting for long duration
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, elm, pecan, and sweetgum
Management concerns:
- Plant competition

Management measures:
- Using cultivation and/or chemicals to alleviate undesirable species
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
- Flooding hazard

Corrective measures:
- Construction on a raised fill of suitable subgrade or base material
- See Use and Management of the Soils, Engineering, Building Site Development Section

Wr—Ware silt loam, 0 to 2 percent slopes, protected

Setting

Major landform: Mississippi River flood plain in the Lower Bottom
Position on the landform: Broad, nearly level, low ridges of old natural levees occupying a slightly higher elevation than surrounding areas
Size of areas: 15 to 75 acres

Composition

- Ware and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bardwell, Phillippy, and Robinsonville soils
- Soils similar to Ware that have enough clay in the subsoil to be fine-loamy
- Areas that have loam or silty clay loam surface texture
- Areas that have a thin overwash of lighter colored brown fine sandy loam overlying the darker mollic material

Typical Profile

Surface layer:
0 to 3 inches—very dark grayish brown silt loam
3 to 9 inches—very dark grayish brown silty clay loam

Subsurface layer:
9 to 13 inches—very dark grayish brown silt loam

Subsoil:
13 to 22 inches—dark brown silt loam
22 to 27 inches—dark yellowish brown very fine sandy loam

Substratum:
27 to 80 inches—brown very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet of the surface during winter and early spring
Shrink-swell potential: None
Frequency of flooding: None—protected by levee unless subjected to an unusual, catastrophic event

Land Use

Major uses: Cropland

Cropland

Land capability class: 1
Suitability: Well suited
Adapted crops: Soybeans, corn, and small grains
Management concerns:
- Maintaining tilth and fertility

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Well suited
Adapted plants: Common bermudagrass, white clover, red clover, and tall fescue
Management concerns:
- Controlling weeds

Management measures:
- See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, American elm, pecan, and sweetgum
Management concerns:
- Plant competition

Management measures:
- Using cultivation and/or chemicals to alleviate undesirable species
- See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Not limited

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
- Seasonal wetness within 3 feet of the surface
- Groundwater pollution due to poor filtering capacity

Corrective measures:
- Curtain drains to remove excess water
- Increasing the size of the absorption area
- Installing effluent lines above 3 feet depth
- Special design or alternate system
- See Use and Management of the Soils, Engineering, Sanitary Facilities Section

Local Roads and Streets

Limitation rating: Not limited

Ws—Ware silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major landform: Mississippi River flood plain in the Upper Bottom and below about 290 feet elevation in Madrid Bend
Position on the landform: Nearly level to slightly convex old natural levees occupying a slightly higher elevation than surrounding areas of the flood plain
Size of areas: 15 to 75 acres

Composition

- Ware and similar soils: 85 percent
- Contrasting components of minor extent: 15 percent

Minor Components

Contrasting:
- Bardwell, Phillippy, and Robinsonville soils
- Areas that have loam or silty clay loam surface texture
- Areas that have a thin overwash of lighter colored brown fine sandy loam overlying the darker mollic material

Typical Profile

Surface layer:
0 to 3 inches—very dark grayish brown silt loam
3 to 9 inches—very dark grayish brown silty clay loam

Subsurface layer:
9 to 13 inches—very dark grayish brown silt loam

Subsoil:
13 to 22 inches—dark brown silt loam
22 to 27 inches—dark yellowish brown very fine sandy loam

Substratum:
27 to 80 inches—brown very fine sandy loam

Soil Properties and Qualities

Depth: Very deep
Drainage class: Well drained
Organic matter content: Moderate
Permeability: Moderate
Available water capacity: High
Depth of root zone: Very deep
Surface runoff: Slow
Depth to seasonal high water table: 4 to 6 feet during winter and early spring
Shrink-swell potential: None
Frequency of flooding: Frequent—brief to long duration

Land Use

Major uses: Cropland

Cropland

Land capability subclass: 3w
Suitability: Well suited
Adapted crops: Soybeans
Management concerns:
• Flooding hazard
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Pasture and Forage

Suitability: Poorly suited
Management concerns:
• Flooding sometimes lasting for long duration
• Controlling weeds
Management measures:
• See Use and Management of the Soils, Crops and Pasture Section

Forestland

Suitability: Well suited
Adapted species: Eastern cottonwood, American sycamore, elm, pecan, and sweetgum
Management concerns:
• Flooding hazard
• Plant competition
Management measures:
• Using cultivation and/or chemicals to alleviate undesirable species
• See Use and Management of the Soils, Forest Productivity and Management Section

Residential and Commercial Uses

Dwellings and Small Commercial Buildings

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Septic Tank Absorption Fields

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Impractical or none feasible

Local Roads and Streets

Limitation rating: Very limited
Limitations:
• Flooding hazard
Corrective measures:
• Construction on a raised fill of suitable subgrade or base material
• See Use and Management of the Soils, Engineering, Building Site Development Section

Prime Farmland

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

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

About 99,153 acres in the survey area, or nearly 67 percent of the total acreage, meets the soil requirements for prime farmland. The main crops produced on the prime farmland soils are corn, soybeans, wheat, and hay. These crops account for approximately 71 percent of the county's total agricultural income each year.

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

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

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

Use and Management of the Soils

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

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

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

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

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

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

Interpretive Ratings

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

Rating Class Terms

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

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

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

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

In 2000, nearly 90,000 acres in the survey area was used for crops and pasture. Approximately 83,000 acres, or 92 percent, was used for producing crops consisting mainly of corn, soybeans, and winter wheat (Kentucky Agricultural Statistics Service, 2001). Much of the winter wheat was double cropped with soybeans. The 6,600 acres in pasture and hayland consisted mainly of tall fescue, white clover, and common bermudagrass.

The prime farmland in the county, which is land considered most suitable for growing crops, consists of the nearly level to gently sloping upland areas and the nearly level bottomlands on the Mississippi River flood plain. The moderately steep and steep areas are not prime farmland and, therefore, are commonly used for pasture or woodland. Large areas of woodland on the bottomlands of the Mississippi River flood plain, particularly the Upper Bottom, were cleared and planted to soybeans between 1965 and 1985.

Very few specialty crops are grown in Fulton County, though the soils and climate are quite suited to a wide range of fruits and vegetables. Rice is planted on a limited acreage in the Lower Bottom (fig. 13), but the potential for significantly greater production exists should favorable economic conditions prevail. Bondurant, Keyespoint, Openlake, Roellen, Sharkey, and Tunica soils are all well suited for rice production. Several thousand acres in Fulton County are ideally suited to aquaculture, such as catfish farming, if adequate markets for aquaculture products are developed.

In addition to the topographical features, differences in land-use management and suitability result from differences in soil characteristics such as fertility, erodibility, organic matter content, available water holding capacity, drainage, and flooding. Cropping systems, tillage, and field size are also important parts of efficient crop production systems (Wells, 1992). Extending the latest crop production technology to all of the cropland in the survey area will help increase production and maintain a sustainable soil resource base. The information in this soil survey can facilitate the application of such technology. The following section describes some general principles of soil management that can be applied widely within the survey area.

Managing Cropland

The main management systems needed on cropland are those that protect or improve soil quality, help to control erosion, and minimize the water

Figure 13.—Rice is grown on a limited acreage in Fulton County. Many soils on the Mississippi River flood plain are well suited for rice production.

pollution caused by plant nutrients, soil particles, and agri-chemicals.

The combination of highly erosive silty soils, the intense rainfall pattern, and sloping landscapes contribute to water erosion being a major concern on a significant acreage of Fulton County uplands, particularly areas having slopes of more than about 2 percent. Unless protected, such areas are especially susceptible to erosion of the surface layer rich in humus, organic matter, and plant available nutrients. Unabated, accelerated erosion affects a number of physical, chemical, and biological properties resulting in diminished soil quality. Erosion of the surface layer can result in decreased water infiltration rates, lower available water-holding capacity, decreased soil tilth and workability due to increases in clay content and bulk density, diminished rooting depths, and increased erodibility (Bruce and others, 1995; Frye and others, 1982 and 1983; Hudson, 1994; Mokma and Sietz, 1992; Nizeyimana and Olson, 1988; Rhoton and Tyler, 1990).

Erosion is especially harmful to soils that already have a layer in or below the subsoil that limits the depth of the root zone, such as the fragipan in Calloway, Grenada, and Loring soils. Once water-storage capacity becomes a yield-limiting factor in these soils, it becomes difficult to maintain productivity to the extent that row-crop farming is profitable without irrigation (Rhoton and Tyler, 1990). Erosion is less harmful, though still a concern, on soils that have few root-restricting characteristics, such as Feliciana, Memphis, and Center soils. Applications of fertilizer help to offset the lower fertility caused by erosion, but overcoming much of the damage is difficult or impractical.

In addition to improvements in soil quality, controlling erosion improves water quality by minimizing the pollution of streams due to sedimentation. The quality of water for farm and city uses, wildlife habitat, and recreational uses is enhanced when measures are taken to keep soil erosion in check.

Erosion-control measures generally provide a protective cover of crop residue or vegetation, control runoff, and increase the rate of water infiltration. In Fulton County, erosion is controlled mainly through a combination of cultural and structural practices.

Some of the more commonly used cultural practices include conservation tillage, no-till farming, managing crop residue, crop rotations, contour

Figure 14.—A grassed waterway in an area of Grenada silt loam, 2 to 6 percent slopes, eroded. Where slopes are gentle, establishing a persistent, perennial sod, such as fescue, along natural drainageways helps to control rill and gully erosion.

farming, and using cover crops. Conservation tillage, which includes no-till plantings, minimum tillage, strip tillage, and chisel plowing is very common in the county. Minimizing tillage and leaving crop residue on the surface help to absorb the impact of rainfall, thereby reducing runoff and increasing the rate of water infiltration and trapping of soil particles. In the more sloping areas used for producing corn or soybeans, no-till farming is effective in helping to keep erosion in check (see fig. 4, page 16). Maintaining crop residue on the soil surface improves the water balance within the soil, which is generally the yield-limiting factor with most upland soils in the county.

Crop rotations that alternate cultivated crops from year-to-year help to control erosion. This cultural practice is used quite extensively on the loess uplands in Fulton County via a corn-wheat-soybean rotation. This system allows farmers to produce three crops within a two-year period. In addition to the erosion control benefits, nitrogen fertilizer efficiency is improved along with a significant suppression of soybean cyst nematode populations. Diversified farms that have livestock requiring pasture and hay can reap even greater benefits by including forage crops of grasses and legumes in the cropping rotation system.

Contour farming and contour stripcropping can be used on fields that have smooth, uniform slopes. These practices are most practical and effective on the Grenada, Calloway, and Loring soils that occur within General Soil Map Units 9, 10, 11, and 12 in this publication.

In some areas, structural practices are needed to effectively control rill and gully erosion. Parallel terraces with pipe outlets are effective in controlling erosion by breaking up slope lengths and diverting surface runoff to safe outlets. They generally can be farmed more easily than contour terraces.

In less sloping areas, grassed waterways may be used to control surface runoff and prevent rill and gully erosion. Small, natural drainageways are the best sites for grassed waterways (fig. 14). Grassed

Figure 15a.—A cattle panel grade-stabilization structure during a runoff event. This type of structure helps stabilize outlets for natural drainageways into larger streams and creeks.

waterways are efficient and generally quite economical. Properly installed, they can be easily crossed by farm machinery. Livestock panels and rock chutes are sometimes used in conjunction with a grassed waterway to stabilize outlets that contain a sudden change in elevation (fig. 15a and fig. 15b). These measures have a demonstrated need and use in preventing excessive rill and gully erosion in areas having a particularly high volume of overland flow.

Information about the design and application of erosion-control measures for each kind of soil in the county is available at the local Natural Resources Conservation Service office.

Excessive wetness resulting from poor internal soil drainage is a management concern on about 9 percent of the acreage in Fulton County. Soils that have a seasonal high water table need an adequate drainage system to reduce wetness during the spring. Much of this acreage occurs along Bayou de Chien, Little Bayou de Chien, and the mouth of Mud Creek, which drain the loess uplands. On the Mississippi River flood plain, most of the problem areas occur on depressional, slackwater areas away from the Mississippi River channel.

The design of both surface and subsurface drainage systems varies with the kind of soil. Subsurface drainage systems work well in silty soils, such as Convent, Falaya, and Waverly soils, that have a good outlet to a stream or an open ditch. Conversely, they do not work well in heavy textured soils, such as Keyespoint, Kurk, Mhoon, Openlake, Routon, Sharkey, or Tunica soils, in which water moves slowly through the soil. Surface drains are generally more effective on these slowly permeable soils and should be installed at closer intervals. Other somewhat poorly drained soils, such as Calloway soils, have a hard, compact fragipan in the subsoil. The fragipan limits the depth to which tile drains will function properly; therefore, surface ditches are more commonly used to improve drainage on most areas of these soils.

The poorly drained soils in the survey area are the

Figure 15b.—The runoff has subsided on the cattle panel grade-stabilization structure following the runoff event illustrated on the previous page.

Mhoon, Roellen, Routon, Sharkey, Tunica, and Waverly soils. Adequate drainage is a major factor in managing crops and/or pasture on these soils. Areas that have previously been cleared and are currently used for agricultural production can maintain the current drainage system in order to continue row-crop production or pasture/hayland use. Management of drainage to conform with regulations influencing wetlands may require special permits and extra planning.

Flooding is a potential limiting factor to crop production on about 33,200 acres in Fulton County. The largest acreage occurs on portions of the Mississippi River flood plain not protected by levees, such as the Upper Bottom and Madrid Bend below the escarpment. In addition, the lower reaches of Bayou de Chien, Little Bayou de Chien, Mud Creek, and Rush Creek all experience frequent flooding.

Flooding occurs mostly late in the winter and during the spring months (see fig. 8, page 66). The duration of flooding ranges from several days to several weeks, and a few areas remain flooded until early in the summer. Flooding severely reduces the effective growing season, which in turn, reduces the variety of crops that can be grown. In many areas, the selection of crops is limited to soybeans or grain sorghum. Little can be done to overcome the hazard of flooding. The frequency and duration of flooding should be considered before an attempt is made to cultivate areas that are subject to flooding since some land cannot be profitably farmed with any crop. Drainage ditches help to remove excess water from low areas after the rivers overflow. Before drainage projects are undertaken regulations concerning drainage should be checked.

Soil tilth is an important factor on cropland, primarily because of its influence on seed germination and the infiltration of water into the soil. Soils that have good tilth are granular and porous. In the uplands, most soils used for cultivated crops have a silt loam surface layer that is low in organic matter content. Examples are Calloway, Feliciana, Grenada, Loring, and Memphis soils. Generally, tilling these soils weakens the soil structure and increases the degree of compaction and the extent of surface crusting.

Somewhat poorly drained and poorly drained soils on the bottomlands draining the loess uplands are particularly susceptible to excessive compaction when repeatedly worked under wet conditions. Such soils as Convent, Falaya, Mhoon, and Waverly soils are high in silt content and have low soil strength. Repeated trips across these soils with heavy tillage equipment when they are too wet destroys soil structure and increases the degree of compaction and resulting bulk density, even below the surface layer.

The clayey surface texture of many soils on the bottomlands along the Mississippi River makes tillage difficult. These soils are often referred to locally as ”gumbo.” Some particular examples include Bondurant, Bowdre, Keyespoint, Openlake, Roellen, Sharkey, and Tunica soils. The clayey surface layer of these soils results in high draft for tillage implements, makes preparation of a good seedbed difficult, and hinders seedling emergence. Extremely hard clods form if these soils are not plowed at the correct moisture content. This difficulty in preparing a seedbed often results in poor stands. In some years fall plowing to expose the soil to freezing and thawing and to wetting and drying will improve soil tilth (fig. 16). However, this practice may not be economically feasible if the high fuel and equipment costs involved in plowing this heavy textured soil are considered.

These clayey soils also tend to form hard, compacted plow pans beneath the plow layer if they are worked over long periods with heavy equipment. These plow pans restrict root growth and water infiltration. During farming operations, if heavy equipment is moved across moist soil many times during the year, the formation of a plow pan tends to accelerate. These operations should be limited or consolidated, especially on wet soils, to reduce the formation of plow pans. Practices that increase organic matter content, such as spreading and incorporating crop residue into the soil rather than burning it, help to prevent the formation of plow pans.

A crop production system geared toward systematic additions and management of crop residue, poultry or other animal manures, along with other organic material, can improve soil structure and minimize surface crusting. Organic material is also an important source of nitrogen for crops, and it increases crop tolerance for certain selective herbicides. Increasing surface soil organic matter will improve rainfall infiltration rates and increase the amount of water available for crops. Such a system is critical to sustaining yields on eroded soils, such as those occurring on the loess uplands in Fulton County. In today’s technologically advanced agriculture, the ability of the soil to store water for crop use between significant precipitation events is, in most cases, the yield-limiting factor.

Supplemental irrigation is used on approximately 2,500 acres in Fulton County (USDA, 1997a), and its application is increasing on areas of nearly level to gently sloping cropland. Most irrigation is applied to the Bondurant, Commerce, Convent, Robinsonville,

Figure 16.—A significant acreage of soils on the Mississippi River flood plain, such as the Keyespoint soil as shown here, contain a high clay content in the surface layer, which reduces soil tilth and narrows the range of optimal workability.

and Ware soils on the Mississippi River flood plain in the Lower Bottom (see fig. 12, page 135). Water is obtained from shallow wells in the underlying alluvial aquifer. Ground water in the alluvium of the Mississippi River valley is an abundant resource and could be economically applied to enhance crop production via surface irrigation on a significantly larger acreage than is currently being utilized.

Most of the upland and bottomland soils in the loess belt respond well to additions of fertilizer and lime. Applications of nitrogen, phosphorus, and potassium; ample rainfall; adequate weed control; and other management practices are needed to obtain maximum yields. The pH of these soils is normally strongly acid to neutral. In addition to the inherent acidity of these soils, applications of nitrogen fertilizers for corn and wheat production have an acidifying effect on the upper few inches of the soil profile. Periodic additions of ground agricultural lime are needed to maintain a favorable pH environment for optimum plant growth. A soil pH between 6.4 and 6.8 is best suited for most commonly grown crops in Fulton County.

Most of the soils on the bottomlands along the Mississippi River are high in natural fertility and are moderately acid to mildly alkaline. These soils generally test moderate to high in phosphate and potash; therefore, little or no phosphate or potash needs to be added to most crops. In the Upper Bottom, much of which receives annual additions of new sediment due to flooding, the pH ranges from neutral to slightly alkaline from the surface layer to a depth of 5 feet or more. Therefore, soils in the Upper Bottom do not require agricultural lime to neutralize soil acidity. However, areas in the Lower Bottom and Madrid Bend where corn and wheat are commonly grown have soil pH values that rate as low as moderately acid in the upper surface layers, due in large part to systematic applications of nitrogen fertilizers. Periodic soil tests should be made to ensure that fertility and pH are maintained at optimum levels.

Additions of agricultural lime are most effective when incorporated into the upper 4 to 6 inches of the soil. Coarser textured soils, such as Robinsonville and Ware, need smaller amounts, but more frequent applications, of lime than do finer textured soils, such as Bardwell, Bondurant, Center, Commerce, Grenada, Loring, and Openlake, in order to maintain adequate pH levels. On all soils within the survey area, applications of lime and fertilizer should be based on the results of soil tests, the specific needs of the crop, and the desired target yield level.

Managing Pasture and Hayland

According to the 1997 National Resources Inventory, about 5,600 acres in Fulton County is used for hay and pasture (USDA, 1997b). Approximately 29 percent of the total farm income in the county is derived from the sale of livestock or livestock products (Kentucky Agricultural Statistics Service, 2001). A successful livestock enterprise depends on a forage program that can supply large quantities of quality homegrown feed. A good forage program can furnish as much as 78 percent of the feed required for beef cattle and 66 percent for dairy cattle (Evans and Lacefield, 1977). Most of the pasture and hayland in Fulton County support a mixture of grasses and legumes. Much of the hay is grown in rotation with pasture.

The soils in the survey area vary widely in their ability to produce forage because of differences in the depth to root limiting layers (e.g., fragipan), internal drainage, available water capacity, and other properties. Grasses and legumes and grass-legume combinations vary widely in their ability to persist and provide forage on different soils.

The nearly level to sloping, very deep, well drained soils, such as Feliciana and Memphis soils, should be planted to the highest producing forage species. Such species include alfalfa or a mixture of alfalfa and orchardgrass or of alfalfa and timothy. Sod-forming grasses, such as tall fescue, are needed to minimize erosion on the steeper soils. Moderately well drained soils, such as Center and Grenada soils, are best suited to clover-grass mixtures, or to pure stands of clover or grasses, depending on the intended need and/or use.

The forage species selected for planting should be those that are suited not only to the soil, but also to the intended use. The forage species should provide maximum quality and versatility in the forage program. Legumes generally produce higher quality feed and are more digestible and nutritious than grasses alone. Therefore, they should be used to the maximum extent possible. The taller legumes, such as alfalfa and red clover, are more versatile but less persistent than legumes that are used primarily for grazing, such as white clover. Grasses, such as orchardgrass and timothy, generally should be grown for hay and silage.

In Kentucky, tall fescue is an important cool-season grass that is suited to a wide range of soil conditions. It is grown for both pasture and hay. The growth that occurs from August to November should be permitted to accumulate in the field and “stockpiled” for deferred grazing during late fall and early winter.

A large percentage of Kentucky’s fescue has an endophyte that causes lower animal performance in beef production. Adding legumes, such as red clover or white clover, to fescue pastures helps to offset the problems caused by the endophyte by increasing yields, improving forage quality, reducing production costs via nitrogen fixation, and alleviating the summer slump resulting from pure stands of cool-season grasses. Such improvements in a quality forage program can be made during periodic pasture renovations between the late winter and early spring months. When an area is renovated, the sod is partially destroyed, lime and fertilizer are applied, and desirable forage plants are seeded.

Warm-season grasses are a complimentary addition to many quality western Kentucky forage programs. These grasses are planted from early April to mid-June and provide extra forage during the summer slump period commonly experienced with such cool-season grasses as tall fescue. They grow well during warm periods, with the greatest growth occurring from June to September when the cool-season grasses are at their lowest production levels. Some of the more common warm-season grasses are switchgrass, big bluestem, Eastern gamagrass, Hardie bermudagrass, indiangrass, and Caucasian bluestem.

Additional information on variety selection, establishment techniques, or general pasture and hayland management is available at the local office of the Cooperative Extension Service or Natural Resources Conservation Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. 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 mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

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

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

Crops other than those shown in the 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.

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.

The acreage of soils in each capability class or subclass is shown in table 7. The capability classification of map units in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Forest Productivity and Management

Forest land makes up about 27,700 acres, or 20 percent, of the land area in Fulton County (USDA, 1997b). The county is part of the Western Mesophytic Forest region of Kentucky, a transitional area in which oaks are dominant. Most of the larger continuous tracts of woodland occur on the Bayou de Chien flood plain and lower reaches of Little Bayou de Chien; the loess bluff along the eastern edge of the Mississippi River flood plain; Island Number 8; the northern extension of Reelfoot Lake wildlife management area near the Tennessee line between Kentucky highways 94 and 311; and between the levee and the Mississippi River channel in the Lower Bottom. The areas remaining in woodland in Fulton County are mostly too steep, too wet, or too inaccessible for farming to be practical.

Oak-hickory is the major forest type in Fulton County followed by the elm-ash-red maple forest type (Alerich, 1990). The characteristic trees on the loess uplands are southern red oak, white oak, red maple, sugar maple, yellow-poplar, black oak, and hickory. Bottomlands draining the loess uplands are dominated by sweetgum, red maple, cherrybark oak, green ash, shagbark hickory, American sycamore, American elm, box elder, and pin oak. Bottomlands of the Mississippi River flood plain consist of eastern cottonwood, American elm, American sycamore, green ash, baldcypress, sweetgum, willow oak, box elder, sugarberry, and pecan. The wettest areas of the flood plain are dominated by baldcypress and water tupelo.

Loblolly pine and shortleaf pine have been planted on several small tracts containing severely eroded soils and gullied areas. The trees that occur on such areas have, in many instances, reached pulpwood size, and some trees can be used as poles or pilings. Eastern redcedar and thickets of black locust dominate some of the older, abandoned fields within the survey area.

Farmers and individual landowners own the vast majority of all woodland in Fulton County. A significant acreage of fertile soils on the Mississippi River flood plain in the Upper Bottom north of Hickman is presently owned and being managed for growing trees by the MeadWestvaco Corporation (see fig. 10, page 119). These trees will eventually be used as wood fiber in the paper industry.

In most woodland areas, the soils are well suited to the production of trees. Trees grow fast and produce high yields of good quality timber if the woodlands are properly managed. Good management can improve tree growth, stocking, and quality of the stands. Removing low quality trees in fully stocked and understocked stands, along with regenerating sawtimber stands after harvest, are good management practices.

The wood industry in the county consists of two sawmills that produce rough lumber, crossties, hardwood construction dimension stock, hardwood chips, and slabs. Most of the pulpwood and wood chips produced in Fulton County are shipped to the MeadWestvaco Corporation in Ballard County for use in the paper industry.

The tables 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 forest management.

Forest 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 (Applequist, 1959; Beck, 1962; Broadfoot, 1960, 1963, and 1964; Broadfoot and Krinard, 1959; Coile and Schumacher, 1953; Kinsley and Powell, 1978; Nelson and others, 1961; Olson, 1959; Smalley, 1991; USDA, 1976). 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.

Forest Management

In tables 9a, 9b, 9c, and 9d, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice 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 practice. 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 practice. 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 practice or that extreme measures are needed to overcome the undesirable soil properties.

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 forest management practice (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 for forest management practices. 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 (http://nsscnt.nssc.nrcs.usda.gov/nfm/).

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 erodibility 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 erodibility 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.

Recreation

Hunting and fishing are the more common outdoor recreational activities in Fulton County. Abundant crop fields, meadows, and wooded areas provide habitat for a variety of game. Wooded areas provide good habitat for deer, squirrel, and wild turkey. Some landowners lease such areas to individuals in exchange for the right to hunt upland game, primarily deer. Crop fields and meadows provide excellent habitat for quail, mourning dove, rabbit, and deer.

Approximately 37 miles of the Mississippi River flow along the western periphery of the county, providing more than 12,000 acres of water for fishing and recreation. The bottomland areas of the Mississippi River flyway in Fulton County are popular for waterfowl hunting in the winter. A little more than 2,000 acres of the Reelfoot National Wildlife Refuge exists in Fulton County and is home to a variety of waterfowl and wetland wildlife.

Other outdoor recreational facilities are available, such as golf courses, picnic and sports areas, and community parks.

The soils of the survey area are rated in tables 10a and 10b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

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

The information in the tables can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

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, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

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

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

J. Mason Howell, state biologist, Natural Resources Conservation Service, helped prepare this section.

Fulton County is divided approximately in half between upland areas and alluvial areas associated with flood plains and stream terraces. Upland areas include cropland, pastureland, old fields, and woodland habitats. These habitats, in combination, result in diverse wildlife fauna including game animals, such as cottontail rabbits, bobwhite quail, white-tailed deer, eastern wild turkey, gray squirrel, fox squirrel, and morning dove. Other species include red fox, gray fox, coyote, raccoon, opossum, mink, beaver, skunk, and numerous migratory and nonmigratory songbirds.

Flood plain and terrace habitats were historically dominated by bottomland hardwoods. Much of these

Figure 17.—Old sloughs on the Mississippi River flood plain are important components of wetland wildlife and waterfowl habitat.

forested areas were inundated for different periods and depths throughout the year. Herbaceous wetlands and open water sloughs were also integral components to the flood plain and stream terrace habitats in the county (fig. 17). Today, these areas are composed primarily of cropland interspersed with bottomland hardwood forests. These forested areas and their associated seasonally to semi-permanently flooded areas provide crucial habitat for wetland dependent species. Migratory and nonmigratory waterfowl, including numerous duck and geese species, wading birds, and shorebirds, utilize the shallow water areas, flooded woodland, and flooded cropland in the county. Besides waterfowl, bottomland forests within the county host many reptiles and amphibians, including the rare bird-voiced tree frog and the broad-banded water snake. Neotropical migratory songbirds, including the prothonotary warbler as well as nonmigratory songbirds like the pileated woodpecker, rely upon the diverse vegetation and associated insect life of the bottomland forest to provide cover and food.

Federally listed threatened and endangered species that preside in the county include the bald eagle and the interior least tern. While some bald eagles do nest in the county, most eagles migrate into the county during the winter months. The interior least tern searches out sandbars on islands in the Mississippi River during the spring and summer nesting season.

Conservation practices that benefit habitat for upland wildlife species in general include shrub and hard mast tree plantings, preservation of den trees, native and wildlife-friendly introduced grass plantings, field borders, filter strips, wildlife corridors, wildlife watering holes, and management practices, such as strip disking and mowing. Bottomland habitats can be improved by restoring, creating, or enhancing wetlands, planting hard mast bottomland hardwoods, establishing riparian buffers, and constructing shallow water areas for wildlife.

The above practices should be selected based on the species of management concern, topography, landscape position, and soils. Soils as impacted by topography and landscape position affect the kind and amount of vegetation that is available as food and cover for wildlife. Soil type also determines the types of conservation practices that will be beneficial to wildlife. Soil interpretations for wildlife provide beneficial information on the placement and applicability of certain conservation practices that improve habitat.

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

In table 11, the soils in Fulton County are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

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

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

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

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

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

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

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

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded.

Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

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

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

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

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

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

Land used for cropland, pastureland, or woodland also furnishes quality habitat for many wildlife species when best management practices are applied. Practices that improve habitat on cropland, pastureland, and hayland include filter strips, riparian buffers, field borders, grassed waterways, crop rotation, crop residue management, strip mowing and disking, prescribed grazing, and leaving small areas of unharvested grain next to good cover.

Woodland management practices that are beneficial to wildlife include selective clearing and thinning, edge feathering, planting grasses and legumes on pipeline right-of-ways, firebreaks, open areas, and protecting den trees and quality mast-producing trees.

Conservation practice selection should be made based on the habitat needs of the wildlife to be managed. For detailed information regarding wildlife habitat management see the Natural Resources Conservation Service Upland Wildlife Habitat Management (645) practice standard and the Wetland Wildlife Habitat Management (644) practice standard. Trained professionals from the Kentucky Department of Fish and Wildlife Resources, Kentucky Agricultural Extension Service, or the Natural Resources Conservation Service also provide technical assistance in planning or applying wildlife management practices.

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, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 12a and 12b 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

Favorable soil properties and site features are needed for proper functioning of septic tank absorption fields, sewage lagoons, and sanitary landfills. Soil physical properties are particularly important in selecting sites for these facilities. Identifying the limiting soil properties and site features are critical to ensuring proper design and installation of such facilities. Also, those soil properties that affect ease of excavation or installation of these facilities will be of interest to contractors and local officials.

Table 13 shows 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 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).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to 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, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard 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 permeability, 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, permeability, 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 permeability 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

Table 14 gives information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and *gravel* 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 the table, 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.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

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.

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).

Water Management

Table 15 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 permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

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 about 5 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 ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 16 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

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.

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.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical and Chemical Properties

Table 17 shows estimates of some physical and 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.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In 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 amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (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 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.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability 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.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major 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.

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 several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

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.

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. Table 18 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

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.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

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, permeability, 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.

Physical and Chemical Analyses of Selected Soils

The results of physical analysis of several typical pedons in the survey area are given in table 20 and the results of chemical analysis in table 21. The data are for soils sampled at carefully selected sites. Unless otherwise indicated, the pedons are typical of the series. They are described in the section “Soil Series and Their Morphology.” Soil samples were analyzed by Kentucky Agricultural Experiment Station, Lexington, Kentucky.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters in diameter. Measurements reported as percent or quantity of unit weight were calculated on an ovendry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods (USDA, 1996).

Coarse materials—(2-75 mm fraction) weight estimates of the percentages of all material less than 75 mm (3B1).
Sand—(0.05-2.0 mm fraction) weight percentages of material less than 2 mm (3A1).
Silt—(0.002-0.05 mm fraction) pipette extraction, weight percentages of all material less than 2 mm (3A1).
Clay—(fraction less than 0.002 mm) pipette extraction, weight percentages of material less than 2 mm (3A1).
Organic carbon—wet combustion. Walkley-Black modified acid-dichromate, ferric sulfate titration (6A1c).
Extractable cations—ammonium acetate pH 7.0, EDTA-alcohol separation; calcium (6N2a), magnesium (6O2a); flame photometry; sodium (6P2a), potassium (6Q2a).
Extractable acidity—barium chloride-triethanolamine IV (6H5a).
Cation-exchange capacity—ammonium acetate, pH 7.0, steam distillation (5A8b).
Cation-exchange capacity—sum of cations (5A3a).
Base saturation—ammonium acetate, pH 7.0 (5C1).
Base saturation—sum of cations, TEA, pH 8.2 (5C3).
Reaction (pH)—1:1 water dilution (8C1f).
Available phosphorus—Bray P-1 (6S3).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 22 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is 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-silty, mixed, active, thermic 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 orders in this survey area are Entisols, Inceptisols, Mollisols, and Alfisols.

Entisols (ents) are mineral soils with little or no evidence of development. They have been affected only slightly by soil-forming processes. An A horizon is the only distinct pedogenic horizon in these soils. Most of the Entisols are on flood plains that receive fresh deposits from flooding.

Udifluvents are usually moist and occur near the Mississippi River channel on the higher portions of the flood plain. They are very deep, well drained soils that have a moderately thick A horizon. Typic Udifluvents are coarse-loamy and contain mixed mineralogy. They include the Robinsonville soils. Aquic Udifluvents, like the typic subgroup, are dominated by brown matrix colors, but contain grayish redoximorphic features in the upper part of the subsoil, indicating the presence of a seasonal high water table within this zone during portions of the year. Collins soils are included in the aquic subgroup of Udifluvents.

Udipsamments occur in similar positions as the Udifluvents, but have a significantly higher sand content throughout the soil profile. They are moist throughout much of the year, but become extremely droughty during the summer and early fall. They include the Crevasse soils on the Mississippi River flood plain.

Udorthents are very deep, well drained soils that have a very thin A horizon. They occur in areas of cut-and-fill associated with road construction and urban development. These soils are not classified below the great group level.

Inceptisols (epts) are mineral soils having altered horizons resulting from pedogenesis. They have ochric epipedons and cambic subsurface horizons. Most of these soils occur on flood plains throughout the survey area.

Aquepts are wet, nearly level soils. They are saturated with water at some period of the year or have been artificially drained. They occur on the lower portions of flood plains, and grayish colors are dominant. Typic Aquepts are gray, poorly drained soils with low to moderate clay content in the subsoil and have mixed mineralogy. These include the Mhoon and Waverly soils. Fluvaquentic Aquepts are better drained than the typic subgroup, containing brown colors immediately below the surface layer in the uppermost part of the subsoil. They include the Commerce, Convent, and Falaya soils. Vertic Aquepts are fine-textured soils dominated by smectitic mineralogy in the upper part of the subsoil. As a result, these soils crack open when dry and swell when wet. Such soils include Keyespoint and Openlake soils on broad, low-lying alluvial plains and Tunica soils in slackwater areas of the Mississippi River flood plain.

Udepts are soils dominated with brown colors throughout and are, therefore, not as wet as the Aquepts. Eutrudepts have a low clay content, moderate to high base saturation, and a relatively high content of organic matter. In Fulton County, these soils consist of the well drained Natchez series occurring on the very steep bluffs that parallel the eastern edge of the Mississippi River flood plain. The moderately well drained Fluvaquentic Eutrudepts consist of the Adler series on the flood plain below the Natchez soils and along tributaries draining directly to the Mississippi River.

Mollisols (olls) are mineral soils that have a relatively thick, dark surface layer(s). They are rich in bases and, therefore, have moderate to high base saturation. In the survey area, they also have cambic subsoil horizons.

Aquolls are naturally wet and have grayish colors with brown mottles. They are saturated at some season of the year or are artificially drained. These soils include the Bowdre soils on low-lying, intermediate positions of the Mississippi River flood plain and the Dekoven soils along the Mud Creek flood plain draining the loess uplands in the western part of Fulton County. Vertic Aquolls, like the Vertic Aquepts, are clayey soils that have deep, wide cracks when dry and high shrink-swell properties due to their smectitic mineralogy. The Bondurant and Roellen soils are examples of Aquolls having vertic properties (fig.18). Aquolls in Fulton County have a seasonal water table ranging from 0 to 2 feet during winter and early spring.

Udolls are drier soils than the Aquolls, as evidenced by their dominant brown colors in the cambic subsurface horizons below the mollic epipedon. These are highly productive soils occupying old natural levees, low ridges, and broad areas of higher elevations on the Mississippi River flood plain. The Bardwell and Ware soils are very deep, well drained Hapludolls with mixed mineralogy. Oxyaquic Hapludolls are moderately well drained, having a seasonal water table in the lower part of the subsoil for a month or more (cumulative) during most years. An example is the Phillippy soils.

Alfisols (alfs) are mineral soils with ochric epipedons and an argillic horizon that contains evidence of clay translocation in the subsoil. They are typically acid, but have a moderate to high base saturation.

Epiaqualfs are very deep, poorly drained or somewhat poorly drained alfisols with a thin A horizon. These soils have perched layers of saturation within the upper 2 meters, with periodic saturation generally occurring during the winter and early spring months. These soils occur on nearly level to slightly depressional stream terraces and heads of drainageways. Typic Epiaqualfs are fine-silty, poorly drained soils having mixed mineralogy. They include the Routon soils. Aeric Epiaqualfs have brown colors in the upper part of the subsoil and are better drained than the typic subgroup. They include the Kurk soils.

Fragiudalfs and Fraglossudalfs are very deep, moderately well drained or somewhat poorly drained soils with a root restricting fragipan layer in the subsoil. The fragipan is relatively impermeable to vertical water movement and, therefore, creates a perched ground-water table during the winter and early spring months. These soils occur on nearly level to moderately steep upland ridges and side slopes. They are the most extensive soils in the survey area, comprising about 28 percent of the total area. Oxyaquic Fragiudalfs and Fraglossudalfs both are fine-silty with mixed mineralogy. The Oxyaquic Fragiudalfs contain a moderately thick, yellowish brown or dark brown subsoil above a weak fragipan which, to some degree, restricts plant roots and vertical water movement. They include the Loring soils. The Oxyaquic Fraglossudalfs contain a bit denser, more restrictive fragipan on broader upland

Figure 18.—An area of Bondurant silty clay loam, 0 to 2 percent slopes, protected, exhibiting deep, wide cracks upon drying out in the summer. Bondurant soils have high shrink-swell properties resulting from their relatively high clay content and smectitic mineralogy.

landscape positions. They include the Grenada soils. Aquic Fraglossudalfs are seasonally wet, somewhat poorly drained soils that occur on nearly level and slightly depressional upland summits and gently sloping side slopes. These soils are fine-silty with mixed mineralogy and include the Calloway soils.

Hapludalfs are very deep, well drained and moderately well drained soils that have a moderately thick A horizon and a thick subsoil. The subsoil is commonly brown to yellowish brown. Typic Hapludalfs are well drained, fine-silty soils with mixed mineralogy and a high base saturation throughout. They formed in very thick loess deposits in the western portion of the county. These soils include the Memphis soils on nearly level to steep upland ridges and side slopes in the western half of the county between the Mississippi River bluff and Cayce. Ultic Hapludalfs are similar to the typic subgroup in terms of internal drainage, mineralogy, and soil texture; however, they formed in more shallow loess deposits in the eastern half of Fulton County and exhibit lower base saturation levels in the subsoil. They include the Feliciana soils on gently sloping to steep upland ridges and side slopes east of Little Bayou de Chien. Aquic Hapludalfs are moderately well drained, having brown argillic horizons with grayish redoximorphic features. These soils are fine-silty with mixed mineralogy and include the Center soils on nearly level stream terraces.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 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.

Adler Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Landform: Mississippi River flood plain and its tributaries
Position on the landform: Mississippi River—near the loess bluff; Tributaries—along the higher portions of the flood plain near the channel
Parent material: Nonacid, silty alluvium
Slope range: 0 to 2 percent
Associated soils: Commerce, Convent, and Mhoon
- Commerce soils are somewhat poorly drained and contain more clay throughout
- Convent soils are somewhat poorly drained
- Mhoon soils are poorly drained

Taxonomic class: Coarse-silty, mixed, superactive, thermic Fluvaquentic Eutrudepts

Typical Pedon

Adler silt loam, 0 to 2 percent slopes, protected, in a nearly level cultivated field; 1.6 miles west of Hickman along Kentucky Highway 94 in the Lower Bottom, then south 2,800 feet along a gravel farm road, 1,500 feet south of the intersection of the gravel road with the Illinois Central Gulf Railroad; Hickman 7.5 minute USGS quadrangle; east 978,900 feet and north 96,800 feet by the Kentucky coordinate grid system.

Ap1—0 to 5 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; very friable; many fine roots; neutral (pH 7.3); clear smooth boundary.

Ap2—5 to 9 inches; brown (10YR 4/3) silt loam; moderate fine subangular blocky parting to moderate medium granular structure; very friable; common fine roots; few fine distinct light yellowish brown (2.5Y 6/3) iron depletions; neutral (pH 7.3); clear smooth boundary.

Bw1—9 to 20 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine subangular blocky structure; very friable; few fine roots; common medium distinct light yellowish brown (2.5Y 6/3) iron depletions; few fine distinct brown (7.5YR 4/4) masses of iron accumulation; slightly alkaline (pH 7.5); clear smooth boundary.

Bw2—20 to 29 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky parting to moderate fine subangular blocky structure; very friable; very few fine roots; common medium distinct light yellowish brown (2.5Y 6/3) and common fine distinct light brownish gray (2.5Y 6/2) iron depletions; common fine prominent dark brown (7.5YR 3/2) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; slightly alkaline (pH 7.5); gradual smooth boundary.

Bw3—29 to 39 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; very friable; common medium distinct grayish brown (2.5Y 5/2) iron depletions; many fine prominent dark brown (7.5YR 3/2) and common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; slightly alkaline (pH 7.6); gradual smooth boundary.

Cg1—39 to 47 inches; 50 percent grayish brown (2.5Y 5/2) and 50 percent dark yellowish brown (10YR 4/4) silt loam; massive; stratified; very friable; very few fine roots; many fine prominent strong brown (7.5YR 4/6) masses of iron accumulation; many prominent dark brown (7.5YR 3/2) iron-manganese oxide stains; slightly alkaline (pH 7.6); clear smooth boundary.

Cg2—47 to 60 inches; gray (10YR 5/1) silt loam; massive; very stratified; very friable; many medium prominent dark brown (7.5YR 3/4) and many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; many prominent dark brown (7.5YR 3/2) and black (N 2.5/0) iron-manganese oxide stains; slightly alkaline (pH 7.6); clear smooth boundary.

Cg3—60 to 80 inches; dark gray (10YR 4/1) silt loam; massive; friable; many medium faint gray (10YR 5/1) iron depletions; many medium prominent strong brown (7.5YR 5/6) and dark reddish brown (2.5YR 3/4) masses of iron accumulation; slightly alkaline (pH 7.6).

Range in Characteristics

Solum thickness: 18 to 40 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Reaction—slightly acid to slightly alkaline

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—slightly acid to slightly alkaline

Cg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 4
Texture of the fine-earth fraction—silt loam, loam, or very fine sandy loam
Redoximorphic concentrations and depletions—shades of brown, gray, and black
Reaction—slightly acid to slightly alkaline

Bardwell Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Mississippi River flood plain
Position on the landform: Higher portion of broad, level areas on the flood plain
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Commerce, Crevasse, Phillippy, Robinsonville, and Ware
• Commerce soils are somewhat poorly drained and do not have a mollic epipedon
• Crevasse soils are more sandy throughout and are excessively drained
• Phillippy soils are clayey in the upper part
• Robinsonville and Ware soils are more sandy throughout and are coarse-loamy

Taxonomic class: Fine-silty, mixed, active, thermic Fluventic Hapludolls

Typical Pedon

Bardwell silt loam, 0 to 2 percent slopes (fig. 19), frequently flooded, in a nearly level cultivated field; 4 miles north of Hickman in the Upper Bottom, 0.8 mile northwest of the second bridge over Obion Creek, 300 feet north of a farm road running east-west; Wolf Island 7.5 minute USGS quadrangle; east 998,200 feet and north 125,150 feet by the Kentucky coordinate grid system.

Ap—0 to 8 inches; dark brown (10YR 3/3) silt loam; weak fine and medium granular structure; very

Figure 19.—Profile of Bardwell silt loam. Bardwell soils have a thick, dark surface and are among the most productive soils in Kentucky. The white nail marks the bottom of the mollic epipedon. Depth is marked in inches.

friable; common fine roots; common krotovinas; neutral (pH 7.0); clear smooth boundary.

A—8 to 14 inches; very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; common krotovinas; neutral (pH 7.0); clear smooth boundary.

Bw1—14 to 39 inches; brown (10YR 4/3) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common krotovinas; common distinct dark gray (10YR 4/1) organic stains; neutral (pH 7.0); clear smooth boundary.

Bw2—39 to 53 inches; brown (10YR 4/3) silt loam; moderate medium subangular blocky structure; friable; very few fine roots; few medium prominent strong brown (7.5YR 4/6) masses of iron accumulation; common distinct dark gray (10YR 4/1) organic stains; neutral (pH 7.0); clear smooth boundary.

2C1—53 to 63 inches; brown (10YR 4/3) loam; massive; very friable; common medium prominent gray (10YR 5/1) iron depletions; few medium prominent strong brown (7.5YR 4/6) masses of iron accumulation; neutral (pH 7.0); clear smooth boundary.

2C2—63 to 80 inches; brown (10YR 4/3) fine sandy loam; massive; very friable; common medium prominent gray (10YR 5/1) iron depletions; few medium prominent strong brown (7.5YR 4/6) masses of iron accumulation; neutral (pH 7.0).

Range in Characteristics

Solum thickness: 40 to 60 inches
Thickness of mollic epipedon: 10 to 24 inches

Ap horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam or silty clay loam
Reaction—moderately acid to moderately alkaline

Bw horizon:
Hue—10YR
Value—4
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam or silty clay loam
Reaction—moderately acid to moderately alkaline

2C horizon (and BC and C horizons where present):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam, loam, or fine sandy loam
Reaction—moderately acid to moderately alkaline

Bondurant Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly concave areas
Parent material: Clayey alluvium
Slope range: 0 to 2 percent
Associated soils: Bowdre, Commerce, Keyespoint, Openlake, Phillippy, Sharkey, Tunica, and Ware

- Bowdre soils have a loamy texture within 24 inches
- Commerce soils contain less clay throughout and are fine-silty
- Keyespoint soils have a loamy texture within 40 inches and do not have a mollic epipedon
- Openlake soils do not have a mollic epipedon
- Phillippy soils are at a higher elevation, have a loamy texture within 24 inches of the surface, and are moderately well drained
- Sharkey and Tunica soils are poorly drained
- Ware soils occur at a higher elevation and are coarse-loamy

Taxonomic class: Fine, smectitic, thermic Fluvaquentic Vertic Epiaquolls

Typical Pedon

Bondurant silty clay loam, 0 to 2 percent slopes, protected; 6.4 miles west of Hickman along Kentucky Highway 94 in the Lower Bottom, 1/2 mile west of the junction of Kentucky Highways 311 and 1282, then about 150 feet south of Kentucky Highway 1282 into a cultivated field; Bondurant 7.5 minute USGS quadrangle; east 961,600 feet and north 90,000 feet by the Kentucky coordinate grid system.

Ap1—0 to 3 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak medium granular structure; friable; many fine roots; many earthworm casts; moderately acid (pH 5.7); clear smooth boundary.

Ap2—3 to 11 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate medium subangular blocky structure; firm; common fine roots; common distinct very dark gray (2.5Y 3/1) organic stains; neutral (pH 6.6); abrupt smooth boundary.

A—11 to 20 inches; very dark gray (2.5Y 3/1) silty clay loam, dark gray (2.5Y 4/1) dry; moderate medium subangular blocky structure; very firm; few fine roots; common fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation; slightly acid (pH 6.4); clear smooth boundary.

Bg1—20 to 28 inches; dark grayish brown (2.5Y 4/2) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; few fine roots; common shiny pressure faces; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and common fine distinct dark gray (10YR 4/1) iron depletions on ped faces; moderately acid (pH 5.6); clear smooth boundary.

Bg2—28 to 50 inches; dark grayish brown (2.5Y 4/2) silty clay; dark gray (2.5Y 4/1) ped faces; moderate medium prismatic structure parting to moderate medium angular blocky; very firm; common shiny pressure faces; many medium prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) masses of iron accumulation; strongly acid (pH 5.4); gradual smooth boundary.

2BCg—50 to 67 inches; 50 percent olive brown (2.5Y 4/3) and 50 percent dark gray (2.5Y 4/1) clay loam; weak medium subangular blocky structure; firm; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; moderately acid (pH 5.9); clear smooth boundary.

2Cg—67 to 80 inches; gray (10YR 5/1) very fine sandy loam; massive; very friable; many coarse prominent brown (10YR 4/3) and few medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; slightly acid (pH 6.1).

Range in Characteristics

Solum thickness: 60 to 80 inches
Thickness of mollic epipedon: 10 to 23 inches

Ap horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silty clay loam
Reaction—strongly acid to slightly alkaline

A horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silty clay loam or silty clay
Reaction—strongly acid to slightly alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2
Texture of the fine-earth fraction—silty clay loam, silty clay, or clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—strongly acid to slightly alkaline

2BCg horizon (and 2Bg horizon where present):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam, silty clay loam, or clay loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

2Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 3
Texture of the fine-earth fraction—loam, very fine sandy loam, fine sandy loam, or loamy fine sand
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

Bowdre Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Very slow in the upper clayey layers and moderately rapid in the lower loamy layers
Landform: Mississippi River flood plain
Position on the landform: Broad, nearly level to slightly depressional areas
Parent material: Clayey alluvium over loamy alluvium
Slope range: 0 to 2 percent
Associated soils:, Bardwell, Bondurant, Commerce, Openlake, Phillippy, and Ware

- Bardwell soils are not clayey in the upper part and are well drained
- Bondurant soils are clayey throughout
- Commerce soils are fine-silty
- Openlake soils are clayey throughout and do not have a mollic epipedon
- Phillippy soils are at a higher elevation on old natural levees and are moderately well drained
- Ware soils are at a higher elevation and are coarse-loamy

Taxonomic class: Clayey over loamy, smectitic, thermic Fluvaquentic Hapludolls

Typical Pedon

Bowdre silty clay, 0 to 2 percent slopes, frequently flooded; 18.5 miles west of Hickman in Madrid Bend, 4,500 feet west of Washpan Lake, 200 feet southeast of a 90-degree angle tree line below the escarpment; New Madrid 7.5 minute USGS quadrangle; east 893,700 feet and north 91,200 feet by the Kentucky coordinate grid system.

Ap—0 to 6 inches; very dark gray (10YR 3/1) silty clay, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; firm; many fine roots; neutral (pH 6.8); clear smooth boundary.

A—6 to 20 inches; very dark grayish brown (10YR 3/2) silty clay, dark grayish brown (10YR 4/2) dry; moderate medium angular blocky structure; firm; common fine roots; common shiny pressure faces; common medium faint dark gray (10YR 4/1) and grayish brown (10YR 4/2) iron depletions along ped faces; few fine distinct dark brown (7.5YR 3/3) masses of iron accumulation; neutral (pH 7.0); clear smooth boundary.

Bg—20 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many fine prominent brown (7.5YR 4/4) and few fine prominent dark reddish brown (2.5YR 3/3) masses of iron accumulation; many medium distinct dark gray (10YR 4/1) iron depletions; slightly alkaline (pH 7.5); clear smooth boundary.

2BCg—24 to 30 inches; 50 percent grayish brown (2.5Y 5/2) and 50 percent light olive brown (2.5Y 5/3) very fine sandy loam; weak fine subangular blocky structure; very friable; few fine roots; common medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation; few fine distinct gray (10YR 5/1) iron depletions; slightly alkaline (pH 7.5); abrupt smooth boundary.

3Cg1—30 to 48 inches; grayish brown (2.5Y 5/2) loamy fine sand; single grain; very friable; slightly alkaline (pH 7.5); gradual smooth boundary.

3Cg2—48 to 80 inches; grayish brown (2.5Y 5/2) loamy fine sand; single grain; very friable; few coarse distinct gray (10YR 5/1) iron depletions; common medium prominent strong brown (7.5YR 4/6 and 7.5YR 5/6) and common coarse dark yellowish brown (10YR 4/4) masses of iron accumulation in matrix around depletions; slightly alkaline (pH 7.5).

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to layers of contrasting texture: 20 to 36 inches
Thickness of mollic epipedon: 10 to 23 inches

Ap horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silty clay
Reaction—moderately acid to slightly alkaline

A horizon (or AB horizon where present):
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silty clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2
Texture of the fine-earth fraction—silty clay or silty clay loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

2BCg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2
Texture of the fine-earth fraction—silt loam, loam, very fine sandy loam, fine sandy loam, or sandy loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

3Cg horizon (and 3C horizon where present):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 or 3
Texture of the fine-earth fraction—sandy loam, loamy fine sand, fine sand, or sand
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

The Bowdre soils in Fulton County are taxadjuncts to the Bowdre series because the solum thickness is greater than 20 inches, they have vertic properties in the upper part of the particle-size control section, and they have an aquic moisture regime. In this survey area, the Bowdre soils classify as clayey over loamy, smectitic over mixed, superactive, thermic Fluvaquentic Vertic Endoaquolls.

Calloway Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate above the fragipan and slow in the fragipan
Landform: Upland
Position on the landform: Broad, smooth to slightly concave summits and heads of drainageways and, to a limited extent, gently sloping side slopes
Parent material: Thick loess deposits
Slope range: 0 to 4 percent
Associated soils: Feliciana, Grenada, Loring, and Routon

• Feliciana soils are well drained and do not have a fragipan
• Grenada and Loring soils are moderately well drained
• Routon soils are poorly drained and do not have a fragipan

Taxonomic class: Fine-silty, mixed, active, thermic Aquic Fraglossudalfs

Typical Pedon

Calloway silt loam, 0 to 2 percent slopes, on a smooth 1 percent slope in a cultivated field; 0.5 mile north of the junction of the Purchase Parkway and U.S. Highway 51 at Fulton, then 1,400 feet west of U.S. Highway 51; Crutchfield 7.5 minute USGS quadrangle; east 1,076,400 feet and north 85,100 feet by the Kentucky coordinate grid system.

Ap1—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; very friable; many fine roots; common medium distinct grayish brown (10YR 5/2) iron depletions; common fine distinct dark brown (7.5YR 3/3) masses of iron accumulation; slightly acid (pH 6.5); clear smooth boundary.

Ap2—4 to 8 inches; brown (10YR 4/3) silt loam; weak medium granular structure; very friable; many fine roots; few fine faint grayish brown (10YR 5/2) iron depletions; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; few distinct dark brown (7.5YR 3/3) soft iron-manganese stains and nodules; neutral (pH 6.6); clear smooth boundary.

E—8 to 19 inches; brown (10YR 5/3) silt loam; moderate fine subangular blocky structure; very friable; common fine roots; common medium distinct light brownish gray (10YR 6/2) iron depletions; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; common distinct dark brown (7.5YR 3/3) soft iron-manganese stains and nodules; neutral (pH 6.6); clear smooth boundary.

Eg—19 to 30 inches; light brownish gray (10YR 6/2) silt loam; moderate fine subangular blocky structure; very friable; very few fine roots; many fine and medium prominent strong brown (7.5YR 5/6) and common medium distinct brown (10YR 5/3) masses of iron accumulation; many distinct dark brown (7.5YR 3/3) manganese stains and nodules; moderately acid (pH 5.8); clear irregular boundary.

Btx1/Eg—30 to 50 inches; 60 percent strong brown (10YR 4/6) silty clay loam (Btx); weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; very few fine roots along prism faces; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; many distinct gray (7.5YR 5/1) and brown (7.5YR 5/2) clay skins on faces of prisms; compact and brittle; 40 percent light brownish gray (10YR 6/2) silt loam as tongues between prisms (Eg); weak fine and medium subangular blocky structure; very friable; many distinct dark brown (7.5YR 3/3) manganese stains and nodules; strongly acid (pH 5.2); gradual smooth boundary.

Btx2—50 to 60 inches; strong brown (10YR 4/6) silt loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; many medium prominent light brownish gray (10YR 6/2) iron depletions; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; many distinct gray (7.5YR 5/1) and brown (7.5YR 5/2) clay skins on faces of prisms; common prominent light gray (10YR 7/1) clay depletions on prism faces; compact and brittle; strongly acid (pH 5.2); gradual smooth boundary.

BC—60 to 80 inches; strong brown (10YR 4/6) silt loam; weak coarse subangular blocky structure; friable; many medium prominent light brownish gray (10YR 6/2) iron depletions; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; common prominent light gray (10YR 7/1) clay depletions; common prominent black (N 2.5/0) manganese stains; strongly acid (pH 5.1).

Range in Characteristics

Solum thickness: More than 60 inches
Depth to fragipan: 18 to 36 inches

Ap horizon:
Hue—10YR
Value—4
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid, unless limed

E horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 or 4
Redoximorphic concentrations and depletions—shades of brown and gray
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid, unless limed

Eg horizon:
Hue—10YR or 2.5Y
Value—6 or 7
Chroma—1 or 2
Redoximorphic concentrations and depletions—shades of gray and brown
Texture of the fine-earth fraction—silt or silt loam
Reaction—very strongly acid to moderately acid

Btx/Eg horizon:
Hue—10YR or 2.5Y
Value—4 or 5 (Btx); 6 or 7 (Eg)
Chroma—2 to 6 (Btx); 1 or 2 (Eg)
Redoximorphic concentrations and depletions—shades of brown and gray
Texture of the fine-earth fraction—silt loam or silty clay loam (Btx); silt or silt loam (Eg)
Reaction—very strongly acid to moderately acid

Btx horizon and Bx horizon (where present):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Redoximorphic concentrations and depletions—shades of brown and gray
Texture of the fine-earth fraction—silt loam or silty clay loam
Reaction—very strongly acid to moderately acid

BC horizon:
Hue—10YR or 2.5Y
Value— 4 or 5
Chroma—4 to 6
Redoximorphic concentrations and depletions—shades of gray
Texture of the fine-earth fraction—silt loam
Reaction—strongly acid to slightly alkaline

Center Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part
Landform: Stream terrace
Position on the landform: Higher, nearly level to gently undulating positions
Parent material: Silty alluvium and loess
Slope range: 0 to 3 percent
Associated soils: Calloway and Grenada—on adjacent uplands; Convent and Dekoven—on flood plains; Kurk and Routon—on other portions of stream terraces

- Calloway and Grenada soils formed in thick loess deposits and have a fragipan
- Convent soils do not have an argillic horizon
- Dekoven soils have a mollic epipedon, are poorly drained, and do not have an argillic horizon
- Kurk soils are somewhat poorly drained
- Routon soils are poorly drained

Taxonomic class: Fine-silty, mixed, active, thermic Aquic Hapludalfs

Typical Pedon

Center silt loam, 0 to 3 percent slopes, on a nearly level 1 percent slope in a cultivated field; 7.5 miles southeast of Hickman along Kentucky Highway 166 (middle road), 0.5 mile southeast of where the natural gas pipelines cross Kentucky Highway 166 on the east side of Mud Creek; Cayce 7.5 minute USGS quadrangle; east about 1,021,300 feet and north 82,200 feet by the Kentucky coordinate grid system.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; very friable; many fine roots; few medium distinct dark brown (7.5YR 3/2) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; few medium faint grayish brown (10YR 5/2) iron depletions; moderately acid (pH 5.6); clear smooth boundary.

Bt1—10 to 15 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; very friable; common fine roots; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation; few medium distinct light yellowish brown (2.5Y 6/3) iron depletions; few faint discontinuous clay skins on ped interiors; few prominent soft dark brown (7.5YR 3/2) iron-manganese concretions; moderately acid (pH 5.6); clear smooth boundary.

Bt2—15 to 21 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; very friable; few fine roots; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation; common medium distinct light brownish gray (2.5Y 6/2) and light yellowish brown (2.5Y 6/3) iron depletions; few faint discontinuous clay skins on ped interiors; few prominent soft dark brown (7.5YR 3/2) iron-manganese concretions; moderately acid (pH 5.6); clear smooth boundary.

Bt3—21 to 38 inches; 40 percent yellowish brown (10YR 5/6), 30 percent light olive brown (2.5Y 5/3), and 30 percent light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common medium prominent strong brown (7.5YR 5/6) and dark brown (7.5YR 3/2) masses of iron accumulation; common distinct light gray (2.5Y 7/2) clay depletions on ped faces (N 7/0 dry); many distinct gray (2.5Y 5/1) clay skins along ped faces; common prominent soft dark brown (7.5YR 3/2) iron-manganese concretions; strongly acid (pH 5.3); gradual smooth boundary.

Bt4—38 to 48 inches; 50 percent yellowish brown (10YR 5/6) and 50 percent light olive brown (2.5Y 5/3) silt loam; moderate medium subangular blocky structure; friable; very few fine roots; common medium prominent strong brown (7.5YR 5/6) and dark brown (7.5YR 3/2) masses of iron accumulation; many medium distinct light brownish gray (10YR 6/2) iron depletions; common distinct light gray (2.5Y 7/2) clay depletions on ped faces (N 7/0 dry); many distinct gray (2.5Y 5/1) clay skins along ped faces; common prominent soft dark brown (7.5YR 3/2) iron-manganese concretions; moderately acid (pH 5.6); gradual smooth boundary.

BC—48 to 80 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent light olive brown (2.5Y 5/3) silt loam; weak coarse subangular blocky structure; friable; very few fine roots; common medium prominent strong brown (7.5YR 5/6) and dark brown (7.5YR 3/2) masses of iron accumulation; many medium distinct light brownish gray (10YR 6/2) iron depletions; common distinct light gray (2.5Y 7/2) clay depletions on ped faces (N 7/0 dry); common prominent soft dark brown (7.5YR 3/2) iron-manganese concretions; moderately acid (pH 5.9).

Range in Characteristics

Solum thickness: 40 to 60 inches or more

Ap horizon:
Hue—10YR
Value—4
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—strongly acid to slightly acid, unless limed

Bt horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction— strongly acid to slightly acid

BC horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

Collins Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Landform: Flood plain draining loess upland (in the easternmost part of the county)
Position on the landform: Along smaller creeks and streams
Parent material: Silty alluvium
Slope range: 0 to 2 percent
Associated soils: Falaya and Waverly
- Falaya soils are somewhat poorly drained
- Waverly soils are poorly drained

Taxonomic class: Coarse-silty, mixed, active, acid, thermic Aquic Udifluvents

Typical Pedon

Collins silt loam, 0 to 2 percent slopes, occasionally flooded, in a nearly level cultivated field; 3.2 miles north of Fulton along U.S. Highway 51 to the intersection with Dillion Road, then 4,800 feet east along Dillion Road, then 500 feet south into the field; Crutchfield 7.5 minute USGS quadrangle; east 1,076,500 feet and north 97,300 feet by the Kentucky coordinate grid system.

Ap1—0 to 7 inches; brown (10YR 4/3) silt loam; weak fine and medium granular structure; very friable; common fine roots; slightly acid; abrupt smooth boundary.

Ap2—7 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; very friable; few fine roots; few prominent black (N 2.5/0) carbonaceous stains throughout; very strongly acid; clear smooth boundary.

Bw—12 to 19 inches; yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; friable; few fine roots; common medium distinct light brownish gray (10YR 6/2) and pale brown (10YR 6/3) iron depletions; very strongly acid; clear smooth boundary.

C1—19 to 30 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; very few fine roots; many coarse distinct light brownish gray (10YR 6/2) iron depletions; few medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; few distinct light gray (10YR 7/2) clay depletions throughout; very strongly acid; clear smooth boundary.

C2—30 to 42 inches; dark yellowish brown (10YR 4/4) silt loam; massive; friable; common medium distinct light brownish gray (10YR 6/2) iron depletions; few distinct light gray (10YR 7/2) clay depletions throughout; very strongly acid; clear smooth boundary.

C3—42 to 80 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent light brownish gray (10YR 6/2) silt loam; massive; friable; common coarse distinct yellowish brown (10YR 5/6) masses of iron accumulation; very strongly acid.

Range in Characteristics

Solum thickness: 15 to 30 inches

Ap horizon:
Hue—10YR
Value—4
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam or, less commonly, loam
Reaction—very strongly acid or strongly acid throughout, unless limed

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—very strongly acid or strongly acid throughout

C horizon (and BC horizon where present):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—very strongly acid or strongly acid throughout

Cg horizon (where present):
Hue—10YR or 2.5Y
Value—6 or 7
Chroma—1 or 2
Texture of the fine-earth fraction—silt or silt loam
Redoximorphic concentrations and depletions—shades of brown
Reaction—very strongly acid or strongly acid throughout

The Collins soils in Fulton County are taxadjuncts to the Collins series because they have a cambic subsoil horizon. This difference, however, does not affect the use and management of the soils. In this survey area, the Collins soils are coarse-silty, mixed, active, thermic Fluvaquentic Dystrudepts.

Commerce Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly concave areas
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Bardwell, Bondurant, Bowdre, Keyespoint, Openlake, Phillippy, Robinsonville, and Ware

- Bardwell soils have a mollic epipedon and are well drained
- Bondurant soils have a mollic epipedon and are clayey to 4 feet
- Bowdre and Keyespoint soils are clayey in the upper part
- Openlake soils are clayey throughout
- Phillippy soils are at a higher elevation on old natural levees and are clayey in the upper part
- Robinsonville and Ware soils are at a higher elevation and are coarse-loamy

Taxonomic class: Fine-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Commerce silt loam, 0 to 2 percent slopes, protected, in a nearly level cultivated field; 6 miles west of Hickman along Kentucky Highway 94 in the Lower Bottom, then 4,200 feet north of the intersection of Running Slough with Kentucky Highway 94; Bondurant 7.5 minute USGS quadrangle; east 956,300 feet and north 106,700 feet by the Kentucky coordinate grid system.

Ap1—0 to 4 inches; dark brown (10YR 3/3) silt loam; moderate medium granular structure; friable; common fine roots; common krotovinas; neutral (pH 6.8); clear smooth boundary.

Ap2—4 to 11 inches; dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; friable; few fine roots; common krotovinas; neutral (pH 6.8); clear smooth boundary.

Bg1—11 to 17 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct gray (2.5Y 5/1) iron depletions; neutral (pH 6.8); clear smooth boundary.

Bg2—17 to 25 inches; 50 percent dark grayish brown (2.5Y 4/2) and 50 percent gray (2.5Y 5/1) silt loam; moderate medium subangular blocky structure; firm; very few fine roots; common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation; neutral (pH 6.8); clear smooth boundary.

Bg3—25 to 43 inches; dark gray (2.5Y 4/1) silty clay loam; weak medium subangular blocky structure parting to moderate fine subangular blocky; firm; common medium faint dark grayish brown (2.5Y 4/2) iron depletions; common medium prominent brown (7.5YR 4/3) masses of iron accumulation; slightly acid (pH 6.5); clear smooth boundary.

Cg—43 to 80 inches; dark grayish brown (2.5Y 4/2) silt loam; massive; friable; many medium distinct dark gray (2.5Y 4/1) iron depletions; many medium distinct brown (7.5YR 4/4) masses of iron accumulation; neutral (pH 6.8).

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to dominant chroma of 2 or less: 14 to 20 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam, loam, or silty clay loam
Redoximorphic concentrations and depletions—shades of brown, gray, and red
Reaction—slightly acid to moderately alkaline

Cg horizon (and BCg horizon where present):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam, loam, silty clay loam, fine sandy loam, or very fine sandy loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—slightly acid to moderately alkaline

Convent Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Mississippi River flood plain and its tributaries
Position on the landform: Mississippi River flood plain—near the loess bluff; tributaries—nearly level to slightly concave areas
Parent material: Nonacid, silty alluvium
Slope range: 0 to 2 percent
Associated soils: Adler, Commerce, Dekoven, and Mhoon

- Adler soils are moderately well drained
- Commerce soils contain more clay throughout and are fine-silty
- Dekoven soils have a mollic epipedon and are fine-silty
- Mhoon soils are poorly drained

Taxonomic class: Coarse-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Convent silt loam, 0 to 2 percent slopes, occasionally flooded, in a nearly level cultivated field; 2 miles west of Cayce along Kentucky Highway 94, then south 1.3

miles along Kentucky Highway 1127, 600 feet east of the highway on the south side of Mud Creek; Cayce 7.5 minute USGS quadrangle; east 1,024,400 feet and north 93,300 feet by the Kentucky coordinate grid system.

Ap1—0 to 5 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; very friable; many fine roots; common medium distinct grayish brown (2.5Y 5/2) iron depletions; few fine prominent strong brown (7.5YR 4/6) and distinct dark brown (7.5YR 3/2) masses of iron accumulation; slightly acid (pH 6.5); clear smooth boundary.

Ap2—5 to 10 inches; olive brown (2.5Y 4/3) silt loam; weak medium platy and weak coarse granular structure; very friable; common fine roots; common medium distinct light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) iron depletions; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation; neutral (pH 7.0); gradual smooth boundary.

Bw—10 to 19 inches; olive brown (2.5Y 4/3) silt loam; weak medium subangular blocky structure parting to moderate fine subangular blocky; very friable; few fine roots; common medium distinct light brownish gray (10YR 6/2) and grayish brown (2.5Y 5/2) iron depletions; common medium prominent strong brown (7.5YR 5/6) and few fine prominent yellowish red (5YR 4/6) masses of iron accumulation on surfaces along pores; few prominent black (N 2.5/0) iron-manganese oxide stains; neutral (pH 7.0); gradual smooth boundary.

BCg—19 to 23 inches; 55 percent grayish brown (2.5Y 5/2) and 45 percent olive brown (2.5Y 4/3) silt loam; weak fine subangular blocky; very friable; many medium distinct light brownish gray (10YR 6/2) iron depletions; many medium prominent strong brown (7.5YR 5/6) and few fine prominent yellowish red (5YR 4/6) masses of iron accumulation on surfaces along pores; many prominent black (N 2.5/0) iron-manganese oxide stains; neutral (pH 7.0); clear smooth boundary.

Cg1—23 to 29 inches; grayish brown (2.5Y 5/2) silt loam; massive; very friable; many medium distinct light brownish gray (10YR 6/2) iron depletions; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; many prominent black (N 2.5/0) iron-manganese oxide stains; neutral (pH 6.8); clear smooth boundary.

Cg2—29 to 45 inches; gray (2.5Y 5/1) silt loam; massive; very friable; many medium prominent strong brown (7.5YR 5/6) and common fine prominent yellowish red (5YR 4/6) masses of iron accumulation; many prominent black (N 2.5/0) iron-manganese oxide stains; slightly acid (pH 6.5); abrupt smooth boundary

Ab—45 to 60 inches; 50 percent very dark grayish brown (10YR 3/2) and 50 percent dark gray (10YR 4/1) silt loam; massive; friable; many fine prominent strong brown (7.5YR 5/6) and dark reddish brown (2.5YR 3/4) and common fine prominent dusky red (10R 3/4) masses of iron accumulation; moderately acid (pH 6.0); clear smooth boundary.

Cgb—60 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; common distinct black (N 2.5/0) manganese or iron-manganese stains and few nodules throughout; neutral (pH 6.6).

Range in Characteristics

Solum thickness: 18 to 30 inches
Depth to dominant chroma of 2 or less: 14 to 20 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—slightly acid to moderately alkaline

Bw horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown, gray, and red
Reaction—slightly acid to moderately alkaline

BCg horizon (and Bg horizon where present):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown, gray, and black
Reaction—slightly acid to moderately alkaline

Cg and Cgb horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2

Texture of the fine-earth fraction—silt loam, loam, or very fine sandy loam
Redoximorphic concentrations and depletions—shades of brown, gray, and black
Reaction—slightly acid to moderately alkaline

Ab horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and red
Reaction—slightly acid to moderately alkaline

Crevasse Series

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Landform: Mississippi River flood plain
Position on the landform: Along the banks of the Mississippi River, flood-plain splays, and point bars
Parent material: Sandy alluvium
Slope range: 0 to 3 percent
Associated soils: Bardwell, Commerce, Robinsonville, and Ware
• Bardwell soils are fine-silty and have a mollic epipedon
• Commerce soils are somewhat poorly drained and are fine-silty
• Robinsonville and Ware soils have finer textures throughout and are coarse-loamy

Taxonomic class: Mixed, thermic Typic Udipsamments

Typical Pedon

Crevasse loamy fine sand, 0 to 3 percent slopes, occasionally flooded; 4,000 feet west of Watson Lake in Madrid Bend in the southernmost portion of Watson Point and northeast of Kentucky Point Bar; New Madrid 7.5 minute USGS quadrangle; east 886,000 feet and north 97,300 feet by the Kentucky coordinate grid system.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) loamy fine sand; weak medium granular structure; very friable; common fine roots; slightly alkaline (pH 7.4); clear smooth boundary.
AC—4 to 7 inches; dark brown (10YR 4/3) loamy fine sand; weak medium granular structure; very friable; common fine roots; slightly alkaline (pH 7.4); abrupt smooth boundary.
C1—7 to 16 inches; brown (10YR 5/3) fine sand; single grain; loose; slightly alkaline (pH 7.5); abrupt smooth boundary.
C2—16 to 80 inches; pale brown (10YR 6/3) sand; single grain; loose; neutral (pH 7.3).

Range in Characteristics

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—loamy fine sand and silt loam
Reaction—moderately acid to moderately alkaline

AC horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction— loam, fine sandy loam, or loamy fine sand
Reaction—moderately acid to moderately alkaline

C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—loamy fine sand, loamy sand, fine sand, or sand
Reaction—moderately acid to moderately alkaline

Dekoven Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Landform: Flood plain tributaries to the Mississippi River that drain loess uplands
Position on the landform: Nearly level to slightly depressional areas along streams and creeks
Parent material: Silty alluvium
Slope range: 0 to 2 percent
Associated soils: Adler, Convent, and Mhoon—on similar positions; Center, Kurk, and Routon—on nearby stream terraces
• Adler soils are moderately well drained and do not have a mollic epipedon
• Center, Kurk, and Routon soils are in higher positions, have an argillic horizon, and do not have a mollic epipedon
• Mhoon soils are poorly drained and do not have a mollic epipedon

Taxonomic class: Fine-silty, mixed, superactive, thermic Typic Endoaquolls

Figure 20.—Profile of Dekoven silt loam with a 14-inch layer of brown overwash. Most areas of the Dekoven soil have been drained and are used for producing corn and soybeans. Depth is marked in inches.

Typical Pedon

Dekoven silt loam, drained, 0 to 2 percent slopes (fig. 20), occasionally flooded, in a cultivated field; 4.7 miles east of Hickman along Kentucky Highway 94, 0.9 mile south of the junction of Kentucky Highways 94 and 1129, then 200 feet west of Kentucky Highway 1129; Cayce 7.5 minute USGS quadrangle; east 1,015,500 feet and north 99,900 feet by the Kentucky coordinate grid system.

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; very friable; many fine roots; neutral (pH 6.8); abrupt smooth boundary.

A—7 to 20 inches; very dark gray (2.5Y 3/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; common fine roots; few fine prominent dark brown (7.5YR 3/4) masses of iron accumulation; neutral (pH 6.6); clear smooth boundary.

Bg1—20 to 27 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many coarse distinct light olive brown (2.5Y 5/4) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) iron-manganese stains and nodules throughout; neutral (pH 7.0); gradual smooth boundary.

Bg2—27 to 44 inches; dark gray (2.5Y 4/1) silt loam; moderate medium subangular blocky structure; friable; very few fine roots; common fine and medium prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) and many medium distinct olive brown (2.5Y 4/3) masses of iron accumulation; common prominent black (N 2.5/0) iron-manganese stains and nodules throughout; neutral (pH 7.0); gradual smooth boundary.

BCg—44 to 62 inches; 50 percent grayish brown (2.5Y 5/2) and 50 percent light brownish gray (2.5Y 6/2) silt loam; weak coarse subangular blocky structure; friable; many fine prominent strong brown (7.5YR 5/6) and many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; many medium distinct dark gray (2.5Y 4/1) iron depletions in pores; common prominent black (N 2.5/0) iron-manganese stains and nodules throughout; neutral (pH 7.2); clear smooth boundary.

Cg1—62 to 68 inches; dark gray (2.5Y 4/1) silt loam; massive; friable; many fine prominent strong brown (7.5YR 5/6) and many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; many prominent black (N 2.5/0) iron-manganese stains and few nodules throughout; neutral (pH 7.2); clear smooth boundary.

Cg2—68 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) manganese or iron-manganese stains and few nodules throughout; neutral (pH 7.3).

Range in Characteristics

Solum thickness: 40 to 80 inches
Thickness of mollic epipedon: 10 to 23 inches

Ap and A horizons:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Reaction—slightly acid to moderately alkaline

Overwash layer (where present):
Hue—10YR or 2.5Y
Value—4
Chroma—3 or 4
Texture of the fine-earth fraction—silt loam
Reaction—slightly acid to moderately alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown, red, and gray
Reaction—slightly acid to moderately alkaline

BCg and Cg horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—slightly acid to moderately alkaline

Falaya Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Landform: Flood plain (in the easternmost part of the county)
Position on the landform: Slightly depressional areas along streams and creeks
Parent material: Silty alluvium
Slope range: 0 to 2 percent
Associated soils: Collins and Waverly
- Collins soils are moderately well drained
- Waverly soils are poorly drained

Taxonomic class: Coarse-silty, mixed, active, acid, thermic Aeric Fluvaquents

Typical Pedon

Falaya silt loam, 0 to 2 percent slopes, occasionally flooded, in a nearly level cultivated field; 3,600 feet north of the intersection of the Purchase Parkway and Kentucky Highway 307, then 1,500 feet east into a narrow bottom on the west side of Harris Fork Creek; Water Valley 7.5 minute USGS quadrangle; east 1,084,500 feet and north 86,400 feet by the Kentucky coordinate grid system.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam; weak medium granular structure; very friable; common fine roots; neutral; clear smooth boundary.

Bw—8 to 14 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure parting to moderate medium granular; friable; few fine roots; common fine distinct light brownish gray (10YR 6/2) iron depletions; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation; slightly acid; clear smooth boundary.

Bg—14 to 24 inches; light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; friable; common medium prominent brown (10YR 5/3) and strong brown (7.5YR 5/6) masses of iron accumulation; few distinct black (N 2.5/0) manganese or iron-manganese stains and concretions throughout; neutral; gradual smooth boundary.

Cg1—24 to 33 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; common fine and medium prominent strong brown (7.5YR 4/6) masses of iron accumulation; few distinct black (N 2.5/0) manganese or iron-manganese stains and concretions throughout; very strongly acid; gradual smooth boundary.

Cg2—33 to 52 inches; gray (10YR 6/1) silt loam; massive; friable; few fine prominent dark brown (7.5YR 4/4) and common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; few distinct black (N 2.5/0) manganese or iron-manganese stains and concretions throughout; very strongly acid; clear smooth boundary.

Bwb—52 to 80 inches; 60 percent brown (10YR 5/3) and 40 percent light brownish gray (10YR 6/2) silt loam; massive; firm; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few distinct black (N 2.5/0) manganese or iron-manganese stains throughout; very strongly acid.

Range in Characteristics

Depth to dominant chroma of 2 or less: 14 to 20 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid or strongly acid, unless limed

Bw horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—very strongly acid or strongly acid, unless limed

Bg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown, red, and gray
Reaction—very strongly acid or strongly acid, unless limed

Cg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and yellow
Reaction—very strongly acid or strongly acid

Bwb horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—very strongly acid or strongly acid

The Falaya soils in Fulton County are taxadjuncts to the Falaya series because they have a cambic subsoil horizon. This difference, however, does not affect the use and management of the soils. In this survey area, the Falaya soils are coarse-silty, mixed, active, thermic Fluvaquentic Endoaquepts.

Feliciana Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Upland (throughout the eastern half of Fulton County)
Position on the landform: Ridgetops and side slopes
Parent material: Thick loess
Slope range: 2 to 30 percent
Associated soils: Calloway, Grenada, and Loring
• Calloway soils are somewhat poorly drained and occupy broader, flatter landscapes at a lower elevation
• Grenada and Loring soils are moderately well drained and have a fragipan

Taxonomic class: Fine-silty, mixed, active, thermic Ultic Hapludalfs

Typical Pedon

Feliciana silt loam, 2 to 6 percent slopes (fig. 21), on a slightly convex ridgetop averaging 3 percent slope in a meadow of fescue; 1 mile east of Crutchfield, 300 feet east of the junction of U.S. Highway 51 and Veach-Howell Road, then 100 feet south into the field; Crutchfield 7.5 minute USGS quadrangle; east 1,070,100 feet and north 103,500 feet by the Kentucky coordinate grid system.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine roots; slightly acid (pH 6.5); clear smooth boundary.
Bt1—8 to 12 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; few faint dark brown (7.5YR 3/4) clay skins on faces of peds; moderately acid (pH 6.0); gradual smooth boundary.
Bt2—12 to 35 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct

brown (7.5YR 4/3) clay skins on faces of peds; few prominent pockets of pale brown (10YR 6/3) clay depletions on faces of peds; few prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; moderately acid (pH 5.8); gradual smooth boundary.

Bt3—35 to 48 inches; brown (7.5YR 4/4) silt loam; moderate medium subangular blocky structure; friable; few distinct brown (7.5YR 4/3) clay skins on faces of peds; few prominent pale brown (10YR 6/3) clay depletions on faces of peds; common prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; moderately acid (pH 5.8); gradual smooth boundary.

Bt4—48 to 66 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; few distinct brown (7.5YR 4/3) clay skins on faces of peds; common prominent pale brown (10YR 6/3) clay depletions on faces of peds; few prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; moderately acid (pH 5.8); gradual smooth boundary.

BC—66 to 80 inches; brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure; friable; few prominent pale brown (10YR 6/3) clay depletions on faces of peds; few prominent black (N 2.5/0) manganese or iron-manganese stains on faces of peds; moderately acid (pH 6.0).

Range in Characteristics

Solum thickness: 48 to 80 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid, unless limed

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Reaction—very strongly acid to moderately acid

BC horizon:
Hue—7.5YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid

Grenada Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Landform: Upland
Position on the landform: Broad summits
Parent material: Thick loess
Slope range: 0 to 12 percent
Associated soils: Calloway, Center, Feliciana, Loring, Memphis, and Routon
- Calloway soils are somewhat poorly drained
- Center and Routon soils are on stream terraces and do not have a fragipan
- Feliciana and Memphis soils are well drained and do not have a fragipan
- Loring soils occur at a higher elevation with an appreciably weaker fragipan and do not have a glossic horizon

Taxonomic class: Fine-silty, mixed, active, thermic Oxyaquic Fraglossudalfs

Typical Pedon

Grenada silt loam, 2 to 6 percent slopes (fig. 22), on a smooth 4 percent slope in a cultivated field; 0.85 mile west of Crutchfield along Kentucky Highway 924, then 100 feet south into the cultivated field; Crutchfield 7.5 minute USGS quadrangle; east about 1,060,200 feet and north about 104,400 feet by the Kentucky coordinate grid system.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam; weak medium granular structure; very friable; many fine roots; few medium distinct grayish brown (10YR 5/2) iron depletions; dark brown (7.5YR 3/3) masses of iron accumulation; neutral (pH 6.6); clear smooth boundary.

BA—7 to 13 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; slightly acid (pH 6.5); clear smooth boundary.

Bw—13 to 24 inches; yellowish brown (10YR 4/6) silt loam; moderate medium subangular blocky structure; friable; common fine roots; few fine distinct pale brown (10YR 6/3) clay depletions; few distinct soft brown and black iron-manganese stains; moderately acid (pH 6.0); clear wavy boundary.

E/Bt—24 to 30 inches; 60 percent light brownish gray (10YR 6/2) silt loam (E); moderate fine and medium subangular blocky structure; friable; common fine roots; few distinct soft brown and black iron-manganese stains; 40 percent

Figure 21.—Profile of Feliciana silt loam. Feliciana soils are very deep and well drained as evidenced by their brown, oxidized colors throughout. Depth is marked in feet.

Figure 22.—Profile of Grenada silt loam. Grenada soils have a fragipan in the lower part of the profile, which restricts vertical water movement and root penetration. Depth is marked in inches.

yellowish brown (10YR 5/6) silty clay loam (Bt); few distinct brown (7.5YR 4/3) clay skins on faces of peds; moderately acid (pH 5.8); clear irregular boundary.

Btx1/E—30 to 42 inches; 60 percent strong brown (10YR 4/6) silty clay loam (Btx); weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; compact and brittle; very few fine roots along prism faces; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; many distinct gray (7.5YR 5/1) and brown (7.5YR 5/2) clay skins on faces of prisms; 40 percent light brownish gray (10YR 6/2) silt loam as tongues between prisms (E); weak fine and medium subangular blocky structure; very friable; many distinct dark brown (7.5YR 3/3) manganese stains and nodules; strongly acid (pH 5.5); gradual smooth boundary.

Btx2—42 to 66 inches; brown (7.5YR 4/4) silt loam; moderate very coarse prismatic structure; very firm; compact and brittle; very few fine roots occupying gray zones between prisms; few distinct brown (7.5YR 4/3) clay skins along prism faces; common medium prominent light brownish gray (10YR 6/2) iron depletions; common prominent light gray (10YR 7/1) clay depletions on prism faces; common distinct black (N 2.5/0) manganese stains; moderately acid (pH 5.5); gradual wavy boundary.

Bx—66 to 80 inches; brown (7.5YR 4/4) silt loam; moderate coarse prismatic structure; very firm; compact and brittle; few medium prominent light brownish gray (10YR 6/2) iron depletions; common prominent light gray (10YR 7/1) clay depletions on prism faces; many prominent black (N 2.5/0) manganese or iron-manganese stains on faces of peds; moderately acid (pH 6.0)

Range in Characteristics

Solum thickness: 60 to 80 inches or more
Depth to fragipan: 20 to 36 inches

Ap and BA horizons:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid, unless limed

Bw horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—4 to 6
Redoximorphic concentrations and depletions—shades of brown
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid

E/Bt horizon:
Hue—10YR or 2.5Y
Value—6 or 7 (E); 4 to 6 (Bt)
Chroma—2 or 3 (E); 4 to 6 (Bt)
Redoximorphic concentrations and depletions—shades of brown and gray
Texture of the fine-earth fraction—silt loam or silt (E); silt loam or silty clay loam (Bt)
Reaction—very strongly acid to moderately acid

Btx/E horizon:
Hue—7.5YR or 10YR (Btx); 10YR or 2.5Y (E)
Value—4 or 5 (Btx); 6 or 7 (E)
Chroma—3 to 6 (Btx); 2 or 3 (E)
Redoximorphic concentrations and depletions—shades of brown and gray
Texture of the fine-earth fraction—silt loam or silty clay loam (Btx); silt loam or silt (E)
Reaction—very strongly acid to moderately acid

Btx horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Redoximorphic concentrations and depletions—shades of brown and gray
Texture of the fine-earth fraction—silt loam or silty clay loam
Reaction—very strongly acid to moderately acid

Bx horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Redoximorphic concentrations and depletions—shades of brown and gray
Texture of the fine-earth fraction—silt loam
Reaction—strongly acid to neutral

Keyespoint Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Very slow in the upper clayey layers and moderately rapid in the lower loamy layers
Landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly concave slackwater areas
Parent material: Clayey alluvium over loamy alluvium
Slope range: 0 to 2 percent

Associated soils: Bondurant, Bowdre, Commerce, Openlake, Sharkey, and Tunica
- Bondurant soils contain a mollic epipedon and are clayey throughout the particle-size control section
- Bowdre soils contain a mollic epipedon
- Commerce soils contain less clay throughout and are fine-silty
- Openlake soils are clayey throughout the particle-size control section
- Sharkey and Tunica soils are poorly drained

Taxonomic class: Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Vertic Epiaquepts

Typical Pedon

Keyespoint silty clay loam, 0 to 2 percent slopes, frequently flooded; 4 miles northeast of Hickman in the Upper Bottom, 300 feet west of the area referred to as the 1,000-acre woods; Hickman 7.5 minute USGS quadrangle; east 1,007,800 feet and north 122,000 feet by the Kentucky coordinate grid system.

Ap1—0 to 3 inches; very dark grayish brown (2.5Y 3/2) silty clay loam; weak medium granular structure; friable; common fine roots; common krotovinas; neutral (pH 6.8); clear smooth boundary.

Ap2—3 to 8 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few medium faint dark gray (2.5Y 4/1) iron depletions; common krotovinas; neutral (pH 6.8); clear smooth boundary.

Bg1—8 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay; weak coarse subangular blocky structure parting to moderate fine angular blocky; very firm; very few fine roots; common medium faint dark gray (2.5Y 4/1) iron depletions; few fine prominent yellowish brown (10YR 4/6) masses of iron accumulation; common pressure faces throughout; slightly alkaline (pH 7.5); gradual smooth boundary.

Bg2—24 to 36 inches; dark gray (2.5Y 4/1) silty clay loam; weak medium subangular blocky structure; firm; many medium distinct dark grayish brown (10YR 4/2) masses of iron accumulation; neutral (pH 6.8); clear smooth boundary.

2C1—36 to 44 inches; 55 percent brown (2.5Y 4/3) and 45 percent dark gray (10YR 4/1) loam; massive; friable; slightly acid (pH 6.5); gradual smooth boundary.

2C2—44 to 54 inches; brown (2.5Y 4/3) fine sandy loam; massive; very friable; very few fine roots; few medium faint dark grayish brown (2.5Y 4/2) masses of iron accumulation; neutral (pH 6.8); gradual smooth boundary.

2C3—54 to 80 inches; brown (2.5Y 4/3) fine sandy loam; massive; very friable; neutral (pH 6.8).

Range in Characteristics

Solum thickness: 24 to 38 inches
Depth to layers of contrasting texture: 24 to 40 inches
Depth to dominant chroma of 2: 10 to 20 inches

Ap horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—2 or 3
Texture of the fine-earth fraction—silty clay loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2
Texture of the fine-earth fraction—silty clay loam, silty clay, or clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

2C horizon
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction— clay loam, loam, fine sandy loam, or sandy loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

Kurk Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate in the upper part of the solum and moderately slow in the lower part
Landform: Tributary stream terrace and near the head of upland drainageways
Position on the landform: Slightly depressional areas
Parent material: Silty alluvium and loess
Slope range: 0 to 2 percent
Associated soils: Adler, Convent, Dekoven, and Mhoon—on flood plains; Center and Routon—on stream terraces

- Adler, Convent, Dekoven, and Mhoon soils do not have argillic horizons
- Center soils are moderately well drained
- Routon soils are poorly drained

Taxonomic class: Fine-silty, mixed, active, thermic Aeric Epiaqualfs

Typical Pedon

Typical pedon of Kurk silt loam, 0 to 2 percent slopes, on a smooth 1 percent slope in a cultivated field; 4,000 feet south of the intersection of Kentucky Highway 94 and Little Bayou de Chien, 2.1 miles east of Cayce; Crutchfield 7.5 minute USGS quadrangle; east 1,047,100 feet and north 92,600 feet by the Kentucky coordinate grid system.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; very friable; common fine roots; common fine distinct brown (7.5YR 4/3) masses of iron accumulation; common medium distinct grayish brown (2.5Y 5/2) iron depletions; neutral (pH 7.0); abrupt smooth boundary.

BE—8 to 15 inches; yellowish brown (10YR 5/4) silt loam, light yellowish brown (10YR 6/4) dry; weak fine subangular blocky structure; friable; few fine roots; few fine prominent light brownish gray (2.5Y 6/2) iron depletions; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) iron-manganese stains and soft brown concretions; neutral (pH 6.8); clear smooth boundary.

Btg1—15 to 27 inches; 50 percent light brownish gray (10YR 6/2) and 50 percent grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct brown (7.5YR 5/2) clay skins in pores and along faces of peds; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) manganese stains and concretions; strongly acid (pH 5.5); clear smooth boundary.

Btg2—27 to 42 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct brown (7.5YR 5/2) clay skins in pores and along faces of peds; many medium prominent strong brown (10YR 5/6) and common medium prominent dark brown (7.5YR 3/3) masses of iron accumulation; common prominent black (N 2.5/0) manganese stains and concretions; moderately acid (pH 5.8); gradual smooth boundary.

Btg3—42 to 65 inches; grayish brown (2.5Y 5/2) silt loam; weak medium subangular blocky structure; friable; common faint gray (2.5Y 5/1) clay skins in pores and along faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) manganese stains; slightly acid (pH 6.2); clear smooth boundary.

2BC—65 to 80 inches; 50 percent grayish brown (2.5Y 5/2) and 50 percent yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; firm; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; few prominent black (N 2.5/0) manganese stains; slightly acid (pH 6.5).

Range in Characteristics

Solum thickness: 60 to 80 inches or more
Depth to dominant chroma of 2 or less: 14 to 20 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—slightly acid or neutral, unless limed

BE horizon (and Bw horizon where present):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—slightly acid or neutral, unless limed

Btg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown and red
Reaction—strongly acid to neutral

2BC horizon (and 2C horizon where present):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam, silty clay loam, or loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—strongly acid to slightly alkaline

Loring Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and moderately slow in the fragipan
Landform: Upland
Position on the landform: Ridgetops and side slopes
Parent material: Thick loess
Slope range: 0 to 20 percent
Associated soils: Calloway, Feliciana, Grenada, and Memphis

- Calloway soils occur at a lower elevation and are somewhat poorly drained
- Feliciana and Memphis soils are well drained and do not have a fragipan
- Grenada soils occupy broader upland summits and have a glossic horizon

Taxonomic class: Fine-silty, mixed, active, thermic Oxyaquic Fragiudalfs

Typical Pedon

Loring silt loam, 2 to 6 percent slopes (fig. 23), on a slightly convex ridgetop with 3 percent slope in a cultivated field; 1,900 feet south of the intersection of Kentucky Highway 94 and Kentucky Highway 239 at Cayce, then 300 feet east in the field; Cayce 7.5 minute USGS quadrangle; east 1,036,400 feet and north 95,700 feet by the Kentucky coordinate grid system.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; very friable; many fine roots; moderately acid (pH 5.9); clear smooth boundary.

Bt1—9 to 21 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; common fine roots; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few faint brown (7.5YR 4/2) clay skins on faces of peds; few prominent light yellowish brown (2.5Y 6/3) clay depletions; few prominent black (N 2.5/0) manganese or iron-manganese stains; neutral (pH 6.8); clear smooth boundary.

Bt2—21 to 25 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent brown (7.5YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; common fine roots; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; common fine distinct light brownish gray (10YR 6/2) iron depletions; common distinct light yellowish brown (2.5Y 6/3) clay depletions; few distinct brown (7.5YR 5/2) clay skins on faces of peds; many prominent black (N 2.5/0) iron-manganese stains and concretions; moderately acid (pH 5.6); clear wavy boundary.

Bt3—25 to 31 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; many fine distinct light brownish gray (10YR 6/2) iron depletions; common prominent light yellowish brown (2.5Y 6/3) clay depletions; few distinct brown (7.5YR 5/2) clay skins on faces of peds; common prominent black (N 2.5/0) iron-manganese stains and concretions; very strongly acid (pH 5.0); clear smooth boundary.

Btx—31 to 46 inches; brown (7.5YR 4/4) silt loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; very few fine roots; few fine distinct strong brown (7.5YR 5/6) and many medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation; common medium prominent light brownish gray (10YR 6/2) iron depletions; common prominent light gray (10YR 7/1) clay depletions; common prominent black (N 2.5/0) iron-manganese stains and concretions; slight brittleness in some peds; strongly acid (pH 5.1); gradual smooth boundary.

Bx—46 to 80 inches; brown (7.5YR 4/4) silt loam; weak medium prismatic structure; firm; few fine distinct strong brown (7.5YR 5/6) and many medium distinct light olive brown (2.5Y 5/4) masses of iron accumulation; common medium prominent light brownish gray (10YR 6/2) iron depletions; few prominent light gray (10YR 7/1) clay depletions; common prominent black (N 2.5/0) iron-manganese stains and concretions; slight brittleness in some peds; strongly acid (pH 5.5).

Range in Characteristics

Solum thickness: 60 to 80 inches or more
Depth to fragipan: 18 to 35 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid, unless limed

BA and BE horizons (where present):
Hue—10YR
Value—4 or 5

Chroma—4 to 6
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid, unless limed

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown
Reaction—very strongly acid to moderately acid, unless limed

Btx horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—very strongly acid to moderately acid

Bx horizon (and BC and C horizons where present):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—very strongly acid to moderately acid

Memphis Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Upland (throughout the western half of Fulton County)
Position on the landform: Ridgetops and side slopes
Parent material: Thick loess
Slope range: 0 to 50 percent
Associated soils: Grenada, Loring, and Natchez
• Grenada and Loring soils are moderately well drained and have a fragipan
• Natchez soils occur in similar positions but do not have an argillic horizon and are coarse-silty

Taxonomic class: Fine-silty, mixed, active, thermic Typic Hapludalfs

Typical Pedon

Memphis silt loam, 2 to 6 percent slopes, on a slightly convex ridgetop averaging 3 percent slope in a meadow of fescue; 1.7 miles southeast of Hickman along Kentucky Highway 125, approximately 2,500 feet southwest of the Hickman Country Club; Hickman 7.5 minute USGS quadrangle; east 1,995,800 feet and north 95,750 feet by the Kentucky coordinate grid system.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine roots; slightly acid (pH 6.3); clear smooth boundary.
Bt1—7 to 17 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; common fine roots; few distinct brown (7.5YR 4/3) clay skins on faces of peds; few prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; strongly acid (pH 5.5); clear smooth boundary.
Bt2—17 to 31 inches; brown (7.5YR 4/4) silt loam; weak coarse subangular blocky parting to moderate medium subangular blocky structure; friable; common fine roots; few faint brown (7.5YR 4/3) clay skins on faces of peds; few prominent pockets of pale brown (10YR 6/3) clay depletions on faces of peds; few prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; moderately acid (pH 5.8); gradual smooth boundary.
Bt3—31 to 61 inches; brown (7.5YR 4/4) silt loam; weak coarse subangular blocky parting to moderate medium subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 4/3) clay skins on faces of peds; common prominent pale brown (10YR 6/3) clay depletions on faces of peds; few prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; moderately acid (pH 6.0); gradual smooth boundary.
BC—61 to 80 inches; brown (7.5YR 4/4) silt loam; weak coarse subangular blocky structure; friable; few prominent light yellowish brown (2.5Y 6/3) clay depletions on faces of peds; few prominent black (N 2.5/0) manganese or iron-manganese stains on faces of peds; slightly acid (pH 6.1).

Range in Characteristics

Solum thickness: 60 to 80 inches or more

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—strongly acid or moderately acid, unless limed

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam or silty clay loam
Reaction—very strongly acid to moderately acid

BC horizon (and C horizon where present):
Hue—7.5YR
Value—4 or 5
Chroma—4 to 6
Texture of the fine-earth fraction—silt loam
Reaction—very strongly acid to moderately acid

Mhoon Series

Depth class: Very deep
Drainage class: Poorly drained and very poorly drained
Permeability: Moderate
Landform: Mississippi River flood plain and its tributaries
Position on the landform: Depressional areas
Parent material: Silty alluvium
Slope range: 0 to 2 percent
Associated soils: Adler, Convent, Dekoven, Kurk, and Routon
- Adler soils are moderately well drained
- Convent soils are somewhat poorly drained
- Dekoven soils have a mollic epipedon
- Kurk and Routon soils have an argillic horizon and occur on nearby stream terraces

Taxonomic class: Fine-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Mhoon silt loam, in an area of Convent-Mhoon complex, 0 to 2 percent slopes, frequently flooded, on a nearly level 1 percent slope in a cultivated field; 3.1 miles west of Cayce along Kentucky Highway 94, then 1,300 feet southeast of the junction of Kentucky Highway 94 and Roper School Road; Cayce 7.5 minute USGS quadrangle; east 1,019,200 feet and north 99,800 feet by the Kentucky coordinate grid system.

Ap1—0 to 5 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium granular structure; friable; common fine roots; common medium distinct gray (2.5Y 5/1) and grayish brown (2.5Y 5/2) iron depletions; common fine prominent dark brown (7.5YR 3/3) masses of iron accumulation; slightly acid (pH 6.5); clear smooth boundary.

Ap2—5 to 9 inches; 50 percent grayish brown (2.5Y 5/2) and 50 percent dark grayish brown (2.5Y 4/2) silt loam; weak medium granular structure; firm; common fine roots; many medium faint gray (2.5Y 5/1) iron depletions; many fine prominent dark brown (7.5YR 3/3) masses of iron accumulation; common prominent black (N 2.5/0) iron-manganese oxide stains; neutral (pH 7.0); clear smooth boundary.

Bg1—9 to 22 inches; dark gray (10YR 4/1) silt loam; weak medium subangular blocky structure; firm; few fine roots; many fine and medium prominent dark brown (7.5YR 3/3) masses of iron accumulation; neutral (pH 6.8); clear smooth boundary.

Bg2—22 to 33 inches; dark gray (2.5Y 4/1) silty clay loam; weak medium subangular blocky structure; many medium prominent dark brown (7.5YR 3/3) masses of iron accumulation; few distinct black (N 2.5/0) iron-manganese oxide stains; neutral (pH 6.8); clear smooth boundary.

Cg—33 to 80 inches; gray (2.5Y 5/1) silty clay loam; massive; friable; common fine prominent strong brown (7.5YR 4/6) and common medium prominent dark brown (7.5YR 3/3) masses of iron accumulation; neutral (pH 6.8).

Range in Characteristics

Solum thickness: 20 to 50 inches
Depth to dominant chroma of 2 or less: Directly below the surface layer

Ap or A horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown, red, and gray
Reaction—slightly acid to moderately alkaline

Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown, red, and gray
Reaction—slightly acid to moderately alkaline

Cg horizon (and BCg horizon where present):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2

Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown, red, and gray
Reaction—slightly acid to moderately alkaline

Natchez Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Loess bluff
Position on the landform: Very steep side slopes
Parent material: Thick loess
Slope range: 30 to 50 percent
Associated soils: Memphis
- Memphis soils have an argillic horizon and are fine-silty

Taxonomic class: Coarse-silty, mixed, superactive, thermic Typic Eutrudepts

Typical Pedon

Natchez silt loam, in an area of Memphis-Natchez complex, 30 to 50 percent slopes, gullied, on a wooded, east-facing side slope averaging 50 percent slope and consisting of American beech, white ash, yellow-poplar, and red maple; 1.8 miles southwest of Brownsville along Kentucky Highway 925 in the vicinity of Wilson Hill, 2,000 feet northwest of Beech Grove Church; Hickman 7.5 minute quadrangle; east 973,000 feet and north 87,500 feet by the Kentucky coordinate grid system.

A—0 to 3 inches; dark grayish brown (10YR 4/2) silt loam; weak fine and medium granular structure; very friable; many fine roots; neutral (pH 7.3); clear smooth boundary.
BA—3 to 8 inches; yellowish brown (10YR 5/4) silt loam; weak medium granular structure; very friable; common fine roots; neutral (pH 7.0); clear smooth boundary.
Bw1—8 to 24 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; moderately acid (pH 5.8); clear smooth boundary.
Bw2—24 to 40 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; very few fine roots; few prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; moderately acid (pH 6.0); gradual smooth boundary.
BC—40 to 48 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; few distinct pale brown (10YR 6/3) clay depletions along faces of peds; few prominent black (N 2.5/0) iron-manganese oxide stains on faces of peds; moderately acid (pH 6.0); gradual smooth boundary.
C—48 to 80 inches; yellowish brown (10YR 5/6) silt; massive; friable; few distinct pale brown (10YR 6/3) clay depletions along faces of peds; neutral (pH 6.6).

Range in Characteristics

Solum thickness: 20 to 48 inches

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—silt loam
Reaction—strongly acid to neutral

BA horizon:
Hue—10YR
Value—4 or 5
Chroma—4
Texture of the fine-earth fraction—silt loam
Reaction—strongly acid to neutral

Bw and BC horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam
Reaction—strongly acid to neutral

C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture of the fine-earth fraction—silt or silt loam
Reaction—neutral to moderately alkaline

Openlake Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Very slow
Landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly concave slackwater areas
Parent material: Clayey alluvium
Slope range: 0 to 2 percent
Associated soils: Bondurant, Bowdre, Commerce, Keyespoint, Sharkey, and Tunica
- Bondurant soils have a mollic epipedon
- Bowdre soils have a mollic epipedon and contain a loamy texture within 24 inches

• Commerce soils contain less clay throughout and are fine-silty
• Keyespoint soils have a loamy texture within 40 inches
• Sharkey and Tunica soils are poorly drained

Taxonomic class: Fine, smectitic, nonacid, thermic Vertic Epiaquepts

Typical Pedon

Openlake silty clay loam, 0 to 2 percent slopes, frequently flooded; 4 miles northeast of Hickman in the Upper Bottom along Upper Bottom Road, 3,000 feet west-southwest of the second bridge over Obion Creek among a mix of soybeans and pecan trees; Hickman 7.5 minute quadrangle; east 999,300 feet and north 122,000 feet by the Kentucky coordinate grid system.

Ap1—0 to 3 inches; very dark grayish brown (10YR 3/2) silty clay loam; weak medium granular structure; friable; common fine roots; slightly alkaline (pH 7.5); abrupt smooth boundary.

Ap2—3 to 6 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak medium subangular blocky structure; firm; few fine roots; common fine distinct gray (10YR 5/1) iron depletions; slightly alkaline (pH 7.5); clear smooth boundary.

Bg1—6 to 17 inches; dark grayish brown (2.5Y 4/2) silty clay; weak coarse angular blocky structure parting to moderate medium angular blocky; very firm; few fine roots; many medium prominent gray (10YR 5/1) iron depletions; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) carbonaceous stains throughout from old roots; common krotovinas; common pressure faces; neutral (pH 7.0); gradual smooth boundary.

Bg2—17 to 36 inches; dark grayish brown (2.5Y 4/2) silty clay; weak coarse angular blocky structure parting to moderate medium angular blocky; very firm; very few fine roots; many medium distinct gray (10YR 5/1) iron depletions; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) carbonaceous stains; common krotovinas; common pressure faces; neutral (pH 6.8); gradual smooth boundary.

Bg3—36 to 51 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak coarse subangular blocky structure; firm; common pressure faces; many medium distinct gray (10YR 5/1) iron depletions; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; few krotovinas; slightly acid (pH 6.5); gradual smooth boundary.

BCg—51 to 65 inches; dark grayish brown (2.5Y 4/2) silt loam; weak coarse subangular blocky structure; friable; many medium distinct gray (10YR 5/1) iron depletions; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; few krotovinas; neutral (pH 7.0); gradual smooth boundary

Cg—65 to 80 inches; gray (2.5Y 5/1) and grayish brown (2.5Y 5/2) silt loam; massive; friable; many medium distinct dark grayish brown (2.5Y 4/2) iron depletions; many fine prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/4) masses of iron accumulation; neutral (pH 7.0).

Range in Characteristics

Solum thickness: 37 to 80 inches
Depth to dominant chroma of 2: 10 to 20 inches

Ap horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—2 or 3
Texture of the fine-earth fraction—silty clay loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—strongly acid to moderately alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2
Texture of the fine-earth fraction—silty clay loam, silty clay, or clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—strongly acid to moderately alkaline

BCg and Cg horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam, silty clay loam, or silty clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

Phillippy Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow in the upper clayey layers, moderate in the subsoil, and moderately rapid to rapid in the substratum

Landform: Mississippi River flood plain
Position on the landform: Old natural levees and low ridges
Parent material: Clayey alluvium over loamy alluvium
Slope range: 0 to 3 percent
Associated soils: Bardwell, Bondurant, Bowdre, Commerce, Openlake, and Ware

• Bardwell soils are not clayey in the upper part and are fine-silty
• Bondurant soils are at a lower elevation, are somewhat poorly drained, and are clayey
• Bowdre soils are at a lower elevation and are somewhat poorly drained
• Commerce soils are at a lower elevation, are somewhat poorly drained, and are fine-silty
• Openlake soils are at a lower elevation, are somewhat poorly drained, are clayey, and do not have a mollic epipedon
• Ware soils are in similar positions, but are more sandy throughout and are coarse-loamy

Taxonomic class: Clayey over loamy, smectitic over mixed, superactive, thermic Oxyaquic Hapludolls

Typical Pedon

Phillippy silty clay loam, 0 to 3 percent slopes, protected; 10.8 miles southwest of Hickman along Kentucky Highway 94 in the Lower Bottom near Tyler, 0.85 mile west of the junction of Kentucky Highway 94 and Tyler Road, then 800 feet south of Tyler Road in a cultivated field, 0.5 mile north of the Kentucky-Tennessee state line; Bondurant 7.5 minute USGS quadrangle; east 937,700 feet and north 84,200 feet by the Kentucky coordinate grid system.

Ap1—0 to 3 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak coarse granular and moderate fine subangular blocky structure; friable; many fine roots; neutral (pH 6.9); clear smooth boundary.

Ap2—3 to 10 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky parting to moderate fine subangular blocky structure; firm; common fine roots; moderately acid (pH 6.0); clear smooth boundary.

A—10 to 19 inches; dark brown (10YR 3/3) silty clay, dark grayish brown (10YR 4/3) dry; weak medium subangular blocky parting to moderate fine angular blocky structure; very firm; few fine roots; common faint very dark grayish brown (10YR 3/2) coatings on faces of peds; few pressure faces; moderately acid (pH 6.0); clear smooth boundary.

2Bw1—19 to 24 inches; brown (10YR 4/3) loam; moderate medium subangular blocky structure; firm; very few fine roots; few medium distinct grayish brown (2.5Y 5/2) iron depletions on surfaces along pores; few fine faint brown (7.5YR 4/3) masses of iron accumulation around depletions; common faint very dark grayish brown (10YR 3/2) coatings on faces of peds; moderately acid (pH 5.9); clear smooth boundary.

2Bw2—24 to 29 inches; brown (10YR 4/3) very fine sandy loam; moderate fine subangular blocky structure; very friable; common medium prominent gray (2.5Y 5/1) iron depletions on surfaces along pores; few fine faint brown (7.5YR 4/3) masses of iron accumulation around depletions; moderately acid (pH 5.7); clear smooth boundary.

2BC—29 to 42 inches; brown (10YR 4/3) fine sand; weak medium granular structure; very friable; moderately acid (pH 5.9); gradual smooth boundary.

2C1—42 to 65 inches; brown (10YR 4/3) fine sand; single grain; loose; moderately acid (pH 5.9); gradual smooth boundary

2C2—65 to 80 inches; brown (10YR 4/3) very fine sandy loam; massive; very friable; common medium prominent gray (2.5Y 5/1) iron depletions; common medium distinct dark brown (7.5YR 3/3) and common medium prominent strong brown (7.5YR 4/6) masses of iron accumulation in matrix around depletions; moderately acid (pH 5.9).

Range in Characteristics

Solum thickness: 24 to 48 inches
Depth to layers of contrasting texture: 18 to 36 inches
Thickness of mollic epipedon: 10 to 23 inches

Ap horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silty clay loam
Reaction—moderately acid to slightly alkaline

A horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—silty clay, clay, or silty clay loam
Reaction—strongly acid to slightly alkaline

2Bw horizon:
Hue—10YR or 2.5Y

Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—clay loam, loam, or very fine sandy loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—strongly acid to slightly alkaline

2BC horizon
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—loam, fine sandy loam, very fine sandy loam, loamy fine sand, or fine sand
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

2C horizon
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—fine sandy loam, very fine sandy loam, sandy loam, loamy fine sand, fine sand, or sand
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

Robinsonville Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Mississippi River flood plain
Position on the landform: Low ridges, old natural levees, and higher areas on the flood plain
Parent material: Loamy alluvium
Slope range: 0 to 3 percent
Associated soils: Bardwell, Bondurant, Bowdre, Commerce, Crevasse, and Ware
• Bardwell soils contain more clay and less sand throughout and are fine-silty
• Bondurant soils are at a lower elevation and are clayey throughout
• Bowdre soils occupy a lower elevation, are clayey in the upper part, and are somewhat poorly drained
• Commerce soils are somewhat poorly drained and are fine-silty
• Crevasse soils are more sandy throughout and are excessively drained
• Ware soils have a mollic epipedon

Taxonomic class: Coarse-loamy, mixed, superactive, nonacid, thermic Typic Udifluvents

Typical Pedon

Robinsonville fine sandy loam, 0 to 3 percent slopes, occasionally flooded, in a nearly level cultivated field; in Madrid Bend, 3,000 feet west-northwest of Washpan Lake; New Madrid 7.5 minute USGS quadrangle; east 896,200 feet and north 93,200 feet by the Kentucky coordinate grid system.

Ap—0 to 5 inches; dark brown (10YR 3/3) fine sandy loam; weak medium granular structure; very friable; common fine roots; neutral (pH 7.0); abrupt smooth boundary.
AC—5 to 14 inches; brown (10YR 4/3) fine sandy loam; weak medium granular structure; very friable; few fine roots; neutral (pH 6.8); clear smooth boundary.
C1—14 to 30 inches; brown (10YR 4/3) fine sandy loam; massive; very friable; very few fine roots; neutral (pH 7.0); clear smooth boundary.
C2—30 to 60 inches; brown (10YR 5/3) fine sandy loam; massive; moderately alkaline (pH 8.0); gradual smooth boundary.
C3—60 to 80 inches; brown (10YR 4/3) very fine sandy loam; massive; moderately alkaline (pH 8.0).

Range in Characteristics

Ap horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of the fine-earth fraction—fine sandy loam
Reaction—slightly acid to moderately alkaline

AC horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—loam, very fine sandy loam, fine sandy loam
Reaction—slightly acid to moderately alkaline

C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—very fine sandy loam, fine sandy loam, sandy loam, or loamy fine sand
Reaction—slightly acid to moderately alkaline

Roellen Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Very slow
Landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly concave slackwater areas
Parent material: Clayey alluvium
Slope range: 0 to 2 percent
Associated soils: Bondurant, Bowdre, Commerce, Keyespoint, Openlake, Sharkey, and Tunica

- Bondurant soils are somewhat poorly drained and occur at a slightly higher elevation
- Bowdre soils are somewhat poorly drained and contain a loamy texture within 2 feet
- Commerce soils contain less clay throughout and are somewhat poorly drained
- Keyespoint soils are somewhat poorly drained and have a loamy texture within 40 inches
- Openlake soils are somewhat poorly drained, do not have a mollic epipedon, and occur at a slightly higher elevation
- Sharkey and Tunica soils do not have a mollic epipedon and occur in adjacent swales and backswamps

Taxonomic class: Fine, smectitic, thermic Fluvaquentic Vertic Epiaquolls

Typical Pedon

Roellen silty clay, 0 to 2 percent slopes, occasionally flooded; in the Lower Bottom, 1,100 feet northwest of Midway Church in a cultivated field; Bondurant 7.5 minute USGS quadrangle; east 939,600 feet and north 93,500 feet by the Kentucky coordinate grid system.

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) silty clay, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; firm; common fine roots; common medium distinct gray (10YR 5/1) iron depletions; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; neutral (pH 6.8); clear smooth boundary.

A—5 to 13 inches; very dark grayish brown (2.5Y 3/2) silty clay, dark grayish brown (2.5Y 4/2) dry; moderate medium and coarse angular blocky structure; very firm; common fine roots; common medium distinct gray (10YR 5/1) iron depletions; common fine distinct dark brown (7.5YR 3/3) masses of iron accumulation; neutral (pH 6.8); clear smooth boundary.

Bg1—13 to 19 inches; gray (10YR 5/1) silty clay; moderate medium and coarse angular blocky structure; very firm; few fine roots; many medium prominent dark brown (7.5YR 3/3) and strong brown (7.5YR 4/6) masses of iron accumulation; common pressure faces; neutral (pH 6.8); gradual smooth boundary.

Bg2—19 to 42 inches; gray (2.5Y 5/1) clay; weak coarse subangular blocky structure; very firm; very few fine roots; common pressure faces; many medium prominent yellowish red (5YR 4/6) and dark reddish brown (5YR 3/3) masses of iron accumulation; common pressure faces; slightly alkaline (pH 7.5); gradual smooth boundary.

Cg—42 to 80 inches; gray (N 5/0) silty clay; massive; very firm; many medium prominent dark reddish brown (5YR 3/3) masses of iron accumulation; slightly alkaline (pH 7.5).

Range in Characteristics

Solum thickness: 40 to 60 inches
Depth to dominant chroma of 2: Directly below the surface layer

Ap and A horizons:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—neutral to moderately alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1; 2 if value is 5 or 6
Texture of the fine-earth fraction—silty clay or clay
Redoximorphic concentrations and depletions—shades of red, brown, and gray
Reaction—slightly acid to moderately alkaline

Cg horizon
Hue—10YR, 2.5Y, or neutral
Value—4 to 6
Chroma—0 to 2
Texture of the fine-earth fraction—silty clay loam, silty clay, or clay
Redoximorphic concentrations and depletions—shades of red, brown, and gray
Reaction—neutral to moderately alkaline

Routon Series

Depth class: Very deep
Drainage class: Poorly drained

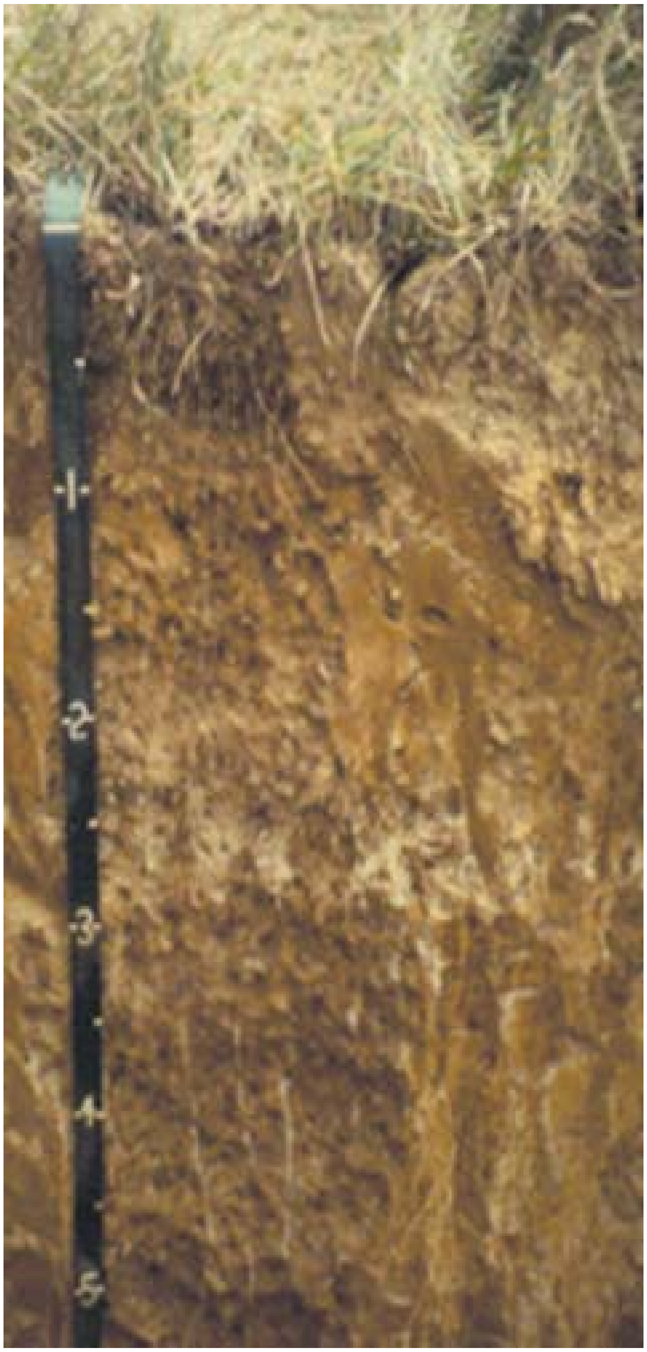

Figure 23.—Profile of Loring silt loam. Loring soils have a slowly permeable fragipan in the lower part of the profile. Depth is marked in feet.

Figure 24.—Profile of Routon silt loam. Routon soils have a depleted gray matrix within 10 inches of the surface due to a seasonally high water table and are considered hydric soils. Notice the prominent reddish brown iron oxide concentrations at about 4 inches. Depth is marked in inches.

Permeability: Slow
Landform: Stream terrace and upland
Position on the landform: Nearly level to slightly concave, depressional areas
Parent material: Silty alluvium and loess
Slope range: 0 to 2 percent
Associated soils: Calloway, Center, and Kurk—on similar landforms; Convent, Dekoven, and Mhoon—on adjacent flood plains
• Calloway soils are somewhat poorly drained and have a fragipan
• Center soils are moderately well drained
• Convent and Mhoon soils do not have an argillic horizon
• Dekoven soils have a mollic epipedon and do not have an argillic horizon
• Kurk soils are somewhat poorly drained

Taxonomic class: Fine-silty, mixed, active, thermic Typic Epiaqualfs

Typical Pedon

Routon silt loam, 0 to 2 percent slopes (fig. 24), in a nearly level forest of shagbark hickory; 1.5 miles west of Fulton along Kentucky Highway 166 (middle road), then 0.5 mile south along Mount Carmel Road, then 1,400 feet east along a property line of scattered trees; Crutchfield 7.5 minute quadrangle; east 1,068,100 feet and north 79,900 feet by the Kentucky coordinate grid system.

A1—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; very friable; many fine and few medium roots; common medium prominent brown (7.5YR 4/4) masses of iron accumulation; common medium distinct gray (10YR 5/1) and grayish brown (10YR 5/2) iron depletions; very strongly acid (pH 5.0); clear smooth boundary.

A2—4 to 8 inches; grayish brown (10YR 5/2) silt loam; moderate medium and coarse granular structure; very friable; many fine and few medium roots; many medium prominent brown (7.5YR 4/4) and reddish brown (5YR 4/4) masses of iron accumulation; many medium and coarse faint light brownish gray (10YR 6/2) iron depletions; very strongly acid (pH 5.0); abrupt smooth boundary.

Eg—8 to 15 inches; gray (10YR 6/1) silt loam; moderate fine and medium subangular blocky structure; very friable; many fine and few medium roots; common medium prominent brown (7.5YR 4/4) masses of iron accumulation; many medium faint light brownish gray (10YR 6/2) iron depletions; few prominent dark brown (7.5YR 3/2) manganese stains and nodules; very strongly acid (pH 4.9); abrupt smooth boundary.

Btg1—15 to 27 inches; light brownish gray (10YR 6/2) silt loam; moderate medium subangular blocky structure; friable; common fine and few medium roots; common medium prominent brown (7.5YR 4/4) masses of iron accumulation; common distinct grayish brown (10YR 5/2) clay skins on ped faces; common faint gray (10YR 6/1) clay depletions, light gray (N 7/0 dry); few prominent dark brown (7.5YR 3/2) manganese stains and nodules; very strongly acid (pH 5.0); gradual smooth boundary.

Btg2—27 to 48 inches; light brownish gray (10YR 6/2) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common fine prominent strong brown (7.5YR 4/6) and few coarse prominent yellowish red (5YR 4/6) masses of iron accumulation; common distinct gray (7.5YR 5/1) clay skins on ped faces; few prominent dark brown (7.5YR 3/2) manganese stains and nodules; very strongly acid (pH 4.8); clear smooth boundary.

BCg—48 to 60 inches; light brownish gray (10YR 6/2) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; very few fine roots; common medium prominent strong brown (7.5YR 4/6) and many coarse prominent yellowish brown (10YR 5/6) and yellowish red (5YR 4/6) masses of iron accumulation; common prominent black (N 2.5/0) manganese stains; strongly acid (pH 5.1); clear smooth boundary.

C—60 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; firm; common medium distinct light brownish gray (10YR 6/2) iron depletions; few fine distinct (7.5YR 5/6) masses of iron accumulation; common prominent black (N 2.5/0) manganese stains; strongly acid (pH 5.5).

Range in Characteristics

Solum thickness: 40 to 65 inches
Depth to dominant chroma of 2 or less: 0 to 10 inches

A or Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—very strongly acid to moderately acid, unless limed

Eg horizon:
Hue—10YR or 2.5Y
Value—6 or 7
Chroma—1 or 2
Texture of the fine-earth fraction—silt or silt loam
Redoximorphic concentrations and depletions—shades of brown
Reaction—very strongly acid to moderately acid, unless limed

Btg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silty clay loam
Redoximorphic concentrations and depletions—shades of brown and red
Reaction—very strongly acid to moderately acid

BCg horizon:
Hue—10YR
Value—5 or 6
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown, red, and gray
Reaction—strongly acid or moderately acid

C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—strongly acid or moderately acid

Sharkey Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Very slow
Landform: Mississippi River flood plain
Position on the landform: Concave swales and backswamps
Parent material: Clayey alluvium
Slope range: 0 to 2 percent
Associated soils: Bondurant, Bowdre, Commerce, Keyespoint, Openlake, Roellen, and Tunica

- Bondurant soils occur at a higher elevation on the flood plain, have a mollic epipedon, and are somewhat poorly drained
- Bowdre soils occur at a higher elevation on the flood plain, contain a loamy texture within 2 feet, have a mollic epipedon, and are somewhat poorly drained
- Commerce soils occur at a higher elevation on the flood plain, contain less clay throughout, and are somewhat poorly drained
- Keyespoint soils occur at a higher elevation on the flood plain, have a loamy texture within 40 inches, and are somewhat poorly drained
- Openlake soils occur at a higher elevation on the flood plain and are somewhat poorly drained
- Roellen soils occur at a higher elevation on the flood plain and have a mollic epipedon
- Tunica soils have a loamy texture within 3 feet

Taxonomic class: Very-fine, smectitic, thermic Chromic Epiaquerts

Typical Pedon

Sharkey silty clay, 0 to 2 percent slopes, frequently flooded; in the Upper Bottom 2 miles northeast of Hickman in the Obion Creek Wildlife Management Area, 1 mile east of the junction of Upper Bottom Road and Salmon Lane, then 700 feet north of Salmon Lane; Hickman 7.5 minute quadrangle; east 1,003,300 feet and north 114,500 feet by the Kentucky coordinate grid system.

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) silty clay; weak medium subangular blocky structure; firm; common fine roots; common medium distinct gray (10YR 5/1) iron depletions; common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; neutral (pH 6.8); clear smooth boundary.

Bg1—5 to 17 inches; gray (2.5Y 5/1) silty clay; moderate coarse subangular blocky structure; very firm; few fine roots; common pressure faces; many medium prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 4/6) masses of iron accumulation; neutral (pH 6.8); gradual smooth boundary.

Bg2—17 to 36 inches; gray (N 5/0) silty clay; weak coarse subangular blocky structure; very firm; very few fine roots; common pressure faces; many medium prominent yellowish red (5YR 4/6) and (5YR 5/8) masses of iron accumulation; slightly alkaline (pH 7.5); gradual smooth boundary.

Cg—36 to 80 inches; gray (N 5/0) silty clay; massive; very firm; common pressure faces; many medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation; slightly alkaline (pH 7.5).

Range in Characteristics

Solum thickness: 36 to 70 inches
Depth to dominant chroma of 2: Directly below the surface layer

A or Ap horizon:
Hue—10YR or 2.5Y
Value—2 to 4
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

Bg horizon:
Hue—10YR, 2.5Y, or neutral
Value—4 to 6
Chroma—1; 2 if value is greater than 4
Texture of the fine-earth fraction—silty clay or clay
Redoximorphic concentrations and depletions—shades of red, brown, and gray
Reaction—moderately acid to moderately alkaline

Cg horizon
Hue—10YR, 2.5Y, or neutral
Value—4 to 6
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay or clay
Redoximorphic concentrations and depletions—shades of red, brown, and gray
Reaction—neutral to moderately alkaline

The Sharkey soils in Fulton County are taxadjuncts to the Sharkey series because they have less than 60 percent clay content (weighted average) in the particle-size control section. This difference, however, does not affect the use and management of the soils. In this survey area, the Sharkey soils classify as fine, smectitic, nonacid, thermic Vertic Epiaquepts.

Tunica Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Very slow in the upper clayey layers and moderate in the lower loamy layers
Landform: Mississippi River flood plain
Position on the landform: Nearly level to slightly concave slackwater areas
Parent material: Clayey alluvium over loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Bondurant, Bowdre, Commerce, Keyespoint, Openlake, and Sharkey

- Bondurant soils have a mollic epipedon, are somewhat poorly drained, and are clayey throughout the particle-size control section
- Bowdre soils have a mollic epipedon and are somewhat poorly drained
- Commerce soils contain less clay throughout and are fine-silty
- Keyespoint soils are somewhat poorly drained
- Openlake soils are somewhat poorly drained and clayey throughout the particle-size control section
- Sharkey soils are clayey throughout the particle-size control section

Taxonomic class: Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Vertic Epiaquepts

Typical Pedon

Tunica silty clay, 0 to 2 percent slopes, frequently flooded; in the Upper Bottom 2 miles north of Hickman along Upper Bottom Road, then 2.3 miles east along Salmon Lane in a Sycamore plantation within the Obion Creek Wildlife Management Area; Hickman 7.5 minute quadrangle; east 1,008,300 feet and north 116,100 feet by the Kentucky coordinate grid system.

A—0 to 8 inches; dark grayish brown (10YR 4/2) silty clay; weak medium subangular blocky structure; firm; common fine roots; common medium distinct gray (10YR 5/1) iron depletions; common fine distinct (7.5YR 3/2) masses of iron accumulation; slightly acid (pH 6.5); clear smooth boundary.
Bg1—8 to 22 inches; gray (2.5Y 5/1) silty clay; weak coarse subangular blocky structure; very firm; common fine roots; common pressure faces; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; few prominent black (N 2.5/0) manganese or iron-manganese stains and concretions throughout; slightly acid (pH 6.5); gradual smooth boundary.
Bg2—22 to 33 inches; gray (2.5Y 5/1) silty clay loam; weak coarse subangular blocky structure parting to moderate medium angular blocky; firm; few fine roots; many medium prominent dark grayish brown (10YR 4/2) masses of iron accumulation; few prominent black (N 2.5/0) manganese or iron-manganese stains and concretions throughout; slightly acid (pH 6.5); gradual smooth boundary.
2Bg3—33 to 40 inches; 60 percent gray (10YR 5/1) and 40 percent dark grayish brown (10YR 4/2) silt loam; weak coarse subangular blocky structure; firm; very few fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; few prominent black (N 2.5/0) manganese or iron-manganese stains and

concretions throughout; slightly acid (pH 6.5); clear smooth boundary.

2BCg—40 to 48 inches; gray (2.5Y 6/1) loam; weak coarse subangular blocky structure; friable; very few fine roots; common medium prominent brown (7.5YR 4/4) masses of iron accumulation; few prominent black (N 2.5/0) manganese or iron-manganese stains and concretions throughout; slightly acid (pH 6.5); clear smooth boundary.

2C—48 to 80 inches; brown (10YR 5/3) sandy loam; massive; very friable; slightly acid (pH 6.5).

Range in Characteristics

Solum thickness: 24 to 38 inches
Depth to layers of contrasting texture: 20 to 36 inches
Depth to dominant chroma of 2: Directly below the surface layer

A or Ap horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2
Texture of the fine-earth fraction—silty clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

Bg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture of the fine-earth fraction—silty clay loam, silty clay, or clay
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

2Bg and 2BCg horizons:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture of the fine-earth fraction—clay loam, silt loam, loam, fine sandy loam, or sandy loam
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to slightly alkaline

2C horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture of the fine-earth fraction—loam, fine sandy loam, sandy loam, or loamy fine sand
Redoximorphic concentrations and depletions—shades of brown and gray
Reaction—moderately acid to moderately alkaline

Udorthents

See map unit description

Ware Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Mississippi River flood plain
Position on the landform: Low ridges, old natural levees, and higher areas on the flood plain
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Bardwell, Bondurant, Bowdre, Commerce, Crevasse, Phillippy, and Robinsonville

- Bardwell soils contain more clay and less sand throughout and are fine-silty
- Bondurant soils are at a lower elevation and formed in clayey alluvium in the upper 4 feet
- Bowdre soils occupy a lower elevation, are clayey in the upper part, and are somewhat poorly drained
- Commerce soils are somewhat poorly drained and do not have a mollic epipedon
- Crevasse soils do not have a mollic epipedon, are more sandy throughout, and are excessively drained
- Phillippy soils occupy similar positions but are clayey in the upper part
- Robinsonville soils do not have a mollic epipedon

Taxonomic class: Coarse-loamy, mixed, active, thermic Fluventic Hapludolls

Typical Pedon

Ware loam, 0 to 2 percent slopes, protected, in a nearly level cultivated field; 7.6 miles west of Hickman along Kentucky Highway 94 in the Lower Bottom, 0.7 mile along Kentucky Highway 971 west of the junction of Kentucky Highway 94 and Kentucky Highway 971 at Sassafras Ridge, then about 750 feet south into a cultivated field; Bondurant 7.5 minute USGS quadrangle; east 945,600 feet and north 99,400 feet by the Kentucky coordinate grid system.

Ap1—0 to 6 inches; very dark grayish brown (10YR 3/2) loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; very friable; many fine roots; neutral (pH 7.0); clear smooth boundary.

Ap2—6 to 15 inches; very dark gray (10YR 3/1) loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; very friable; common fine roots; neutral (pH 7.0); clear smooth boundary.

Bw1—15 to 26 inches; brown (10YR 4/3) fine sandy loam; weak fine and medium subangular blocky structure; very friable; few fine roots; neutral (pH 7.0); clear smooth boundary.
Bw2—26 to 30 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; weak fine and medium subangular blocky structure; very friable; very few fine roots; neutral (pH 7.0); clear smooth boundary.
C1—30 to 54 inches; brown (10YR 5/3) fine sandy loam with stratified lenses of brown (10YR 4/3) very fine sandy loam; massive; very friable; neutral (pH 7.0); gradual smooth boundary.
C2—54 to 80 inches; brown (10YR 4/3) and (10YR 5/3) fine sandy loam; massive; very friable; neutral (pH 7.0).

Range in Characteristics

Solum thickness: 15 to 30 inches
Thickness of mollic epipedon: 10 to 22 inches

Ap horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture of the fine-earth fraction—loam, silt loam, or silty clay loam
Reaction—moderately acid to moderately alkaline

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of the fine-earth fraction—loam, very fine sandy loam, fine sandy loam
Reaction—moderately acid to moderately alkaline

C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture of the fine-earth fraction—very fine sandy loam, fine sandy loam, sandy loam, loamy fine sand, or sand
Reaction—moderately acid to moderately alkaline

Waverly Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Landform: Flood plain (in the easternmost part of the county)
Position on the landform: Nearly level to slightly concave depressions
Parent material: Silty alluvium
Slope range: 0 to 2 percent
Associated soils: Collins and Falaya
- Collins soils are moderately well drained
- Falaya soils are somewhat poorly drained

Taxonomic class: Coarse-silty, mixed, active, acid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Waverly silt loam, in an area of Falaya-Waverly complex, 0 to 2 percent slopes, occasionally flooded, on a nearly level 1 percent slope in a cultivated field; 2,700 feet northeast of the intersection of the Purchase Parkway and Kentucky Highway 307, on the east side of Harris Fork Creek; Water Valley 7.5 minute quadrangle; east 1,085,200 feet and north 84,200 feet by the Kentucky coordinate grid system.

Ap1—0 to 5 inches; brown (10YR 5/3) silt loam; weak medium granular structure; very friable; common fine roots; many coarse distinct gray (10YR 5/1) iron depletions; common fine prominent yellowish red (5YR 4/6) masses of iron accumulation; common prominent black (N 2.5/0) manganese stains; neutral; clear smooth boundary.
Ap2—5 to 10 inches; grayish brown (10YR 5/2) silt loam; weak medium granular structure; very friable; few fine roots; common medium distinct gray (10YR 6/1) iron depletions; many fine prominent red (2.5YR 4/6) masses of iron accumulation; many prominent black (N 2.5/0) manganese stains; slightly acid; clear smooth boundary.
Bg—10 to 27 inches; light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; friable; many medium distinct dark yellowish brown (10YR 4/4) and many fine prominent red (2.5YR 4/6) masses of iron accumulation; many prominent black (N 2.5/0) manganese stains; strongly acid; gradual smooth boundary.
BCg—27 to 54 inches; gray (10YR 6/1) silt loam; massive parting to weak coarse subangular blocky structure; friable; many medium prominent yellowish red (5YR 4/6) and red (2.5YR 4/6) masses of iron accumulation; many prominent black (N 2.5/0) manganese stains; strongly acid; gradual smooth boundary.
Cg—54 to 80 inches; gray (2.5Y 5/1) silt loam; massive; friable; many medium prominent yellowish red (5YR 4/6) masses of iron accumulation; many prominent black (N 2.5/0) and dark brown (7.5YR 3/3) weakly cemented iron-manganese concretions; strongly acid.

Range in Characteristics

Depth to dominant chroma of 2 or less: Directly below the surface layer

A or Ap horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture of the fine-earth fraction—silt loam
Redoximorphic concentrations and depletions—shades of brown, red, and gray
Reaction—very strongly acid or strongly acid, unless limed

Bg horizon:
Hue—10YR or 2.5Y
Value—6 or 7
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silt
Redoximorphic concentrations and depletions—shades of brown, red, yellow, and black
Reaction—very strongly acid or strongly acid

BCg and Cg horizons:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture of the fine-earth fraction—silt loam or silt
Redoximorphic concentrations and depletions—shades of brown, red, yellow, and black
Reaction—very strongly acid or strongly acid

Formation of the Soils

Soils are natural bodies on the earth’s surface that exhibit unique features and properties. Many soil properties can be measured in laboratories. Other properties, such as depth to a seasonal water table, can only be measured or observed in the field. Soils form as certain horizons, or layers, and develop in weathered parent material. Soil formation is determined by the interaction of topography, climate, and living organisms over a period of time.

This section relates the soils in Fulton County to the major factors of soil formation, explains the processes of horizon differentiation, and describes the geology, geomorphic, and soil relationships.

Factors of Soil Formation

The characteristics of a soil depend on the physical and chemical composition of the parent material as influenced by climate, topography, living organisms, and time. All five factors are active in the formation of every soil, but the relative importance of each factor can differ from one soil to another (Yaalon, 1983). In some areas, one factor may have a greater influence on the development of certain soil characteristics, and in other areas, another factor may dominate. The five factors and how they interact to produce the soils in Fulton County are described in the following paragraphs.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. It is a product of the weathering or decomposition of underlying bedrock or transported materials. Parent material influences the chemical, mineral, and textural composition of the soil. In the early stages of soil formation, a soil has properties similar to that of the parent material. As weathering takes place, these properties are modified and each soil develops its own characteristics. Grenada and Openlake soils illustrate how the mineral and textural composition is determined by the parent material. Grenada soils formed in thick, silty loess containing appreciable amounts of mixed, micaceous minerals (Bailey, Blevins, and Barnhisel, 1972). Openlake soils formed in clayey, slackwater alluvial sediments deposited by the Mississippi River and are dominated by 2:1 expanding clay minerals. These soils form wide cracks in the upper part upon drying out in late summer and early fall months. Grenada soils have mixed mineralogy and are fine-silty. Openlake soils have smectitic mineralogy and are in a fine textural family.

Parent material can be weathered in place, or it can be transported and deposited by water, wind, gravity, or ice. Nearly all the soils in the survey area weathered from parent materials deposited by wind and/or water.

Wind-transported material, or loess, is dominant on the uplands. Soils forming in loess parent material are high in silt and very low in sand-size particles. Examples are the Calloway, Feliciana, Grenada, Loring, and Memphis soils. These soils generally contain more than 65 percent silt and less than 10 percent sand to a depth of 4 feet or more (fig. 25).

Two sources of water-deposited parent material, or alluvium, occur on the flood plains. Soils in the Upper Bottom, Lower Bottom, Island Number 8, and Madrid Bend formed from alluvium deposited by the Mississippi River. Soils in the Mississippi River flood plain span the range of soil textures (sandy to clayey) and internal drainage (excessively drained to poorly drained) depending on their geomorphic landscape position. The highest areas on the flood plain are natural levees consisting of sandy or coarse-loamy, excessively drained and well drained soils. The lowest areas on the flood plain are swales and backswamps dominated by poorly drained or somewhat poorly drained soils having formed in clayey, slackwater alluvium. Over time, as the river changed course and migrated, clayey sediments have been deposited over the older natural levees producing soils such as Bowdre, Keyespoint, Phillippy, and Tunica, which are clayey in the upper 1.5 to 3 feet with loamy layers underneath.

Alluvium in the valleys draining the loess uplands contain soils having certain physical characteristics indicative of the source of the alluvium. Soils along the creeks and streams from Hickman to Fulton have high silt content and contain mixed mineralogy similar to

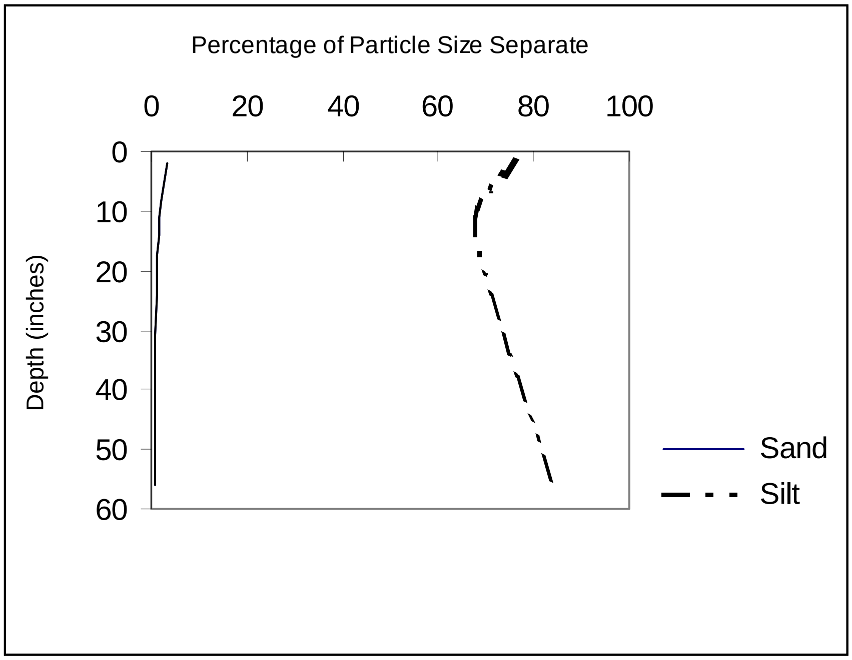

Figure 25.—Comparison of sand and silt content in deep loess upland soils. This data is from the Feliciana soil series.

the soils on the loess uplands. Soils such as Collins, Falaya, and Waverly are examples of soils formed in recent stream alluvium.

Older alluvial deposits in the loess valleys occur at elevations slightly higher than the present-day flood plain. Soils occurring on these higher positions, or stream terraces, contain more clay in the subsoil and exhibit greater morphological development than those formed in more recent alluvium. Center, Kurk, and Routon soils are on stream terraces and formed in older alluvial sediments.

Topography

Topography relates to the variations of the land surface, or topography is better understood as “the lay of the land.” Topographic components, such as relief, slope, landform, and aspect, influence or modify the effects of the other soil-forming factors. The gradient, shape, and length of slope directly influence the rate of water infiltration and runoff.

The topography of Fulton County is highly variable. Most of the loess uplands are characterized as having gently sloping to sloping topography. With adequate surface cover, water infiltrates the soil surface and moves downward through the soil to cause leaching of soluble minerals and the translocation of clay throughout the subsoil. In many areas of the county, free water moving downward through the soil is restricted at depths ranging from about 2 to 3 feet. This water often becomes perched for days or weeks above a relatively impermeable fragipan. An example is the Calloway soils, which are considered somewhat poorly drained.

On steeper areas, such as occurs around the Brownsville area, water tends to move more laterally than vertically through the soil. This lateral movement is facilitated by increases in bulk density within the soil, thus retarding downward movement of water by gravity. Soils occurring on steeper areas, such as Memphis and Natchez soils, generally have a brown subsoil that contain little, if any, gray color and are considered to be naturally well drained.

Nearly level, slightly concave areas receive water from higher, surrounding landscapes with the water moving vertically and, in most cases, slowly through the soil. These soils are saturated during much of the year when plants are dormant. The excessive wetness inhibits oxidation processes within the soil and produces a gray, mottled subsoil due to the reduction and transfer of iron. The Falaya, Routon, and Waverly soils are examples.

The topography of the Mississippi River flood plain is primarily characterized as a series of alternating low ridges and swales with broad, nearly level plains in between. This pattern is a result of floodwaters scouring and removing materials within small areas and depositing them in adjacent areas. Local differences in topographic elevation are slight, generally less than 10 feet.

The influence of topography on soil genesis has been largely that of soil drainage and water table depth and duration. Higher elevations, such as natural levees, generally remain above the static ground-water table, therefore maintaining an aerobic environment throughout most of the year. As a result, the soils have high chroma colors in the upper 4 feet of the soil profile, indicative of well oxidized conditions. Soils such as Crevasse, Robinsonville, and Ware are commonly found on such landscape positions.

Depressional areas of lower elevation receive runoff water from adjacent natural levees. In addition, in winter and early spring during periods of high antecedent moisture conditions, the ground-water table rises close to the surface, oftentimes maintaining a shallow depth for an extended period of time. Soluble products of plant decomposition in the presence of free water cause reduction and solution of iron oxides in the soil. During the summer and fall months, the water table recedes below the solum. These alternating drying and wetting cycles produce soils with a virtually iron-free gray color below the surface layer along with scattered bright colors of reoxidized iron. Soils such as Sharkey and Tunica are commonly found in such areas.

Climate

Climatic factors, namely temperature and precipitation, affect the physical, chemical, and biological properties of soils. Climate affects the kind and number of plants and animals on and in the soil, the weathering of rocks and minerals, the susceptibility of the soils to erosion, and the rate of soil formation. Its effect on such factors as erosion and deposition has an influence upon the relief of an area and the degree of profile development within the soil.

The climate in Fulton County is temperate and humid. Table 1 gives data on temperature and precipitation in Fulton County. During winter, the average temperature is about 37 degrees F, with an average daily minimum temperature of 27.5 degrees F. In summer, the average temperature is about 77 degrees F, and the average daily maximum temperature is about 88 degrees F. Periods of extremely low or high temperature are short. Because the climate is relatively uniform throughout the county, the differences among the soils within the survey area are the result of other factors. The average annual precipitation is nearly 52 inches. The precipitation is fairly well distributed throughout the year.

The area's humid, temperate climate fosters geologic weathering and subsequent soil development. On the loess uplands, the abundant moisture leaches soluble bases such as calcium and magnesium from the soil, resulting in a typically acid subsoil. Water also carries clay minerals from the surface layer into the subsoil; therefore, most soils have a higher content of clay in the subsoil than in the surface layer. Upland soils such as Calloway, Feliciana, Grenada, Loring, and Memphis all exhibit such characteristics within their respective soil profile.

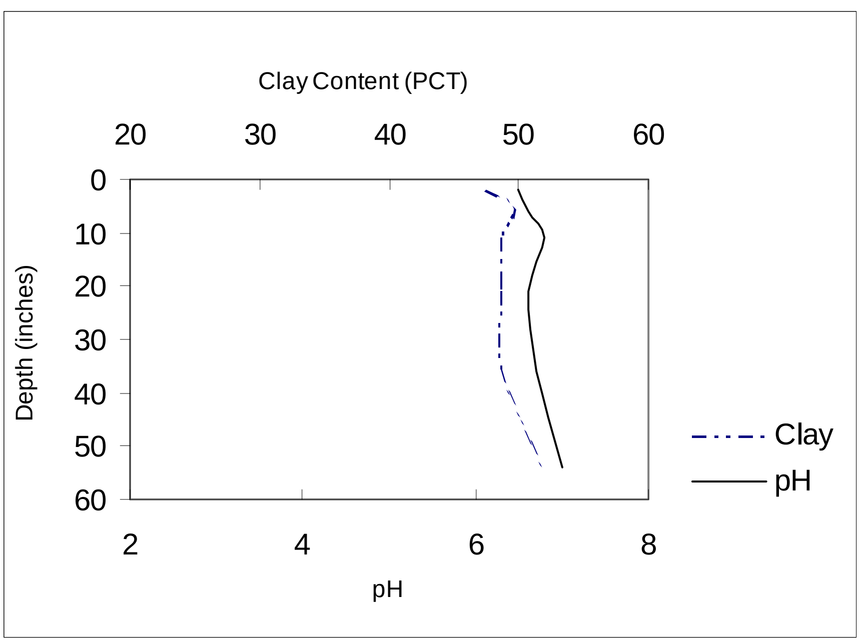

Figure 26.—Uniformity of clay content and pH with depth in Sharkey soils.

On the Mississippi River flood plain, annual floodwaters and/or a high ground-water table during parts of the year enrich the soil profile with soluble bases such as calcium and magnesium. On areas not protected by levees, annual flooding continues to deposit finer sediments in depressional areas that are distant from the river channel. Conversely, coarse-textured sediments are deposited on natural levees and onto the flood plain during turbulent, high velocity flood events. This periodic renewal with fresh sediments prevents the soils on most of the Mississippi River flood plain from ever reaching steady-state conditions, thereby limiting the amount of weathering and subsequent profile development. In fact, the clay content within soils such as Crevasse, Openlake, Robinsonville, Roellen, and Sharkey varies only marginally between about 1 foot and a depth of 4 feet (fig. 26).

Living Organisms

Plants affect soil formation primarily by adding organic matter and acting as a major link in nutrient cycling. Animals, bacteria, and fungi contribute to soil formation by converting the remains of plants to organic matter and plant nutrients. Small animals, such as earthworms, grubs, and insects, live in or on the soil and play a significant role in altering soil structure. Larger animals, such as moles, mice, groundhogs, and crawfish, burrow through and mix the soil. Crawfish tunnels are very common on Routon and Waverly soils.

Trees and other plants transport plant nutrients from the lower part of the soil to the upper part. They also add organic matter via decomposition of plant residue, provide a protective cover that reduces erosion, and influence soil temperature and moisture conditions. The organic matter added by both plants and animals alters the chemical processes in the soil and forms humus. The decay of this matter releases acids that accelerate weathering processes within the soil.

Human activity has affected soil formation by clearing woodland, draining wet areas, plowing, and creating levees to prevent flooding. Traditional agricultural cultivation practices of previous decades resulted in accelerated erosion on many sloping and moderately steep upland areas. On many of these areas, the original surface layer has been eroded and deposited on flood plains or carried into streams causing increased siltation. Accelerated erosion of loess uplands has been the dominant factor behind the development of severely eroded phases of such soils as Grenada, Loring, and Memphis.

On many bottomland areas, man has leveled and graded the soil and cut ditches to improve drainage and agricultural production. Other areas within the county have been excavated and filled for road construction and urban/industrial development. Udorthents formed in urban areas where the natural soil has been disturbed.

Time

Time is needed for climate, living organisms, and topography to act upon the parent material and form a soil. In terms of soil formation, time is considered a relative rather than absolute variable. The age of a soil is determined by the relative degree of profile development rather than the number of years the soil has been subject to the soil-forming processes. A soil is considered to be old or “mature” if it has distinct, well expressed horizons. Conversely, a soil is considered young if individual soil horizons are indistinguishable or weakly expressed.

Geologically, soils on the Mississippi River flood plain are young. In addition, areas of the flood plain not protected by levees continue to receive fresh sediments nearly annually due to flood events.

Soils such as Crevasse and Robinsonville maintain characteristics quite similar to the parent material in which they formed and have not yet developed diagnostic subsurface horizons. These soils occur in areas where floodwaters first leave the channel, thus developing in coarse-textured alluvium recently deposited by the river. Because these soils periodically receive new depositional material, they have not remained in place long enough to develop well expressed soil horizons below the surface layer.

Distinct soil horizons will develop if little or no additional sediments are deposited. The weathering process causes some of the finer material in the surface layer to move into the subsoil, thus altering the color, texture, and structure of the subsoil. Center and Kurk soils are examples of older, intermediate age soils that have formed in alluvium on stable stream terraces of loess uplands that no longer receive frequent deposition of new materials.

The oldest soils in the survey area occur on loess uplands, having soil profiles with distinct, well expressed horizons. Feliciana and Grenada soils have been in place and subjected to the influence of plants, animals, and climate long enough to acquire distinct profile characteristics. These soils have distinct or prominent clay films within the subsoil due to the finer clay particles being translocated from the uppermost surface horizons. Most of the soluble bases have been leached downward through the soil profile, resulting in a naturally acid subsoil. Soils exhibiting such characteristics are considered mature.

Processes of Horizon Differentiation

Soil horizons form as parent material weathers. These horizons are discernible by such soil properties as color, structure, texture, and consistence. "Soil Taxonomy" identifies certain soil horizons or diagnostic features used in the classification system (Soil Survey Staff 1998 and 1999). Some of the more prominent pedogenic processes and diagnostic features commonly found in the soils within the survey area are described in this section.

Most soils within the survey area have three major horizons—A, B, and C.

The *A horizon* is the dark surface layer enriched with humus, or organic matter. If undisturbed, it has a loose, granular structure. A surface layer that has been disturbed by plowing or disking is called an Ap horizon.

The *B horizon*, or subsoil, lies below the A horizon. It is characterized by the maximum accumulation of dissolved or suspended material, such as iron and clay. It generally has blocky structure and is firmer than the overlying A horizon. Very young soils, such as Crevasse and Robinsonville soils, do not have a B horizon.

Below the B horizon is the *C horizon*, which is little affected by the soil-forming processes but can be highly modified by geologic weathering.

Some organic matter has accumulated in all the soils within the survey area. Moderate to high amounts of organic matter occur in the surface layer of soils on flood plains. Many areas on the Mississippi River flood plain contain soils having thick, very dark surface layers, thus resulting in the formation of a mollic epipedon. These soils are rich in bases and have moderate to high base saturation. The more sloping portions of the uplands contain low amounts of organic matter. In most soils, the organic matter content decreases sharply from the surface layer to the subsoil.

The size of particles in soils ranges from sand to very small clay minerals. Some of the clay particles form via weathering of larger particles, but most of the differences among the soils in the survey area are attributed to differences among varying parent materials. The smaller particles, particularly the clay fraction, are subject to redistribution within the soil profile. As water moves vertically through the soil, clay particles are removed from the A horizon and deposited as clay films in the subsoil. This leads to the development of an argillic diagnostic subsoil horizon. Most of the soils occurring on loess uplands and stream terraces within the survey area have well expressed argillic horizons. The better expressed argillic horizons occur in the Center, Feliciana, and Loring soils.

Soils having the highest clay content throughout the soil profile occur at a low elevation, such as slackwater areas of the Mississippi River flood plain. These areas are far from the present-day river channel and flood almost annually due to backwater when the river is at flood stage. Floodwater from this type of event is low velocity, laminar flow carrying the finest particles capable of remaining in suspension. Therefore, these soils have very high clay content throughout, but the clay in these soils is a result of depositional sediment (i.e., parent material) rather than pedogenic weathering. The clay fraction of these soils is dominated by 2:1 minerals, primarily smectite, which causes them to swell upon wetting and crack upon drying. Soils exhibiting such features are said to have vertic properties. These soils form wide cracks in the upper part upon drying out in late summer and early fall months (see fig. 18, page 171). Soils such as Bondurant, Openlake, and Sharkey are examples.

A fragipan layer, or layers containing fragic properties, occurs within the subsoil of many nearly level to sloping soils on uplands. The fragipan is a diagnostic subsoil horizon that is dense, compact, and slowly permeable to vertical water movement. It contains bleached fracture planes that form "honeycomb-shaped" polygons when observed in plan view. The brown soil material between the bleached polygons is virtually impermeable to vertical water movement. The strength of the fragipan varies throughout the survey area.

Upland areas west of Little Bayou de Chien have appreciably weaker fragipan horizons than those areas east of Little Bayou de Chien. Therefore, in the western portion of the county, the fragipan is not nearly as root restrictive or impervious to vertical water movement as compared to the fragipan horizons occurring in the eastern portion of the county. In terms of individual soils, the fragipan is rather weak in Loring soils, having a slightly restrictive effect on vertical water movement and root growth. The fragipan in Calloway and Grenada soils is more compact with a higher proportion of brittle peds, thus appearing more restrictive than the fragipan in the Loring soils. In addition, pedogenic processes have stripped clay and iron from areas within the upper part of the argillic or fragipan layer(s) of Calloway and Grenada soils, leaving wide bleached (i.e., white) “tongues” between prisms in the upper part of the fragipan. This has resulted in the development of glossic horizons in these soils.

Soils that are saturated for long periods have a matrix color of various shades of gray that is often speckled with brown, red, or orange mottles. These features are considered redoximorphic features. Gleying is the process that yields the gray colors. It is caused by a combination of excessive wetness and a corresponding low content of dissolved oxygen. The gray color represents an area where iron has been reduced from Fe^{3+} to Fe^{2+} and has been depleted. The brown, red, and orange speckled colors are areas where iron has reoxidized and accumulated during occasional periods when the soil dries out. Quite commonly, black stains, nodules, or concretions of iron and/or manganese oxides form as a result of these oxidation-reduction processes. Mhoon, Routon, and Waverly soils have a gray or light brownish gray, mottled subsoil as a result of gleying. Unless drained, these soils have aquic conditions in the upper part and are saturated for a good portion of the winter and early spring months due to a high ground-water table. During the summer and early fall, however, the water table recedes and the soils dry out.

Geology, Geomorphic, and Soil Relationships

Fulton County is in the southwest corner of Kentucky’s Jackson Purchase Physiographic Region. This region stretches from the Tennessee River (Kentucky Lake) westward to the Mississippi River and is bounded on the north by the Ohio River and to the south by the state of Tennessee. The region represents the northernmost tip of the Gulf Coast embayment area, a down-warped basin of Paleozoic rocks filled in upward succession with unconsolidated Cretaceous, Tertiary, and Quaternary age sediments (fig. 27).

These sediments were deposited when the Gulf of Mexico extended as far north as the southern tip of Illinois, just north of the present-day Ohio River. Sediments consisting primarily of sands, silts, clays, and gravel were deposited on top of consolidated Paleozoic rocks ranging in age from Mississippian in the eastern and northeastern periphery of the region to Ordovician in the southwest (Olive, 1972). The eroded bedrock floor of the basin and the overlying sediments dip gently to the west, from the periphery of the embayment along the western edge of Kentucky Lake toward the embayment’s axis which roughly parallels the Mississippi River. In Fulton County, the depth to bedrock ranges from about 1,650 to 1,700 feet below the surface along the eastern portion of the county between Fulton and Crutchfield to between 2,000 to 2,200 feet in depth along the loess bluff ridgetops between Brownsville and Hickman.

The survey area is part of one of the most seismically active areas in the United States—the New Madrid seismic zone. This zone zigzags northeasterly from Marked Tree, Arkansas, to Cairo, Illinois. Three of the most powerful earthquakes in U.S. history occurred in this area during the winter of 1811-1812 (fig. 28). It is estimated the three earthquakes were of magnitude 7.5 or greater on the Richter scale, in addition to the hundreds of aftershocks that followed. New Madrid, Missouri, which bore the brunt of the seismic shocks during this event, and for which the seismic region is named, is located just across the Mississippi River from the Madrid Bend portion of Fulton County. Reelfoot Lake, whose wildlife management area’s northern reach extends into Fulton County, formed as a result of local uplifting and subsidence produced from these powerful earthquakes. The geological makeup of the former embayment, namely loose unconsolidated sediments, would do little to thwart the ground motion of resulting seismic waves should an earthquake of similar magnitude occur today.

In most of the Jackson Purchase region, strata of Eocene age and older are mostly concealed by alluvium, loess, and continental deposits, which are composed of gravel, sand, and clay. The following paragraphs discuss the surficial geological deposits within the survey area and the soils commonly associated with each one.

Loess

Loess, derived from the German Löss meaning loose, occurs as a surficial blanket capping most of the uplands in the survey area. It consists of windblown deposits, mostly quartz silt, of varying thickness whose likely source was “glacial outwash flour” from the flood plains of the Mississippi River valley during the Pleistocene ice age.

During the Pleistocene, the retreat of continental ice sheets northward resulted in glacial meltwaters depositing debris along the flood plains of the Mississippi valley. Most geologists consider this event to have begun about 40,000 years ago, and lasted for nearly 30,000 years (Smith, 1942). As the broad flood plain flats dried out, the finer glacial debris (or rock flour) was exposed to southward blowing wind currents that picked up the rock flour and redeposited it over adjoining upland areas. This dual fluviatile-

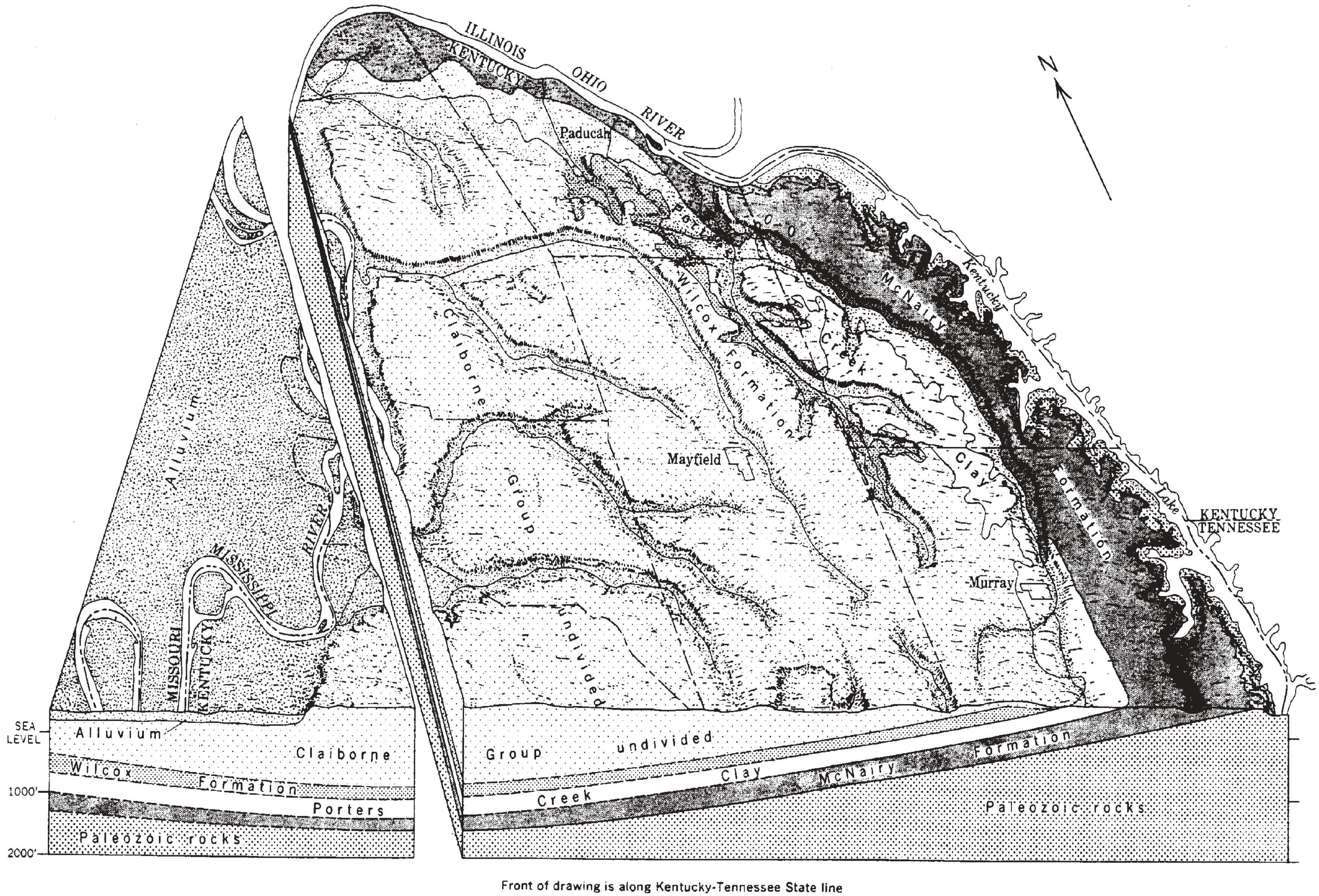

Figure 27.—This diagram shows the generalized stratigraphy and structure of the Jackson Purchase Region in Kentucky (from plate 9, USGS Water Sup. Paper 1987; Davis, Lambert, and Hansen Jr., 1973).

Figure 28.—State historical marker regarding the 1811-1812 earthquakes in the seismic region.

aeolian origin of loess is supported by the fact these deposits are thickest near the bluffs along the major river valleys and progressively become thinner with distance away from the broad alluvial valleys (Roberts and Gildersleeve, 1950; Smith, 1942).

In Fulton County, the loess is commonly 50 to nearly 100 feet thick along the loess bluff adjacent to the Mississippi River flood plain. Due to the steep topography and high silt content of the loess, numerous gullies and landslides resembling miniature badlands occur along the bluff's west-facing side slopes. The loess progressively thins eastward across Fulton County, ranging from 10 to 15 feet in thickness near the Hickman County line (USGS, 1963a-c).

Two loess deposits blanket most of the uplands within the survey area. The uppermost loess, commonly referred to as the Peoria loess, is buff to tan colored with a highly silty character. Underlying the Peoria is a darker, chocolate-brown colored loess that is a bit grittier in texture than the Peoria. This lower loess deposit is commonly referred to as the Roxana silt. The Peoria is considerably thicker than the Roxana throughout the survey area. The contact between these two deposits is not clearly defined and a mixing zone commonly occurs (USGS, 1971a-b). With both loess deposits, quartz and feldspar minerals dominate the coarse silt fraction; quartz, illite, feldspar, and kaolinite dominate the fine silt fraction. Dominant soils that have formed in thick loess deposits are the Calloway, Feliciana, Grenada, Loring, and Memphis soils. These soils are very deep with a moderately acid to very strongly acid subsoil.

Underlying the loess deposits are Continental deposits consisting primarily of gravel and sand with thin interbedded lenses of clay. Due to the thickness of the surficial loess cap in Fulton County, these sediments are exposed only on the lowest parts of side slopes where local drainageways have cut through the loess. In fact, the Continental deposits are so well concealed that no soils having formed in this parent material were capable of being mapped during the course of the survey.

Alluvium

Alluvial sediments are water-lain deposits and occur on flood plains and stream terraces along the major drainageways within the survey area. Like the loess deposits, these sediments are Quaternary in age and, geologically, are the youngest sediments in Fulton County.

Two types of alluvium occur in Fulton County. One source of alluvium consists of silt washed from loess uplands and deposited along flood plains that drain them. The largest areas of this alluvium occur along Bayou de Chien, Little Bayou de Chien, Mud Creek, and Rush Creek that flow north and west toward the Mississippi River. Where the alluvium is acid, generally in the eastern one-third of the county, the resulting soils are the Collins, Falaya, and Waverly series. Progressing westward toward the confluence of these drainageways with the mouth of Bayou de Chien the soils are nonacid, typically consisting of Adler, Convent, Dekoven, and Mhoon soils. The higher geomorphic stream terrace positions contain soils with more morphological development, such as the Center, Kurk, and Routon soils. Characteristic of their source material, soils along the flood plains and stream terraces of the loess uplands contain high silt content and low sand content.

The other type of alluvium in Fulton County occurs along the southern Mississippi River valley flood plain. This valley extends from Cairo, Illinois, to the Gulf of Mexico, meandering over a distance of about 900 miles (Southern Cooperative Series, 1970). The source for these alluvial sediments in Fulton County is a 918,500 square-mile drainage area representing the Ohio River and Upper Mississippi River drainage systems covering portions of 25 states and 2 Canadian Provinces. The thickness of these sediments range from 100 to 200 feet and is due in large part to the high sediment yield and areal extent of these drainage systems (USGS 1963a-c, 1971a-b, and 1974). There is considerably more textural and geomorphic variability associated with the alluvium of the Mississippi River valley as compared to the alluvium derived from loess uplands. Nearly 60,000 acres in Fulton County formed in Mississippi River alluvium.

The surficial geology and topography of the present-day Mississippi River flood plain in Fulton County is largely the result of a series of fluvial erosional and aggradational processes occurring over a rather long period of time. Such processes as flood plain scouring and deposition, channel meandering, and channel erosion from large flood events have helped sculpt the geological and geomorphic composition of the contemporary flood plain.

Natural levees occur on the flood plain near the present river channel and along areas adjacent to where the river channel formerly existed. Sand and coarse materials were deposited soon after turbulent floodwaters left the streambank. Natural levees are generally at a higher elevation than surrounding land features on the flood plain. The Crevasse, Robinsonville, and Ware soils occur on higher natural levee positions. Crevasse soils are dominated by medium to coarse sand, whereas Robinsonville and Ware soils are predominantly fine sand and very fine sand textured throughout. It is quite common for Robinsonville and Ware soils to contain 60 to 85 percent fine sand and very fine sand from 1 foot to a depth of 5 feet.

Areas of old river channels, or where river floodwaters have scoured and removed materials leaving behind shallow depressions, contain sediments that are predominantly clay and fine silt. The lowest areas on the flood plain are backswamps dominated by poorly drained soils having formed in clayey, slackwater alluvium high in smectitic minerals. Sharkey soils commonly occur in backswamps (see fig. 11, page 126). Elongated, slightly depressional areas at a higher elevation than the backswamps are dominated by slackwater alluvium that has better internal drainage. Soils such as Bondurant and Openlake commonly occur in these areas.

Between the lower-lying backswamps and the higher elevation natural levees are broader parts of the flood plain containing loamy alluvium that is high in silt and moderate in clay and sand content. Quartz, feldspars, and micaceous minerals dominate the coarse silt fraction, and mixed aluminosilicate clay minerals dominate the fine silt (Southern Cooperative Series, 1970). These soils are predominantly somewhat poorly drained to well drained. Bardwell and Commerce soils commonly occur on such areas.

Finally, as a result of the river migrating and changing its course over time, clayey slackwater sediments have been deposited over the older natural levees producing soils such as Bowdre, Keyespoint, Phillippy, and Tunica. These soils are clayey in the upper 1.5 to 3 feet, with loamy layers underneath. As a general rule, the Keyespoint and Phillippy soils occur adjacent to the present-day natural levees, whereas the Bowdre and Tunica soils are adjacent to the backswamps.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

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 geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Backslopes in profile are commonly steep, are linear, and may or may not include cliff segments.

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. 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 planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottomland. The normal flood plain of a stream, subject to flooding.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but 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.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cretaceous period. The third period of the Mesozoic era of geologic time extending from the end of the Jurassic period (about 144 million years ago) to the beginning of the Tertiary period (about 63 million years ago).

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

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.

Eocene. The second epoch of the Tertiary period of geologic time beginning 58 million years ago and ending 37 million years ago.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

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 layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

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. Synonym: scarp.

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.

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*.

Fine textured soil. Sandy clay, silty clay, or clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Flood plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream or river breaks through a levee (natural or artificial) and deposits its material (often coarse grained) on the flood plain.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

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.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

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 is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

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.

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.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration 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.

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

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. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Mississippian period. The fifth period of the Paleozoic era of geologic time extending from the end of the Devonian period (about 345 million years ago) to the beginning of the Pennsylvanian period (about 310 million years ago).

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).

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Ordovician period. The second period of the Paleozoic era of geologic time extending from the end of the Cambrian period (about 500 million years ago) to the beginning of the Silurian period (about 425 million years ago).

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

Paleocene. The first epoch of the Tertiary period of geologic time beginning 66 million years ago and ending approximately 58 million years ago.

Paleozoic era. The geologic era between the Precambrian and Mesozoic eras. The Paleozoic era was between 600 million and 230 million years ago and was characterized by abundant fishes, amphibians, reptiles, and land plants.

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.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 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

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Pleistocene. The first epoch of the Quaternary period of geologic time beginning about 1 million years ago and ending approximately 10,000 years ago in which the dominant feature was marked by extensive glaciation.

Pliocene. The fifth epoch of the Tertiary period of geologic time beginning about 5 million years ago and ending approximately 1 million years ago, immediately preceding the Quaternary period.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

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.

Quaternary period. The second period of the Cenozoic era of geologic time extending from the end of the Tertiary period (about 1 million years ago) to the present.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

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.

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.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slackwater. A quiet part of, or a still body of water in a stream.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

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
Sloping	6 to 12 percent
Moderately steep	12 to 20 percent
Steep	20 to 30 percent
Very steep	30 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 2 percent
Undulating	2 to 6 percent
Rolling	6 to 12 percent
Hilly	12 to 20 percent
Steep	20 to 30 percent
Very steep	30 percent and higher

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

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. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Subsurface layer. Any subsurface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

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. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Tertiary period. The first period of the Cenozoic era of geologic time following the Mesozoic era and preceding the Quaternary period (about 63 million to 1 million years ago).

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.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Union City, Kentucky)

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average daily	Temperature: 2 years in 10 will have-- Maximum temperature higher than--	Temperature: 2 years in 10 will have-- Minimum temperature lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more	Precipitation: Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	42.8	25.0	33.9	71	-3	11	3.77	2.27	5.12	6	3.8
February----	48.6	28.5	38.5	75	3	24	4.03	2.20	5.64	6	3.4
March-------	58.5	37.4	47.9	81	18	100	4.92	2.95	6.69	8	1.2
April-------	68.7	46.1	57.4	87	28	258	4.86	3.06	6.49	7	0.0
May---------	77.5	56.0	66.7	91	39	516	5.08	2.97	6.97	8	0.0
June--------	85.9	64.5	75.2	96	48	757	4.80	2.49	6.81	6	0.0
July--------	89.3	68.2	78.8	99	55	880	4.17	1.80	6.19	6	0.0
August------	88.2	65.1	76.7	98	52	817	3.19	1.13	4.90	4	0.0
September---	82.0	57.4	69.7	96	38	591	3.25	1.27	4.91	5	0.0
October-----	71.5	45.1	58.3	88	29	277	3.84	1.87	5.54	5	0.1
November----	58.4	37.1	47.8	80	19	96	4.98	2.83	6.90	7	0.3
December----	47.4	29.0	38.2	70	5	23	5.01	2.55	7.15	7	0.8
Yearly:											
Average----	68.2	46.6	57.4	---	---	---	---	---	---	---	---
Extreme----	103	-14	---	100	-6	---	---	---	---	---	---
Total------	---	---	---	---	---	4,351	51.90	44.24	58.18	75	9.4

* 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 1970-2000 at Union City, Kentucky)

Probability	Temperature: 24 °F or lower	Temperature: 28 °F or lower	Temperature: 32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 21	April 9	April 17
2 years in 10 later than--	March 15	April 4	April 12
5 years in 10 later than--	March 4	March 25	April 4
First freezing temperature in fall:			
1 year in 10 earlier than--	November 5	October 22	October 6
2 years in 10 earlier than--	November 11	October 27	October 12
5 years in 10 earlier than--	November 21	November 6	October 22

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Union City, Kentucky)

Probability	Daily minimum temperature during growing season: Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	239	204	182
8 years in 10	246	211	188
5 years in 10	261	225	201
2 years in 10	275	239	213
1 year in 10	282	247	220

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
Ac	Adler silt loam, 0 to 2 percent slopes, protected	271	0.2
Ad	Adler silt loam, 0 to 2 percent slopes, occasionally flooded	432	0.3
Ba	Bardwell silt loam, 0 to 2 percent slopes, protected	1,551	1.1
Bd	Bardwell silt loam, 0 to 2 percent slopes, occasionally flooded	827	0.6
Be	Bardwell silt loam, 0 to 2 percent slopes, frequently flooded	1,310	0.9
Bf	Bardwell silty clay loam, 0 to 2 percent slopes, frequently flooded	559	0.4
Bn	Bondurant silty clay loam, 0 to 2 percent slopes, protected	2,225	1.5
Bo	Bondurant silty clay loam, 0 to 2 percent slopes, frequently flooded	1,218	0.8
Br	Bowdre silty clay, 0 to 2 percent slopes, protected	2,991	2.0
Bw	Bowdre silty clay, 0 to 2 percent slopes, frequently flooded	572	0.4
CaA	Calloway silt loam, 0 to 2 percent slopes	2,403	1.6
CaB2	Calloway silt loam, 2 to 4 percent slopes, eroded	3,235	2.2
CeA	Center silt loam, 0 to 3 percent slopes	282	0.2
CfA	Center silt loam, 0 to 3 percent slopes, occasionally flooded	106	*
Cg	Collins silt loam, 0 to 2 percent slopes, occasionally flooded	574	0.4
Ch	Commerce silt loam, 0 to 2 percent slopes, protected	3,108	2.1
Ck	Commerce silt loam, 0 to 2 percent slopes, occasionally flooded	606	0.4
Cm	Commerce silt loam, 0 to 2 percent slopes, frequently flooded	5,096	3.5
Cn	Commerce silty clay loam, 0 to 2 percent slopes, occasionally flooded	382	0.3
Co	Commerce silty clay loam, 0 to 2 percent slopes, frequently flooded	2,254	1.5
Cp	Convent silt loam, 0 to 2 percent slopes, protected	983	0.7
Cr	Convent silt loam, 0 to 2 percent slopes, occasionally flooded	3,925	2.7
Cs	Convent silt loam, 0 to 2 percent slopes, frequently flooded	392	0.3
Ct	Convent-Mhoon complex, 0 to 2 percent slopes, occasionally flooded	461	0.3
Cu	Convent-Mhoon complex, 0 to 2 percent slopes, frequently flooded	3,189	2.2
Cv	Crevasse loamy fine sand, 0 to 3 percent slopes, occasionally flooded	1,310	0.9
Cw	Crevasse loamy fine sand, 0 to 3 percent slopes, frequently flooded	3,240	2.2
Cx	Crevasse silt loam, 0 to 3 percent slopes, frequently flooded	282	0.2
De	Dekoven silt loam, drained, 0 to 2 percent slopes, occasionally flooded	782	0.5
Dk	Dekoven silt loam, drained, 0 to 2 percent slopes, frequently flooded	166	0.1
Do	Dekoven silt loam, drained, 0 to 2 percent slopes, occasionally flooded, overwash	1,873	1.3
Dv	Dekoven silt loam, drained, 0 to 2 percent slopes, frequently flooded, overwash	142	*
Fa	Falaya silt loam, 0 to 2 percent slopes, occasionally flooded	2,526	1.7
Fc	Falaya-Waverly complex, 0 to 2 percent slopes, occasionally flooded	443	0.3
FnA	Feliciana silt loam, 0 to 2 percent slopes	5	*
FnB	Feliciana silt loam, 2 to 6 percent slopes	1,745	1.2
FnB2	Feliciana silt loam, 2 to 6 percent slopes, eroded	216	0.1
FnC2	Feliciana silt loam, 6 to 12 percent slopes, eroded	263	0.2
FnC3	Feliciana silt loam, 6 to 12 percent slopes, severely eroded	578	0.4
FnD3	Feliciana silt loam, 12 to 20 percent slopes, severely eroded	543	0.4
FnE3	Feliciana silt loam, 20 to 30 percent slopes, severely eroded	86	*
GrA	Grenada silt loam, 0 to 2 percent slopes	1,054	0.7
GrB	Grenada silt loam, 2 to 6 percent slopes	5,067	3.4
GrB2	Grenada silt loam, 2 to 6 percent slopes, eroded	3,639	2.5
GrB3	Grenada silt loam, 4 to 6 percent slopes, severely eroded	1,044	0.7
GrC2	Grenada silt loam, 6 to 12 percent slopes, eroded	2,059	1.4
GrC3	Grenada silt loam, 6 to 12 percent slopes, severely eroded	2,263	1.5
GuF	Gullied land-Memphis complex, 30 to 50 percent slopes	203	0.1
Ke	Keyespoint silty clay loam, 0 to 2 percent slopes, protected	405	0.3
Kf	Keyespoint silty clay loam, 0 to 2 percent slopes, frequently flooded	1,184	0.8
KrA	Kurk silt loam, 0 to 2 percent slopes	1,363	0.9
KsA	Kurk silt loam, 0 to 2 percent slopes, occasionally flooded	446	0.3
KuA	Kurk silt loam, 0 to 2 percent slopes, frequently flooded	221	0.1
LEVEE	Levee	580	0.4
LoA	Loring silt loam, 0 to 2 percent slopes	315	0.2
LoB	Loring silt loam, 2 to 6 percent slopes	7,785	5.3
LoB2	Loring silt loam, 2 to 6 percent slopes, eroded	1,408	1.0
LoB3	Loring silt loam, 4 to 6 percent slopes, severely eroded	1,105	0.7
LoC2	Loring silt loam, 6 to 12 percent slopes, eroded	1,155	0.8
LoC3	Loring silt loam, 6 to 12 percent slopes, severely eroded	6,180	4.2

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
LoD3	Loring silt loam, 12 to 20 percent slopes, severely eroded	1,884	1.3
M-W	Miscellaneous water	76	*
MeA	Memphis silt loam, 0 to 2 percent slopes	123	*
MeB	Memphis silt loam, 2 to 6 percent slopes	4,160	2.8
MeB2	Memphis silt loam, 2 to 6 percent slopes, eroded	811	0.5
MeC2	Memphis silt loam, 6 to 12 percent slopes, eroded	419	0.3
MeC3	Memphis silt loam, 6 to 12 percent slopes, severely eroded	1,512	1.0
MeD3	Memphis silt loam, 12 to 20 percent slopes, severely eroded	1,081	0.7
MeE3	Memphis silt loam, 20 to 30 percent slopes, severely eroded	1,514	1.0
MmF	Memphis-Natchez complex, 30 to 50 percent slopes, gullied	2,310	1.6
Mo	Mhoon silt loam, ponded	1,050	0.7
Op	Openlake silty clay loam, 0 to 2 percent slopes, protected	1,252	0.8
Os	Openlake silty clay loam, 0 to 2 percent slopes, frequently flooded	3,528	2.4
Ph	Phillippy silty clay loam, 0 to 3 percent slopes, protected	1,730	1.2
Pp	Phillippy silty clay loam, 0 to 3 percent slopes, frequently flooded	680	0.5
PtD	Pits-Udorthents complex, 0 to 20 percent slopes	137	*
Ra	Riverwash, 0 to 3 percent slopes, frequently flooded	1,233	0.8
Rb	Robinsonville fine sandy loam, 0 to 3 percent slopes, protected	339	0.2
Rc	Robinsonville fine sandy loam, 0 to 3 percent slopes, occasionally flooded	993	0.7
Rf	Robinsonville fine sandy loam, 0 to 3 percent slopes, frequently flooded	903	0.6
RmD	Robinsonville fine sandy loam, natural levee, 8 to 25 percent slopes, occasionally flooded	133	*
Ro	Roellen silty clay, 0 to 2 percent slopes, occasionally flooded	744	0.5
RsA	Routon silt loam, 0 to 2 percent slopes	661	0.4
RtA	Routon silt loam, 0 to 2 percent slopes, occasionally flooded	33	*
RuA	Routon silt loam, 0 to 2 percent slopes, frequently flooded	634	0.4
Sc	Sharkey silty clay, ponded	1,158	0.8
Sh	Sharkey silty clay, 0 to 2 percent slopes, protected	713	0.5
Sk	Sharkey silty clay, 0 to 2 percent slopes, frequently flooded	4,439	3.0
Tc	Tunica silty clay, 0 to 2 percent slopes, protected	534	0.4
Tu	Tunica silty clay, 0 to 2 percent slopes, frequently flooded	1,447	1.0
UdC	Udorthents-Urban land complex, 5 to 25 percent slopes	269	0.2
UrB	Urban land-Udorthents complex, 2 to 8 percent slopes	216	0.1
W	Water	14,452	9.8
Wa	Ware loam, 0 to 2 percent slopes, protected	1,615	1.1
Wm	Ware loam, 0 to 2 percent slopes, occasionally flooded	703	0.5
Wr	Ware silt loam, 0 to 2 percent slopes, protected	1,633	1.1
Ws	Ware silt loam, 0 to 2 percent slopes, frequently flooded	1,741	1.2
	Total	147,488	100.0

* Less than 0.1 percent.

Table 5.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Soil name
Ac	Adler silt loam, 0 to 2 percent slopes
Ad	Adler silt loam, 0 to 2 percent slopes, occasionally flooded
Ba	Bardwell silt loam, 0 to 2 percent slopes
Bd	Bardwell silt loam, 0 to 2 percent slopes, occasionally flooded
Be	Bardwell silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
Bf	Bardwell silty clay loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
Bn	Bondurant silty clay loam, 0 to 2 percent slopes (where drained)
Bo	Bondurant silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Br	Bowdre silty clay, 0 to 2 percent slopes (where drained)
Bw	Bowdre silty clay, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
CaA	Calloway silt loam, 0 to 2 percent slopes (where drained)
CaB2	Calloway silt loam, 2 to 4 percent slopes, eroded
CeA	Center silt loam, 0 to 3 percent slopes
CfA	Center silt loam, 0 to 3 percent slopes, occasionally flooded
Cg	Collins silt loam, 0 to 2 percent slopes, occasionally flooded
Ch	Commerce silt loam, 0 to 2 percent slopes (where drained)
Ck	Commerce silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
Cm	Commerce silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Cn	Commerce silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
Co	Commerce silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Cp	Convent silt loam, 0 to 2 percent slopes (where drained)
Cr	Convent silt loam, 0 to 2 percent slopes, occasionally flooded
Cs	Convent silt loam, 0 to 2 percent slopes, frequently flooded
Ct	Convent-Mhoon complex, 0 to 2 percent slopes, occasionally flooded (where drained)
Cu	Convent-Mhoon complex, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
De	Dekoven silt loam, drained, 0 to 2 percent slopes, occasionally flooded
Dk	Dekoven silt loam, drained, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
Do	Dekoven silt loam, drained, 0 to 2 percent slopes, occasionally flooded, overwash
Dv	Dekoven silt loam, drained, 0 to 2 percent slopes, frequently flooded, overwash (where protected from flooding or not frequently flooded during the growing season)
Fa	Falaya silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
Fc	Falaya-Waverly complex, 0 to 2 percent slopes, occasionally flooded (where drained)
FnA	Feliciana silt loam, 0 to 2 percent slopes
FnB	Feliciana silt loam, 2 to 6 percent slopes
FnB2	Feliciana silt loam, 2 to 6 percent slopes, eroded
GrA	Grenda silt loam, 0 to 2 percent slopes
GrB	Grenada silt loam, 2 to 6 percent slopes
GrB2	Grenada silt loam, 2 to 6 percent slopes, eroded
Ke	Keyespoint silty clay loam, 0 to 2 percent slopes (where drained)
Kf	Keyespoint silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
KrA	Kurk silt loam, 0 to 2 percent slopes (where drained)
KsA	Kurk silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
KuA	Kurk silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
LoA	Loring silt loam, 0 to 2 percent slopes
LoB	Loring silt loam, 2 to 6 percent slopes
LoB2	Loring silt loam, 2 to 6 percent slopes, eroded
MeA	Memphis silt loam, 0 to 2 percent slopes
MeB	Memphis silt loam, 2 to 6 percent slopes

Table 5.--Prime Farmland--Continued

Map symbol	Soil name
MeB2	Memphis silt loam, 2 to 6 percent slopes, eroded
Op	Openlake silty clay loam, 0 to 2 percent slopes (where drained)
Os	Openlake silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Ph	Phillippy silty clay loam, 0 to 3 percent slopes
Pp	Phillippy silty clay loam, 0 to 3 percent slopes, frequently flooded
Rb	Robinsonville fine sandy loam, 0 to 3 percent slopes
Rc	Robinsonville fine sandy loam, 0 to 3 percent slopes, occasionally flooded
Rf	Robinsonville fine sandy loam, 0 to 3 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
Ro	Roellen silty clay, 0 to 2 percent slopes, occasionally flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
RsA	Routon silt loam, 0 to 2 percent slopes (where drained)
RtA	Routon silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
RuA	Routon silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Sh	Sharkey silty clay, 0 to 2 percent slopes (where drained)
Sk	Sharkey silty clay, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Tc	Tunica silty clay, 0 to 2 percent slopes (where drained)
Tu	Tunica silty clay, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
Wa	Ware loam, 0 to 2 percent slopes
Wm	Ware loam, 0 to 2 percent slopes, occasionally flooded
Wr	Ware silt loam, 0 to 2 percent slopes
Ws	Ware silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)

Table 6.--Land Capability 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	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
Ac:						
Adler	1	170.00	50.00	60.00	5.00	10.00
Ad:						
Adler	2w	160.00	50.00	60.00	5.00	10.00
Ba:						
Bardwell	1	175.00	60.00	70.00	5.00	10.00
Bd:						
Bardwell	2w	175.00	60.00	65.00	5.00	10.00
Be:						
Bardwell	3w	160.00	50.00	---	---	---
Bf:						
Bardwell	3w	150.00	50.00	---	---	---
Bn:						
Bondurant	2w	145.00	48.00	45.00	4.50	8.00
Bo:						
Bondurant	4w	---	45.00	---	---	---
Br:						
Bowdre	2w	140.00	40.00	40.00	3.50	7.00
Bw:						
Bowdre	4w	---	45.00	---	---	---
CaA:						
Calloway	2w	130.00	45.00	45.00	4.00	8.00
CaB2:						
Calloway	2e	115.00	38.00	40.00	3.50	7.00
CeA, CfA:						
Center	2w	145.00	45.00	55.00	4.50	9.00
Cg:						
Collins	2w	150.00	50.00	60.00	4.50	9.00
Ch, Ck:						
Commerce	2w	165.00	55.00	60.00	4.50	9.00
Cm:						
Commerce	4w	---	45.00	---	---	---
Cn:						
Commerce	2w	160.00	50.00	50.00	4.50	9.00
Co:						
Commerce	4w	---	40.00	---	---	---
Cp:						
Convent	2w	145.00	45.00	55.00	4.00	8.00

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
Cr:						
Convent	2w	140.00	45.00	50.00	4.00	8.00
Cs:						
Convent	3w	125.00	38.00	---	3.00	6.00
Ct:						
Convent	2w	120.00	38.00	---	3.50	7.00
Mhoon	3w	120.00	38.00	---	3.50	7.00
Cu:						
Convent	3w	115.00	38.00	---	3.50	6.00
Mhoon	3w	115.00	38.00	---	3.50	6.00
Cv, Cw:						
Crevasse	6s	---	---	---	---	---
Cx:						
Crevasse	4s	---	20.00	---	---	---
De:						
Dekoven	2w	155.00	50.00	48.00	4.50	9.00
Dk:						
Dekoven	3w	130.00	40.00	---	4.00	8.00
Do:						
Dekoven	2w	155.00	50.00	48.00	4.50	9.00
Dv:						
Dekoven	3w	130.00	40.00	---	4.00	8.00
Fa:						
Falaya	2w	140.00	45.00	48.00	3.50	6.50
Fc:						
Falaya	2w	125.00	45.00	48.00	3.50	6.50
Waverly	3w	125.00	45.00	48.00	3.50	6.50
FnA:						
Feliciana	1	155.00	50.00	55.00	5.00	10.00
FnB:						
Feliciana	2e	155.00	50.00	55.00	5.00	10.00
FnB2:						
Feliciana	2e	150.00	48.00	50.00	5.00	10.00
FnC2:						
Feliciana	3e	140.00	45.00	50.00	4.50	9.00
FnC3:						
Feliciana	4e	130.00	40.00	48.00	4.00	8.00
FnD3:						
Feliciana	6e	---	---	---	3.50	7.00
FnE3:						
Feliciana	7e	---	---	---	---	5.00

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
GrA:						
Grenada	2w	145.00	45.00	55.00	4.50	9.00
GrB:						
Grenada	2e	145.00	45.00	55.00	4.50	9.00
GrB2:						
Grenada	2e	140.00	45.00	50.00	4.50	9.00
GrB3:						
Grenada	3e	120.00	40.00	45.00	3.50	7.00
GrC2:						
Grenada	3e	125.00	45.00	48.00	4.50	9.00
GrC3:						
Grenada	4e	115.00	35.00	45.00	3.50	7.00
GuF:						
Gullied land	7e	---	---	---	---	---
Memphis	7e	---	---	---	---	---
Ke:						
Keyespoint	2w	145.00	48.00	48.00	4.50	8.00
Kf:						
Keyespoint	4w	---	40.00	---	---	---
KrA, KsA:						
Kurk	2w	135.00	40.00	48.00	4.00	8.00
KuA:						
Kurk	3w	120.00	40.00	---	3.50	7.00
LEVEE.						
Levee						
LoA:						
Loring	2w	150.00	50.00	55.00	5.00	10.00
LoB:						
Loring	2e	150.00	50.00	55.00	5.00	10.00
LoB2:						
Loring	2e	145.00	48.00	50.00	4.50	9.00
LoB3:						
Loring	3e	130.00	38.00	48.00	4.00	8.00
LoC2:						
Loring	3e	135.00	40.00	48.00	4.00	8.50
LoC3:						
Loring	4e	120.00	38.00	45.00	3.50	7.00
LoD3:						
Loring	6e	---	---	---	2.50	5.00
M-W.						
Miscellaneous Water						

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
MeA:						
Memphis	1	155.00	50.00	55.00	5.00	10.00
MeB:						
Memphis	2e	155.00	50.00	55.00	5.00	10.00
MeB2:						
Memphis	2e	150.00	50.00	50.00	5.00	10.00
MeC2:						
Memphis	3e	140.00	45.00	50.00	4.50	9.00
MeC3:						
Memphis	4e	130.00	40.00	48.00	4.00	8.00
MeD3:						
Memphis	6e	---	---	---	3.00	5.50
MeE3:						
Memphis	7e	---	---	---	---	5.00
MmF:						
Memphis	7e	---	---	---	---	---
Natchez	7e	---	---	---	---	---
Mo:						
Mhoon	5w	---	---	---	---	---
Op:						
Openlake	2w	145.00	48.00	45.00	4.50	8.00
Os:						
Openlake	4w	---	40.00	---	---	---
Ph:						
Phillippy	2w	150.00	48.00	50.00	4.50	9.00
Pp:						
Phillippy	3w	145.00	48.00	---	---	---
PtD:						
Pits.						
Udorthents	7e	---	---	---	---	---
Ra.						
Riverwash						
Rb:						
Robinsonville	1	130.00	40.00	48.00	4.00	8.00
Rc:						
Robinsonville	2w	130.00	40.00	48.00	4.00	8.00
Rf:						
Robinsonville	3w	130.00	40.00	---	---	---
RmD:						
Robinsonville	4e	---	---	---	3.00	5.00

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
Ro:						
Roellen	3w	125.00	38.00	---	---	---
RsA, RtA:						
Routon	3w	125.00	38.00	40.00	3.50	7.00
RuA:						
Routon	4w	115.00	38.00	---	3.50	7.00
Sc:						
Sharkey	5w	---	---	---	---	---
Sh:						
Sharkey	3w	115.00	38.00	---	3.00	6.00
Sk:						
Sharkey	5w	---	---	---	---	---
Tc:						
Tunica	3w	115.00	38.00	---	3.00	6.00
Tu:						
Tunica	5w	---	---	---	---	---
UdC:						
Udorthents.						
Urban land.						
UrB:						
Urban land.						
Udorthents.						
W.						
Water						
Wa:						
Ware	1	135.00	48.00	55.00	4.00	8.00
Wm:						
Ware	2w	135.00	45.00	50.00	4.00	8.00
Wr:						
Ware	1	160.00	55.00	60.00	4.50	9.00
Ws:						
Ware	3w	140.00	45.00	---	---	---

* Animal-unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 7.--Acreage by Capability Class and Subclass

Capability class	Capability subclass	Acreage
Unclassified	---	16,826
1	---	5,537
2	e	28,066
2	w	32,783
3	e	6,045
3	w	12,395
4	e	10,666
4	w	14,486
4	s	282
5	w	8,094
6	e	3,508
6	s	4,550
7	e	4,250

Table 8.--Forest Productivity

(Only the soils suitable for production of commercial trees are listed. Absence of an 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	
Ac, Ad:				
Adler	American sycamore	115	186	American sycamore, cherrybark oak, eastern cottonwood, green ash, sweetgum
	cherrybark oak	100	157	
	eastern cottonwood	120	186	
	green ash	95	57	
	sweetgum	100	143	
	water oak	100	100	
	willow oak	100	100	
Ba, Bd, Be, Bf:				
Bardwell	American elm	---	---	black walnut, cherrybark oak, green ash, pecan, sweetgum, tuliptree
	boxelder	---	---	
	common hackberry	---	---	
	green ash	---	---	
	pecan	---	---	
	silver maple	---	---	
	sweetgum	---	---	
Bn, Bo:				
Bondurant	American sycamore	100	129	American sycamore, cherrybark oak, eastern cottonwood, sweetgum
	cherrybark oak	100	143	
	eastern cottonwood	110	157	
	green ash	90	---	
	Nuttall oak	100	100	
	pecan	---	---	
	sugarberry	---	---	
	sweetgum	95	114	
Br, Bw:				
Bowdre	American elm	---	---	American sycamore, eastern cottonwood, green ash, sweetgum
	boxelder	---	---	
	cherrybark oak	90	57	
	common hackberry	---	---	
	eastern cottonwood	103	129	
	sweetgum	99	129	
CaA, CaB2:				
Calloway	cherrybark oak	80	114	loblolly pine, sweetgum, tuliptree
	loblolly pine	80	129	
	shortleaf pine	70	114	
	sweetgum	80	86	
	tuliptree	98	100	
	water oak	80	72	
CeA, CfA:				
Center	American elm	---	---	American sycamore, cherrybark oak, eastern cottonwood, green ash, southern red oak, sweetgum
	American sycamore	90	100	
	blackgum	---	---	
	eastern cottonwood	95	114	
	silver maple	---	---	
	southern red oak	75	57	
	swamp white oak	---	---	
	sweetgum	90	100	
	tuliptree	90	86	

Table 8.--Forest Productivity--Continued

Map symbol and soil name	Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
			cu ft/ac	
Cg:				
Collins	American elm	---	---	American sycamore, cherrybark oak, green ash, loblolly pine, sweetgum, tuliptree
	American sycamore	95	114	
	cherrybark oak	120	186	
	green ash	95	57	
	red maple	---	---	
	southern red oak	---	---	
	sweetgum	100	143	
	tuliptree	102	114	
Ch, Ck:				
Commerce	eastern cottonwood	120	186	American sycamore, eastern cottonwood, green ash, Nuttall oak, overcup oak
	green ash	80	---	
	overcup oak	---	---	
	sugarberry	---	---	
	American sycamore	---	---	
Cm:				
Commerce	eastern cottonwood	113	172	American sycamore, eastern cottonwood, green ash, Nuttall oak, overcup oak
	Nuttall oak	---	---	
	overcup oak	---	---	
	sugarberry	---	---	
	water hickory	---	---	
Cn:				
Commerce	eastern cottonwood	120	186	American sycamore, eastern cottonwood, green ash, Nuttall oak, overcup oak
	green ash	80	---	
	overcup oak	---	---	
	sugarberry	---	---	
	American sycamore	---	---	
Co:				
Commerce	eastern cottonwood	113	172	American sycamore, eastern cottonwood, green ash, Nuttall oak, overcup oak
	Nuttall oak	---	---	
	overcup oak	---	---	
	sugarberry	---	---	
	water hickory	---	---	
Cp, Cr:				
Convent	American sycamore	---	---	cherrybark oak, pecan, Shumard's oak, water oak
	eastern cottonwood	120	186	
	green ash	80	57	
	Nuttall oak	90	---	
	pecan	---	---	
	sweetgum	110	172	
	water oak	---	---	
Cs:				
Convent	American sycamore	---	---	American sycamore, eastern cottonwood, green ash, sweetgum
	green ash	---	---	
	pin oak	---	---	
	river birch	---	---	
	sweetgum	105	157	
	willow oak	---	---	
Ct, Cu:				
Convent	American sycamore	---	---	American sycamore, eastern cottonwood, green ash, sweetgum
	green ash	---	---	
	pin oak	---	---	
	river birch	---	---	
	sweetgum	105	157	
	willow oak	---	---	

Table 8.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Ct, Cu:				
Mhoon	black willow	---	---	American sycamore, eastern cottonwood, green ash, sweetgum
	eastern cottonwood	102	129	
	silver maple	---	---	
Cv, Cw, Cx:				
Crevasse	eastern cottonwood	90	100	eastern cottonwood
	sweetgum	90	100	
	white oak	100	72	
De, Dk, Do, Dv:				
Dekoven	American sycamore	---	---	American sycamore, pin oak, sweetgum
	black willow	---	---	
	green ash	---	---	
	overcup oak	---	---	
	pin oak	---	---	
	shellbark hickory	---	---	
	silver maple	---	---	
	swamp white oak	---	---	
	sweetgum	95	114	
Fa:				
Falaya	black willow	---	---	cherrybark oak, eastern cottonwood, green ash, pin oak, sweetgum
	blackgum	---	---	
	cherrybark oak	108	186	
	eastern cottonwood	112	157	
	green ash	90	129	
	hickory	---	---	
	pin oak	---	---	
	red maple	---	---	
	river birch	---	---	
	sugar maple	---	---	
	sweetgum	102	143	
	water oak	100	100	
Fc:				
Falaya	black willow	---	---	cherrybark oak, eastern cottonwood, green ash, pin oak, sweetgum
	blackgum	---	---	
	cherrybark oak	108	186	
	eastern cottonwood	112	157	
	green ash	90	129	
	hickory	---	---	
	pin oak	---	---	
	red maple	---	---	
	river birch	---	---	
	sugar maple	---	---	
	sweetgum	102	143	
	water oak	100	100	
Waverly	cherrybark oak	100	143	American sycamore, cherrybark oak, loblolly pine, sweetgum, water oak, water tupelo, willow oak
	loblolly pine	95	143	
	Nuttall oak	100	---	
	pin oak	---	---	
	sweetgum	100	143	
	water oak	95	86	
	willow oak	95	86	
FnA, FnB, FnB2, FnC2, FnC3, FnD3, FnE3:				
Feliciana	cherrybark oak	90	114	cherrybark oak, loblolly pine, southern red oak
	loblolly pine	90	129	
	sweetgum	90	100	

Table 8.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GrA, GrB, GrB2, GrB3, GrC2, GrC3:				
Grenada	black oak	68	43	cherrybark oak, loblolly pine, shortleaf pine, Shumard's oak, slash pine, sweetgum, water oak, white oak
	cherrybark oak	85	100	
	loblolly pine	85	114	
	shortleaf pine	75	114	
	southern red oak	80	57	
	sweetgum	80	86	
GuF:				
Gullied land	loblolly pine	80	114	loblolly pine, sweetgum, tuliptree
	sweetgum	80	86	
	tuliptree	90	86	
	white oak	70	57	
Memphis	cherrybark oak	90	114	cherrybark oak
	loblolly pine	90	129	
	sweetgum	90	100	
Ke, Kf:				
Keyespoint	American sycamore	100	129	American sycamore, cherrybark oak, eastern cottonwood, sweetgum
	cherrybark oak	100	143	
	eastern cottonwood	110	157	
	green ash	90	---	
	Nuttall oak	---	143	
	pecan	---	---	
	sugarberry	---	---	
	sweetgum	95	114	
KrA, KsA, KuA:				
Kurk	cherrybark oak	85	100	cherrybark oak, eastern cottonwood, green ash, sweetgum, tuliptree
	hickory	85	---	
	red maple	75	43	
	southern red oak	80	57	
	sweetgum	90	100	
	white oak	80	57	
LoA, LoB, LoB2, LoB3, LoC2,LoC3, LoD3:				
Loring	cherrybark oak	86	100	cherrybark oak, loblolly pine, shortleaf pine, southern red oak, tuliptree
	loblolly pine	85	114	
	southern red oak	74	57	
	sweetgum	90	100	
	water oak	82	72	
MeA, MeB, MeB2, MeC2, MeC3, MeD3:				
Memphis	cherrybark oak	90	114	cherrybark oak, loblolly pine, tuliptree
	loblolly pine	90	129	
	sweetgum	90	100	
MeE3:				
Memphis	cherrybark oak	90	114	cherrybark oak, tuliptree
	loblolly pine	90	129	
	sweetgum	90	100	
	tuliptree	---	---	
MmF:				
Memphis	cherrybark oak	90	114	cherrybark oak, tuliptree
	loblolly pine	90	129	
	sweetgum	90	100	
	tuliptree	---	---	

Table 8.--Forest Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
MmF:				
Natchez	eastern cottonwood	105	143	American sycamore, eastern cottonwood, green ash, loblolly pine, sweetgum, tuliptree
	loblolly pine	90	129	
	sweetgum	105	157	
Mo:				
Mhoon	baldcypress	80	57	American sycamore, baldcypress, eastern cottonwood, green ash, sweetgum
	black willow	---	---	
	silver maple	---	---	
	water tupelo	---	---	
Op, Os:				
Openlake	American sycamore	100	129	American sycamore, cherrybark oak, eastern cottonwood, sweetgum
	cherrybark oak	100	143	
	eastern cottonwood	110	157	
	green ash	90	---	
	Nuttall oak	100	100	
	pecan	---	---	
	sugarberry	---	---	
	sweetgum	95	114	
Ph, Pp:				
Phillippy	baldcypress	---	---	baldcypress, eastern cottonwood, pin oak
	eastern cottonwood	95	114	
	pin oak	80	57	
Rb, Rc, Rf, RmD:				
Robinsonville	American sycamore	115	---	American sycamore, eastern cottonwood, sweetgum
	eastern cottonwood	110	157	
	green ash	85	57	
	sweetgum	105	157	
Ro:				
Roellen	cherrybark oak	90	114	eastern cottonwood, sweetgum
	eastern cottonwood	100	129	
	sweetgum	90	100	
	water oak	90	86	
RsA, RtA, RuA:				
Routon	cherrybark oak	110	186	American sycamore, cherrybark oak, eastern cottonwood, green ash, sweetgum
	sweetgum	105	157	
	water oak	90	86	
	white oak	80	57	
	willow oak	90	86	
Sc, Sh, Sk:				
Sharkey	baldcypress	---	---	baldcypress, sweetgum
	black willow	---	---	
	green ash	90	57	
	overcup oak	96	---	
	sugarberry	---	---	
	sweetgum	90	100	
	water hickory	---	---	
	water tupelo	---	---	

Table 8.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Tc:				
Tunica	cherrybark oak	90	114	American sycamore, cherrybark oak, eastern cottonwood, green ash, Nuttall oak, sweetgum
	eastern cottonwood	105	143	
	green ash	100	57	
	Nuttall oak	105	---	
	sweetgum	90	100	
Tu:				
Tunica	cherrybark oak	90	114	baldcypress, cherrybark oak, eastern cottonwood
	eastern cottonwood	105	143	
	green ash	---	---	
	Nuttall oak	---	---	
	overcup oak	---	---	
	sugarberry	100	57	
	water hickory	---	---	

Table 9a.--Forestland 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	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
Ac:							
Adler	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Ad:							
Adler	95	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Ba:							
Bardwell	80	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Bd:							
Bardwell	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Be, Bf:							
Bardwell	80	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Bn:							
Bondurant	80	Moderate		Moderately suited		Severe	
		Stickiness/slope	0.50	Strength	0.50	Strength	1.00
		Strength	0.50	Stickiness	0.50		
				Wetness	0.50		
Bo:							
Bondurant	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50	Stickiness	0.50		
				Wetness	0.50		
Br:							
Bowdre	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
		Stickiness/slope	0.50	Wetness	0.50		
				Stickiness	0.50		
Bw:							
Bowdre	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
		Stickiness/slope	0.50	Wetness	0.50		
				Stickiness	0.50		
CaA, CaB2:							
Calloway	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
CeA:							
Center	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00

Table 9a.--Forestland Management--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
CfA:							
Center	90	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Cg:							
Collins	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Ch:							
Commerce	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Ck:							
Commerce	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Cm:							
Commerce	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
Cn:							
Commerce	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Co:							
Commerce	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
Cp:							
Convent	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Cr:							
Convent	90	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Cs:							
Convent	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
Ct:							
Convent	55	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Mhoon	40	Moderate		Moderately suited		Severe	
		Flooding	0.50	Wetness	0.50	Strength	1.00
		Strength	0.50	Flooding	0.50		
				Strength	0.50		

Table 9a.--Forestland Management--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
Cu:							
Convent	55	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
Mhoon	40	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Wetness	0.50		
				Strength	0.50		
Cv:							
Crevasse	90	Slight		Well suited		Moderate	
						Strength	0.50
Cw, Cx:							
Crevasse	90	Moderate		Moderately suited		Moderate	
		Flooding	0.50	Flooding	0.50	Strength	0.50
De:							
Dekoven	80	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
Dk:							
Dekoven	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
Do:							
Dekoven	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Dv:							
Dekoven	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
Fa:							
Falaya	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
Fc:							
Falaya	50	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
Waverly	45	Moderate		Poorly suited		Severe	
		Flooding	0.50	Wetness	1.00	Strength	1.00
		Strength	0.50	Flooding	0.50		
				Strength	0.50		
FnA, FnB, FnB2:							
Feliciana	95	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00

Table 9a.--Forestland Management--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
FnC2:							
Feliciana	95	Moderate		Moderately suited		Severe	
		Strength	0.50	Slope	0.50	Strength	1.00
				Strength	0.50		
FnC3:							
Feliciana	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Slope	0.50	Strength	1.00
				Strength	0.50		
FnD3:							
Feliciana	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
FnE3:							
Feliciana	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Landslides	0.50	Strength	0.50		
		Strength	0.50	Landslides	0.50		
GrA:							
Grenada	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
GrB:							
Grenada	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
GrB2:							
Grenada	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
GrB3:							
Grenada	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
GrC2, GrC3:							
Grenada	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Slope	0.50	Strength	1.00
				Strength	0.50		
				Wetness	0.50		
GuF:							
Gullied land	60	Not rated		Not rated		Not rated	
Memphis	35	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	1.00	Landslides	1.00		
		Strength	0.50	Strength	0.50		
Ke:							
Keyespoint	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		

Table 9a.--Forestland Management--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
Kf:							
Keyespoint	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
KrA:							
Kurk	80	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
KsA:							
Kurk	80	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
KuA:							
Kurk	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
LEVEE:							
Levee	100	Not rated		Not rated		Not rated	
LoA, LoB, LoB2:							
Loring	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
LoB3:							
Loring	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
LoC2:							
Loring	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Slope	0.50	Strength	1.00
				Strength	0.50		
LoC3:							
Loring	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Slope	0.50	Strength	1.00
				Strength	0.50		
				Wetness	0.50		
LoD3:							
Loring	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
M-W:							
Miscellaneous Water	100	Not rated		Not rated		Not rated	
MeA, MeB, MeB2:							
Memphis	95	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00

Table 9a.--Forestland Management--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
MeC2:							
Memphis	95	Moderate		Moderately suited		Severe	
		Strength	0.50	Slope	0.50	Strength	1.00
				Strength	0.50		
MeC3:							
Memphis	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Slope	0.50	Strength	1.00
				Strength	0.50		
MeD3:							
Memphis	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
MeE3:							
Memphis	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Landslides	0.50	Strength	0.50		
		Strength	0.50	Landslides	0.50		
MmF:							
Memphis	55	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	1.00	Landslides	1.00		
		Strength	0.50	Strength	0.50		
Natchez	35	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	1.00	Landslides	1.00		
		Strength	0.50	Strength	0.50		
Mo:							
Mhoon	90	Severe		Poorly suited		Severe	
		Wetness	1.00	Ponding	1.00	Wetness	1.00
		Strength	0.50	Wetness	1.00	Strength	1.00
				Strength	0.50		
Op:							
Openlake	90	Moderate		Moderately suited		Severe	
		Stickiness/slope	0.50	Strength	0.50	Strength	1.00
		Strength	0.50	Stickiness	0.50		
				Wetness	0.50		
Os:							
Openlake	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50	Stickiness	0.50		
				Wetness	0.50		
Ph:							
Phillippy	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Pp:							
Phillippy	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
PtD:							
Pits	75	Not rated		Not rated		Not rated	

Table 9a.--Forestland Management--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
PtD:							
Udorthents	15	Not rated		Not rated		Not rated	
Ra:							
Riverwash	100	Not rated		Not rated		Not rated	
Rb:							
Robinsonville	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Rc:							
Robinsonville	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Rf:							
Robinsonville	90	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
RmD:							
Robinsonville	90	Moderate		Moderately suited		Severe	
		Flooding	0.50	Slope	0.50	Strength	1.00
		Strength	0.50	Flooding	0.50		
				Strength	0.50		
Ro:							
Roellen	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Wetness	1.00		
		Stickiness/slope	0.50	Strength	0.50		
				Stickiness	0.50		
RsA:							
Routon	80	Moderate		Poorly suited		Severe	
		Strength	0.50	Wetness	1.00	Strength	1.00
				Strength	0.50		
RtA:							
Routon	80	Moderate		Poorly suited		Severe	
		Flooding	0.50	Wetness	1.00	Strength	1.00
		Strength	0.50	Flooding	0.50		
				Strength	0.50		
RuA:							
Routon	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Wetness	1.00		
				Strength	0.50		
Sc:							
Sharkey	90	Severe		Poorly suited		Severe	
		Wetness	1.00	Ponding	1.00	Wetness	1.00
		Stickiness/slope	0.50	Wetness	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Stickiness	0.50		
Sh:							
Sharkey	85	Moderate		Poorly suited		Severe	
		Stickiness/slope	0.50	Wetness	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Stickiness	0.50		

Table 9a.--Forestland Management--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
Sk:							
Sharkey	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Stickiness/slope	0.50	Wetness	1.00		
		Strength	0.50	Strength	0.50		
				Stickiness	0.50		
Tc:							
Tunica	90	Moderate		Poorly suited		Severe	
		Strength	0.50	Wetness	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
				Stickiness	0.50		
Tu:							
Tunica	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Wetness	1.00		
		Stickiness/slope	0.50	Strength	0.50		
				Stickiness	0.50		
UdC:							
Udorthents	55	Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated	
UrB:							
Urban land	65	Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
Wa:							
Ware	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Wm:							
Ware	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Wr:							
Ware	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Ws:							
Ware	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		

Table 9b.--Forestland 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	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
Ac:							
Adler	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Ad:							
Adler	95	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Ba:							
Bardwell	80	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Bd:							
Bardwell	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Be, Bf:							
Bardwell	80	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Bn:							
Bondurant	80	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Stickiness	0.50
						Wetness	0.50
Bo:							
Bondurant	80	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
						Stickiness	0.50
						Wetness	0.50
Br:							
Bowdre	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Wetness	0.50
						Stickiness	0.50
Bw:							
Bowdre	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
						Wetness	0.50
						Stickiness	0.50
CaA:							
Calloway	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Wetness	0.50
CaB2:							
Calloway	90	Slight		Moderate		Moderately suited	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
						Wetness	0.50

Table 9b.--Forestland Management--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
CeA:							
Center	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.05	Slope/erodibility	0.22	Strength	0.50
CfA:							
Center	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.05	Slope/erodibility	0.22	Flooding	0.50
						Strength	0.50
Cg:							
Collins	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Ch:							
Commerce	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Ck:							
Commerce	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Cm:							
Commerce	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
Cn:							
Commerce	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Co:							
Commerce	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
Cp:							
Convent	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Cr:							
Convent	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Cs:							
Convent	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
						Wetness	0.50
Ct:							
Convent	55	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Mhoon	40	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	0.50
						Flooding	0.50
						Strength	0.50

Table 9b.--Forestland Management--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
Cu:							
Convent	55	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
						Wetness	0.50
Mhoon	40	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Wetness	0.50
						Strength	0.50
Cv:							
Crevasse	90	Slight		Slight		Well suited	
		Slope/erodibility	0.02	Slope/erodibility	0.06		
Cw:							
Crevasse	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.06	Flooding	0.50
Cx:							
Crevasse	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
De:							
Dekoven	80	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
						Wetness	0.50
Dk:							
Dekoven	85	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
						Wetness	0.50
Do:							
Dekoven	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Dv:							
Dekoven	85	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
Fa:							
Falaya	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
						Wetness	0.50
Fc:							
Falaya	50	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
						Wetness	0.50
Waverly	45	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	1.00
						Flooding	0.50
						Strength	0.50

Table 9b.--Forestland Management--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
FnA, FnB, FnB2:							
Feliciana-----------	95	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
FnC2:							
Feliciana-----------	95	Slight		Severe		Moderately suited	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Slope	0.50
						Strength	0.50
FnC3:							
Feliciana-----------	90	Slight		Severe		Moderately suited	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Slope	0.50
						Strength	0.50
FnD3:							
Feliciana-----------	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.39	Slope/erodibility	1.00	Slope	1.00
						Strength	0.50
FnE3:							
Feliciana-----------	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.61	Slope/erodibility	1.00	Slope	1.00
						Strength	0.50
						Landslides	0.50
GrA:							
Grenada-------------	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Wetness	0.50
GrB:							
Grenada-------------	90	Slight		Moderate		Moderately suited	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
						Wetness	0.50
GrB2:							
Grenada-------------	85	Slight		Moderate		Moderately suited	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
						Wetness	0.50
GrB3:							
Grenada-------------	90	Slight		Moderate		Moderately suited	
		Slope/erodibility	0.12	Slope/erodibility	0.56	Strength	0.50
						Wetness	0.50
GrC2, GrC3:							
Grenada-------------	85	Slight		Severe		Moderately suited	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Slope	0.50
						Strength	0.50
						Wetness	0.50
GuF:							
Gullied land--------	60	Not rated		Not rated		Not rated	
Memphis-------------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.98	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50
Ke:							
Keyespoint----------	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Wetness	0.50

Table 9b.--Forestland Management--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
Kf:							
Keyespoint	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
						Wetness	0.50
KrA:							
Kurk	80	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Wetness	0.50
KsA:							
Kurk	80	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
						Wetness	0.50
KuA:							
Kurk	80	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
						Wetness	0.50
LEVEE:							
Levee	100	Not rated		Not rated		Not rated	
LoA:							
Loring	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
LoB, LoB2:							
Loring	90	Slight		Moderate		Moderately suited	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
LoB3:							
Loring	85	Slight		Moderate		Moderately suited	
		Slope/erodibility	0.12	Slope/erodibility	0.56	Strength	0.50
						Wetness	0.50
LoC2:							
Loring	85	Slight		Severe		Moderately suited	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Slope	0.50
						Strength	0.50
LoC3:							
Loring	90	Slight		Severe		Moderately suited	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Slope	0.50
						Strength	0.50
						Wetness	0.50
LoD3:							
Loring	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.39	Slope/erodibility	1.00	Slope	1.00
						Strength	0.50
						Wetness	0.50
M-W:							
Miscellaneous Water	100	Not rated		Not rated		Not rated	
MeA:							
Memphis	95	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50

Table 9b.--Forestland Management--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
MeB, MeB2:							
Memphis	95	Slight		Moderate		Moderately suited	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
MeC2:							
Memphis	95	Slight		Severe		Moderately suited	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Slope	0.50
						Strength	0.50
MeC3:							
Memphis	90	Slight		Severe		Moderately suited	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Slope	0.50
						Strength	0.50
MeD3:							
Memphis	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.39	Slope/erodibility	1.00	Slope	1.00
						Strength	0.50
MeE3:							
Memphis	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.61	Slope/erodibility	1.00	Slope	1.00
						Strength	0.50
						Landslides	0.50
MmF:							
Memphis	55	Severe		Severe		Poorly suited	
		Slope/erodibility	0.85	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50
Natchez	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.85	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50
Mo:							
Mhoon	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.01	Slope/erodibility	0.06	Ponding	1.00
						Wetness	1.00
						Strength	0.50
Op:							
Openlake	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Stickiness	0.50
						Wetness	0.50
Os:							
Openlake	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
						Stickiness	0.50
						Wetness	0.50
Ph:							
Phillippy	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Pp:							
Phillippy	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50

Table 9b.--Forestland Management--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
PtD:							
Pits	75	Not rated		Not rated		Not rated	
Udorthents	15	Not rated		Not rated		Not rated	
Ra:							
Riverwash	100	Not rated		Not rated		Not rated	
Rb:							
Robinsonville	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Rc:							
Robinsonville	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Rf:							
Robinsonville	90	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
RmD:							
Robinsonville	90	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.24	Slope/erodibility	1.00	Slope	0.50
						Flooding	0.50
						Strength	0.50
Ro:							
Roellen	85	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Wetness	1.00
						Strength	0.50
						Stickiness	0.50
RsA:							
Routon	80	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	1.00
						Strength	0.50
RtA:							
Routon	80	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	1.00
						Flooding	0.50
						Strength	0.50
RuA:							
Routon	80	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Wetness	1.00
						Strength	0.50
Sc:							
Sharkey	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
						Wetness	1.00
						Strength	0.50
						Stickiness	0.50

Table 9b.--Forestland Management--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
Sh:							
Sharkey	85	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	1.00
						Strength	0.50
						Stickiness	0.50
Sk:							
Sharkey	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Wetness	1.00
						Strength	0.50
						Stickiness	0.50
Tc:							
Tunica	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Wetness	1.00
						Strength	0.50
						Stickiness	0.50
Tu:							
Tunica	90	Slight		Slight		Poorly suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Wetness	1.00
						Strength	0.50
						Stickiness	0.50
UdC:							
Udorthents	55	Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated	
UrB:							
Urban land	65	Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
Wa:							
Ware	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Wm:							
Ware	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50
Wr:							
Ware	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
Ws:							
Ware	85	Slight		Slight		Moderately suited	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	0.50
						Strength	0.50

Table 9c.--Forestland 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	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
Ac:							
Adler	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Ad:							
Adler	95	Well suited		Well suited		Moderately suited	
						Strength	0.50
Ba:							
Bardwell	80	Well suited		Well suited		Moderately suited	
						Strength	0.50
Bd:							
Bardwell	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Be, Bf:							
Bardwell	80	Well suited		Well suited		Moderately suited	
						Strength	0.50
Bn, Bo:							
Bondurant	80	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
Br, Bw:							
Bowdre	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
CaA, CaB2:							
Calloway	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
CeA, CfA:							
Center	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
Cg:							
Collins	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Ch:							
Commerce	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
Ck:							
Commerce	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Cm:							
Commerce	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
Cn:							
Commerce	85	Well suited		Well suited		Moderately suited	
						Strength	0.50

Table 9c.--Forestland Management--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
Co:							
Commerce------------	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
Cp, Cr, Cs:							
Convent-------------	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
Ct, Cu:							
Convent-------------	55	Well suited		Well suited		Moderately suited	
						Strength	0.50
Mhoon---------------	40	Well suited		Well suited		Moderately suited	
						Strength	0.50
Cv, Cw, Cx:							
Crevasse------------	90	Moderately suited		Moderately suited		Well suited	
		Sandiness	0.50	Sandiness	0.50		
De:							
Dekoven-------------	80	Well suited		Well suited		Moderately suited	
						Strength	0.50
Dk, Do, Dv:							
Dekoven-------------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Fa:							
Falaya--------------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Fc:							
Falaya--------------	50	Well suited		Well suited		Moderately suited	
						Strength	0.50
Waverly-------------	45	Well suited		Well suited		Moderately suited	
						Strength	0.50
FnA, FnB, FnB2:							
Feliciana-----------	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Strength	0.50
FnC2:							
Feliciana-----------	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Slope	0.50	Strength	0.50
				Stickiness	0.50		
FnC3:							
Feliciana-----------	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Slope	0.50	Strength	0.50
				Stickiness	0.50		
FnD3:							
Feliciana-----------	90	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Strength	0.50
				Stickiness	0.50		
FnE3:							
Feliciana-----------	90	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Strength	0.50
				Stickiness	0.50	Slope	0.50

Table 9c.--Forestland Management--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
GrA:							
Grenada	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
GrB:							
Grenada	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
GrB2:							
Grenada	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
GrB3:							
Grenada	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
GrC2, GrC3:							
Grenada	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
GuF:							
Gullied land	60	Not rated		Not rated		Not rated	
Memphis	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness	0.50	Stickiness	0.50	Strength	0.50
Ke:							
Keyespoint	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
Kf:							
Keyespoint	90	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
KrA, KsA, KuA:							
Kurk	80	Well suited		Well suited		Moderately suited	
						Strength	0.50
LEVEE:							
Levee	100	Not rated		Not rated		Not rated	
LoA, LoB, LoB2:							
Loring	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
LoB3, LoC2:							
Loring	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
LoC3:							
Loring	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
LoD3:							
Loring	90	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Strength	0.50
M-W:							
Miscellaneous Water	100	Not rated		Not rated		Not rated	

Table 9c.--Forestland Management--Continued

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
MeA, MeB, MeB2:							
Memphis	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Strength	0.50
MeC2:							
Memphis	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Slope	0.50	Strength	0.50
				Stickiness	0.50		
MeC3:							
Memphis	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Slope	0.50	Strength	0.50
				Stickiness	0.50		
MeD3:							
Memphis	90	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Strength	0.50
				Stickiness	0.50		
MeE3:							
Memphis	90	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Strength	0.50
				Stickiness	0.50	Slope	0.50
MmF:							
Memphis	55	Moderately suited		Unsuited		Moderately suited	
		Slope	0.50	Slope	1.00	Slope	0.50
		Stickiness	0.50	Stickiness	0.50	Strength	0.50
Natchez	35	Moderately suited		Unsuited		Moderately suited	
		Slope	0.50	Slope	1.00	Slope	0.50
						Strength	0.50
Mo:							
Mhoon	90	Unsuited		Unsuited		Poorly suited	
		Wetness	1.00	Wetness	1.00	Wetness	1.00
						Strength	0.50
Op, Os:							
Openlake	90	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
Ph, Pp:							
Phillippy	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
PtD:							
Pits	75	Not rated		Not rated		Not rated	
Udorthents	15	Not rated		Not rated		Not rated	
Ra:							
Riverwash	100	Not rated		Not rated		Not rated	
Rb, Rc:							
Robinsonville	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Rf:							
Robinsonville	90	Well suited		Well suited		Moderately suited	
						Strength	0.50

Table 9c.--Forestland Management--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
RmD:							
Robinsonville	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
Ro:							
Roellen	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Strength	0.50
						Stickiness	0.50
RsA, RtA, RuA:							
Routon	80	Well suited		Well suited		Moderately suited	
						Strength	0.50
Sc:							
Sharkey	90	Unsuited		Unsuited		Poorly suited	
		Wetness	1.00	Wetness	1.00	Wetness	1.00
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
Sh:							
Sharkey	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
Sk:							
Sharkey	90	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
Tc, Tu:							
Tunica	90	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
UdC:							
Udorthents	55	Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated	
UrB:							
Urban land	65	Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
Wa, Wm, Wr, Ws:							
Ware	85	Well suited		Well suited		Moderately suited	
						Strength	0.50

Table 9d.--Forestland 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	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
Ac:					
Adler	85	Well suited		Well suited	
Ad:					
Adler	95	Well suited		Well suited	
Ba:					
Bardwell	80	Well suited		Well suited	
Bd:					
Bardwell	85	Well suited		Well suited	
Be, Bf:					
Bardwell	80	Well suited		Well suited	
Bn, Bo:					
Bondurant	80	Poorly suited		Well suited	
		Stickiness	0.50		
Br, Bw:					
Bowdre	85	Poorly suited		Well suited	
		Stickiness	0.50		
CaA, CaB2:					
Calloway	90	Well suited		Well suited	
CeA, CfA:					
Center	90	Well suited		Well suited	
Cg:					
Collins	85	Well suited		Well suited	
Ch:					
Commerce	90	Well suited		Well suited	
Ck:					
Commerce	85	Well suited		Well suited	
Cm:					
Commerce	90	Well suited		Well suited	
Cn:					
Commerce	85	Well suited		Well suited	
Co:					
Commerce	90	Well suited		Well suited	
Cp, Cr, Cs:					
Convent	90	Well suited		Well suited	
Ct, Cu:					
Convent	55	Well suited		Well suited	
Mhoon	40	Well suited		Well suited	

Table 9d.--Forestland Management--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
Cv, Cw, Cx:					
Crevasse	90	Well suited		Well suited	
De:					
Dekoven	80	Well suited		Well suited	
Dk, Do, Dv:					
Dekoven	85	Well suited		Well suited	
Fa:					
Falaya	85	Well suited		Well suited	
Fc:					
Falaya	50	Well suited		Well suited	
Waverly	45	Well suited		Well suited	
FnA, FnB, FnB2, FnC2:					
Feliciana	95	Well suited		Well suited	
FnC3:					
Feliciana	90	Well suited		Well suited	
FnD3, FnE3:					
Feliciana	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
GrA:					
Grenada	85	Well suited		Well suited	
GrB:					
Grenada	90	Well suited		Well suited	
GrB2:					
Grenada	85	Well suited		Well suited	
GrB3:					
Grenada	90	Well suited		Well suited	
GrC2, GrC3:					
Grenada	85	Well suited		Well suited	
GuF:					
Gullied land	60	Not rated		Not rated	
Memphis	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Ke:					
Keyespoint	85	Poorly suited		Well suited	
		Stickiness	0.50		
Kf:					
Keyespoint	90	Poorly suited		Well suited	
		Stickiness	0.50		
KrA, KsA, KuA:					
Kurk	80	Well suited		Well suited	
LEVEE:					
Levee	100	Not rated		Not rated	

Table 9d.--Forestland Management--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
LoA, LoB, LoB2:					
Loring	90	Well suited		Well suited	
LoB3, LoC2:					
Loring	85	Well suited		Well suited	
LoC3:					
Loring	90	Well suited		Well suited	
LoD3:					
Loring	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
M-W:					
Miscellaneous Water	100	Not rated		Not rated	
MeA, MeB, MeB2, MeC2:					
Memphis	95	Well suited		Well suited	
MeC3:					
Memphis	90	Well suited		Well suited	
MeD3, MeE3:					
Memphis	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
MmF:					
Memphis	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Natchez	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Mo:					
Mhoon	90	Unsuited		Unsuited	
		Wetness	1.00	Wetness	1.00
Op, Os:					
Openlake	90	Poorly suited		Well suited	
		Stickiness	0.50		
Ph, Pp:					
Phillippy	85	Poorly suited		Well suited	
		Stickiness	0.50		
PtD:					
Pits	75	Not rated		Not rated	
Udorthents	15	Not rated		Not rated	
Ra:					
Riverwash	100	Not rated		Not rated	
Rb, Rc:					
Robinsonville	85	Well suited		Well suited	
Rf, RmD:					
Robinsonville	90	Well suited		Well suited	

Table 9d.--Forestland Management--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
Ro:					
Roellen	85	Poorly suited		Well suited	
		Stickiness	0.50		
RsA, RtA, RuA:					
Routon	80	Well suited		Well suited	
Sc:					
Sharkey	90	Unsuited		Unsuited	
		Wetness	1.00	Wetness	1.00
		Stickiness	0.50		
Sh:					
Sharkey	85	Poorly suited		Well suited	
		Stickiness	0.50		
Sk:					
Sharkey	90	Poorly suited		Well suited	
		Stickiness	0.50		
Tc, Tu:					
Tunica	90	Poorly suited		Well suited	
		Stickiness	0.50		
UdC:					
Udorthents	55	Not rated		Not rated	
Urban land	35	Not rated		Not rated	
UrB:					
Urban land	65	Not rated		Not rated	
Udorthents	20	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	
Wa, Wm, Wr, Ws:					
Ware	85	Well suited		Well suited	

Table 10a.--Recreation

(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	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
Ac:							
Adler	85	Not limited		Not limited		Not limited	
Ad:							
Adler	95	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Ba:							
Bardwell	80	Not limited		Not limited		Not limited	
Bd:							
Bardwell	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Be, Bf:							
Bardwell	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
Bn:							
Bondurant	80	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
Bo:							
Bondurant	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Restricted permeability	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	0.56	Restricted permeability	1.00
		Depth to saturated zone	0.88	Flooding	0.40	Depth to saturated zone	0.88
Br:							
Bowdre	85	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.98	Restricted permeability	0.94	Depth to saturated zone	0.98
		Restricted permeability	0.94	Depth to saturated zone	0.75	Restricted permeability	0.94
Bw:							
Bowdre	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Too clayey	1.00	Flooding	1.00
		Too clayey	1.00	Restricted permeability	0.94	Too clayey	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Restricted permeability	0.94	Flooding	0.40	Restricted permeability	0.94
CaA:							
Calloway	90	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
		Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96

Table 10a.--Recreation--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
CaB2:							
Calloway	90	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
		Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96
						Slope	0.12
CeA:							
Center	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.39	Restricted permeability	0.21	Depth to saturated zone	0.39
		Restricted permeability	0.21	Depth to saturated zone	0.19	Restricted permeability	0.21
CfA:							
Center	90	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Restricted permeability	0.21	Flooding	0.60
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
		Restricted permeability	0.21			Restricted permeability	0.21
Cg:							
Collins	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Ch:							
Commerce	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.39	Restricted permeability	0.21	Depth to saturated zone	0.39
		Restricted permeability	0.21	Depth to saturated zone	0.19	Restricted permeability	0.21
Ck:							
Commerce	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Restricted permeability	0.21	Flooding	0.60
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
		Restricted permeability	0.21			Restricted permeability	0.21
Cm:							
Commerce	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.39	Restricted permeability	0.21	Depth to saturated zone	0.39
		Restricted permeability	0.21	Depth to saturated zone	0.19	Restricted permeability	0.21
Cn:							
Commerce	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Restricted permeability	0.21	Flooding	0.60
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
		Restricted permeability	0.21			Restricted permeability	0.21

Table 10a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
Co:							
Commerce	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.39	Restricted permeability	0.21	Depth to saturated zone	0.39
		Restricted permeability	0.21	Depth to saturated zone	0.19	Restricted permeability	0.21
Cp:							
Convent	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.95	Depth to saturated zone	0.68	Depth to saturated zone	0.95
Cr:							
Convent	90	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.68	Depth to saturated zone	0.95
		Depth to saturated zone	0.95			Flooding	0.60
Cs:							
Convent	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.68	Flooding	1.00
		Depth to saturated zone	0.95	Flooding	0.40	Depth to saturated zone	0.95
Ct:							
Convent	55	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.68	Depth to saturated zone	0.95
		Depth to saturated zone	0.95			Flooding	0.60
Mhoon	40	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Restricted permeability	0.96	Depth to saturated zone	0.98
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Restricted permeability	0.96
		Restricted permeability	0.96			Flooding	0.60
Cu:							
Convent	55	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.68	Flooding	1.00
		Depth to saturated zone	0.95	Flooding	0.40	Depth to saturated zone	0.95
Mhoon	40	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Restricted permeability	0.96	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Restricted permeability	0.96	Flooding	0.40	Restricted permeability	0.96
Cv:							
Crevasse	90	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.92	Too sandy	0.92
		Too sandy	0.92			Flooding	0.60
Cw:							
Crevasse	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Too sandy	0.92	Flooding	1.00
		Too sandy	0.92	Flooding	0.40	Too sandy	0.92

Table 10a.--Recreation--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
Cx:							
Crevasse	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
De:							
Dekoven	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60
Dk:							
Dekoven	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.75	Flooding	1.00
		Depth to saturated zone	0.98	Flooding	0.40	Depth to saturated zone	0.98
Do:							
Dekoven	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.19	Flooding	0.60
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
Dv:							
Dekoven	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
Fa:							
Falaya	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60
Fc:							
Falaya	50	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60
Waverly	45	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	0.60
FnA:							
Feliciana	95	Not limited		Not limited		Not limited	
FnB, FnB2:							
Feliciana	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
FnC2, FnC3:							
Feliciana	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
FnD3, FnE3:							
Feliciana	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 10a.--Recreation--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
GrA:							
Grenada	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
GrB:							
Grenada	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
						Depth to saturated zone	0.39
GrB2:							
Grenada	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
						Depth to saturated zone	0.39
GrB3:							
Grenada	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
						Slope	0.88
GrC2:							
Grenada	85	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Restricted permeability	0.96
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
GrC3:							
Grenada	85	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Restricted permeability	0.96
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.88
GuF:							
Gullied land	60	Not Rated		Not Rated		Not Rated	
Memphis	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ke:							
Keyespoint	85	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98

Table 10a.--Recreation--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
Kf:							
Keyespoint	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Restricted permeability	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	0.75	Restricted permeability	1.00
		Depth to saturated zone	0.98	Flooding	0.40	Depth to saturated zone	0.98
KrA:							
Kurk	80	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
KsA:							
Kurk	80	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	1.00
		Flooding	1.00	Restricted permeability	0.21	Flooding	0.60
		Restricted permeability	0.21			Restricted permeability	0.21
KuA:							
Kurk	80	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
LEVEE:							
Levee	100	Not Rated		Not Rated		Not Rated	
LoA:							
Loring	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.81	Depth to saturated zone	0.48	Depth to saturated zone	0.81
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
LoB, LoB2:							
Loring	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.81	Depth to saturated zone	0.48	Depth to saturated zone	0.81
		Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
						Restricted permeability	0.21
LoB3:							
Loring	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
						Slope	0.88

Table 10a.--Recreation--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
LoC2:							
Loring	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.81	Depth to saturated zone	0.48	Slope	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Depth to saturated zone	0.81
		Slope	0.04	Slope	0.04	Restricted permeability	0.21
LoC3:							
Loring	90	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Restricted permeability	0.96
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.88
LoD3:							
Loring	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
M-W:							
Miscellaneous water	100	Not Rated		Not Rated		Not Rated	
MeA:							
Memphis	95	Not limited		Not limited		Not limited	
MeB, MeB2:							
Memphis	95	Not limited		Not limited		Somewhat limited	
						Slope	0.50
MeC2, MeC3:							
Memphis	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
MeD3, MeE3:							
Memphis	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
MmF:							
Memphis	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Natchez	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Mo:							
Mhoon	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96

Table 10a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
Op:							
Openlake------------	90	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
Os:							
Openlake------------	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Restricted permeability	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	0.56	Restricted permeability	1.00
		Depth to saturated zone	0.88	Flooding	0.40	Depth to saturated zone	0.88
Ph:							
Phillippy-----------	85	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
Pp:							
Phillippy-----------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Restricted permeability	1.00	Flooding	1.00
		Restricted permeability	1.00	Flooding	0.40	Restricted permeability	1.00
PtD:							
Pits----------------	75	Not Rated		Not Rated		Not Rated	
Udorthents----------	15	Not Rated		Not Rated		Not Rated	
Ra:							
Riverwash-----------	100	Not Rated		Not Rated		Not Rated	
Rb:							
Robinsonville-------	85	Not limited		Not limited		Not limited	
Rc:							
Robinsonville-------	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Rf:							
Robinsonville-------	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
RmD:							
Robinsonville-------	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Slope	0.63	Slope	1.00
		Slope	0.63			Flooding	0.60
Ro:							
Roellen-------------	85	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	Too clayey	1.00	Too clayey	1.00
		Too clayey	1.00	Restricted permeability	0.94	Restricted permeability	0.94
		Restricted permeability	0.94			Flooding	0.60

Table 10a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
RsA:							
Routon	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
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
RtA:							
Routon	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	Restricted permeability	0.96	Restricted permeability	0.96
		Restricted permeability	0.96			Flooding	0.60
RuA:							
Routon	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	Restricted permeability	0.96	Flooding	1.00
		Restricted permeability	0.96	Flooding	0.40	Restricted permeability	0.96
Sc:							
Sharkey	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
Sh:							
Sharkey	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
Sk:							
Sharkey	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Restricted permeability	1.00	Flooding	1.00
		Restricted permeability	1.00	Too clayey	1.00	Restricted permeability	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
Tc:							
Tunica	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00

Table 10a.--Recreation--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
Tu:							
Tunica	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Restricted permeability	1.00	Flooding	1.00
		Restricted permeability	1.00	Too clayey	1.00	Restricted permeability	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
UdC:							
Udorthents	55	Not Rated		Not Rated		Not Rated	
Urban land	35	Not Rated		Not Rated		Not Rated	
UrB:							
Urban land	65	Not Rated		Not Rated		Not Rated	
Udorthents	20	Not Rated		Not Rated		Not Rated	
W:							
Water	100	Not Rated		Not Rated		Not Rated	
Wa:							
Ware	85	Not limited		Not limited		Not limited	
Wm:							
Ware	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Wr:							
Ware	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Ws:							
Ware	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 10b.--Recreational Development

(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	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
Ac:							
Adler	85	Not limited		Not limited		Not limited	
Ad:							
Adler	95	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Ba:							
Bardwell	80	Not limited		Not limited		Not limited	
Bd:							
Bardwell	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Be, Bf:							
Bardwell	80	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
Bn:							
Bondurant	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Bo:							
Bondurant	80	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Br:							
Bowdre	85	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
Bw:							
Bowdre	85	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Flooding	1.00
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Too clayey	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
CaA, CaB2:							
Calloway	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
						Depth to cemented pan	0.46
CeA:							
Center	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19

Table 10b.--Recreational Development--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
CfA:							
Center	90	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.19
Cg:							
Collins	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Ch:							
Commerce	90	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
Ck:							
Commerce	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.19
Cm:							
Commerce	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Depth to saturated zone	0.19
Cn:							
Commerce	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.19
Co:							
Commerce	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Depth to saturated zone	0.19
Cp:							
Convent	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Cr:							
Convent	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Flooding	0.60
						Depth to saturated zone	0.56
Cs:							
Convent	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Ct:							
Convent	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Flooding	0.60
						Depth to saturated zone	0.56

Table 10b.--Recreational Development--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
Ct:							
Mhoon---------------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60
Cu:							
Convent-------------	55	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Mhoon---------------	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
Cv:							
Crevasse------------	90	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.92	Too sandy	0.92	Droughty	1.00
						Flooding	0.60
Cw:							
Crevasse------------	90	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.92	Too sandy	0.92	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Droughty	1.00
Cx:							
Crevasse------------	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Droughty	0.86
De:							
Dekoven-------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60
Dk:							
Dekoven-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
Do:							
Dekoven-------------	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.19
Dv:							
Dekoven-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Depth to saturated zone	0.19
Fa:							
Falaya--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60

Table 10b.--Recreational Development--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
Fc:							
Falaya-------------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60
Waverly------------	45	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	0.60
FnA, FnB, FnB2:							
Feliciana----------	95	Not limited		Not limited		Not limited	
FnC2:							
Feliciana----------	95	Not limited		Not limited		Somewhat limited	
						Slope	0.04
FnC3:							
Feliciana----------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.04
FnD3:							
Feliciana----------	90	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
FnE3:							
Feliciana----------	90	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
GrA:							
Grenada------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
						Depth to cemented pan	0.46
GrB:							
Grenada------------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
						Depth to cemented pan	0.46
GrB2:							
Grenada------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to cemented pan	0.79
						Depth to saturated zone	0.56
GrB3:							
Grenada------------	90	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to cemented pan	1.00
						Depth to saturated zone	0.56

Table 10b.--Recreational Development--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
GrC2:							
Grenada	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
						Depth to cemented pan	0.46
						Slope	0.04
GrC3:							
Grenada	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to cemented pan	1.00
						Depth to saturated zone	0.56
						Slope	0.04
GuF:							
Gullied land	60	Not rated		Not rated		Not rated	
Memphis	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ke:							
Keyespoint	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Kf:							
Keyespoint	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
KrA:							
Kurk	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
KsA:							
Kurk	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
						Flooding	0.60
KuA:							
Kurk	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.88
LEVEE:							
Levee	100	Not rated		Not rated		Not rated	
LoA, LoB:							
Loring	90	Not limited		Not limited		Somewhat limited	
						Depth to cemented pan	0.46

Table 10b.--Recreational Development--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
LoB2:							
Loring	90	Not limited		Not limited		Somewhat limited	
						Depth to cemented pan	0.84
LoB3:							
Loring	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to cemented pan	0.99
						Depth to saturated zone	0.56
LoC2:							
Loring	85	Not limited		Not limited		Very limited	
						Depth to cemented pan	0.99
						Slope	0.04
LoC3:							
Loring	90	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to cemented pan	0.99
						Depth to saturated zone	0.56
						Slope	0.04
LoD3:							
Loring	90	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Slope	1.00
		Slope	0.02			Depth to cemented pan	0.99
						Depth to saturated zone	0.56
M-W:							
Miscellaneous Water	100	Not rated		Not rated		Not rated	
MeA, MeB, MeB2:							
Memphis	95	Not limited		Not limited		Not limited	
MeC2:							
Memphis	95	Not limited		Not limited		Somewhat limited	
						Slope	0.04
MeC3:							
Memphis	90	Not limited		Not limited		Somewhat limited	
						Slope	0.04
MeD3:							
Memphis	90	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
MeE3:							
Memphis	90	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
MmF:							
Memphis	55	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.78	Slope	1.00

Table 10b.--Recreational Development--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
MmF:							
Natchez	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.78	Slope	1.00
Mo:							
Mhoon	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
Op:							
Openlake	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Os:							
Openlake	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
Ph:							
Phillippy	85	Not limited		Not limited		Not limited	
Pp:							
Phillippy	85	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
PtD:							
Pits	75	Not rated		Not rated		Not rated	
Udorthents	15	Not rated		Not rated		Not rated	
Ra:							
Riverwash	100	Not rated		Not rated		Not rated	
Rb:							
Robinsonville	85	Not limited		Not limited		Not limited	
Rc:							
Robinsonville	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Rf:							
Robinsonville	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
RmD:							
Robinsonville	90	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Flooding	0.60
Ro:							
Roellen	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Too clayey	1.00	Too clayey	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Flooding	0.40	Too clayey	1.00

Table 10b.--Recreational Development--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
RsA:							
Routon	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
RtA:							
Routon	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	0.60
RuA:							
Routon	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
Sc:							
Sharkey	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
Sh:							
Sharkey	85	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	Too clayey	1.00
Sk:							
Sharkey	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Too clayey	1.00	Too clayey	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Flooding	0.40	Too clayey	1.00
Tc:							
Tunica	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
Tu:							
Tunica	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Too clayey	1.00	Too clayey	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Flooding	0.40	Too clayey	1.00
UdC:							
Udorthents	55	Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated	
UrB:							
Urban land	65	Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated	

Table 10b.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
W:							
Water	100	Not rated		Not rated		Not rated	
Wa:							
Ware	85	Not limited		Not limited		Not limited	
Wm:							
Ware	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Wr:							
Ware	85	Not limited		Not limited		Not limited	
Ws:							
Ware	85	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00

Table 11.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Ac, Ad:										
Adler	Good	Good	Good	Good	Fair	Poor	Poor	Good	Good	Poor
Ba, Bd:										
Bardwell	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Be, Bf:										
Bardwell	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
Bn:										
Bondurant	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Bo:										
Bondurant	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
Br:										
Bowdre	Fair	Fair	Fair	Good	Good	Poor	Fair	Fair	Good	Fair
Bw:										
Bowdre	Poor	Fair	Fair	Good	Good	Poor	Fair	Fair	Good	Fair
CaA, CaB2:										
Calloway	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
CeA, CfA:										
Center	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Cg:										
Collins	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Ch, Ck:										
Commerce	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Cm:										
Commerce	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
Cn:										
Commerce	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Co:										
Commerce	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
Cp, Cr:										
Convent	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Cs:										
Convent	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
Ct, Cu:										
Convent	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
Mhoon	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Cv, Cw, Cx:										
Crevasse	Poor	Fair	Fair	Poor	Poor	Poor	Very poor	Fair	Poor	Very poor

Table 11.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
De:										
Dekoven	Good	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair
Dk:										
Dekoven	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair
Do:										
Dekoven	Good	Good	Good	Fair	Fair	Fair	Fair	Good	Good	Fair
Dv:										
Dekoven	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair
Fa:										
Falaya	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Fc:										
Falaya	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Waverly	Poor	Fair	Good	Fair	Fair	Good	Fair	Fair	Fair	Fair
FnA, FnB, FnB2, FnC2, FnC3, FnD3, FnE3:										
Feliciana	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
GrA, GrB, GrB2, GrB3, GrC2, GrC3:										
Grenada	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
GuF:										
Gullied land.										
Memphis	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Ke:										
Keyespoint	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Kf:										
Keyespoint	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
KrA, KsA:										
Kurk	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
KuA:										
Kurk	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
LEVEE.										
Levee										
LoA, LoB, LoB2, LoB3:										
Loring	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
LoC2, LoC3:										
Loring	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
LoD3:										
Loring	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 11.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
M-W. Miscellaneous Water										
MeA, MeB, MeB2: Memphis	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
MeC2, MeC3: Memphis	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
MeD3: Memphis	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
MeE3: Memphis	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
MmF: Memphis	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Natchez	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Mo: Mhoon	Very poor	Poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Op: Openlake	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Os: Openlake	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
Ph: Phillippy	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Pp: Phillippy	Fair	Fair	Poor	Good	Good	Poor	Poor	Fair	Fair	Poor
PtD: Pits.										
Udorthents.										
Ra. Riverwash										
Rb, Rc: Robinsonville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Rf: Robinsonville	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
RmD: Robinsonville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 11.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Ro:										
Roellen	Fair	Fair	Fair	Good	Fair	Good	Good	Fair	Good	Good
RsA, RtA, RuA:										
Routon	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
Sc:										
Sharkey	Very poor	Poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Sh:										
Sharkey	Fair	Fair	Fair	Good	Fair	Good	Good	Fair	Good	Good
Sk:										
Sharkey	Poor	Fair	Fair	Good	Fair	Fair	Fair	Poor	Fair	Fair
Tc:										
Tunica	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Tu:										
Tunica	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
UdC:										
Udorthents.										
Urban land.										
UrB:										
Urban land.										
Udorthents.										
W.										
Water										
Wa, Wm, Wr:										
Ware	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Ws:										
Ware	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor

Table 12a.--Building Site Development

(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: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
Ac:							
Adler	85	Not limited		Very limited		Not limited	
				Depth to saturated zone	1.00		
Ad:							
Adler	95	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	1.00		
Ba:							
Bardwell	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.35		
Bd:							
Bardwell	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35		
Be, Bf:							
Bardwell	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35		
Bn:							
Bondurant	80	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.88	Shrink-swell	1.00	Depth to saturated zone	0.88
Bo:							
Bondurant	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.88	Shrink-swell	1.00	Depth to saturated zone	0.88
Br:							
Bowdre	85	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			Depth to saturated zone	0.98
Bw:							
Bowdre	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.98			Depth to saturated zone	0.98

Table 12a.--Building Site Development--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
CaA, CaB2:							
Calloway	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to thick cemented pan	0.46	Depth to thick cemented pan	1.00	Depth to thick cemented pan	0.46
CeA:							
Center	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
CfA:							
Center	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
Cg:							
Collins	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.82		
Ch:							
Commerce	90	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
Ck:							
Commerce	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
Cm:							
Commerce	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
Cn:							
Commerce	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
Co:							
Commerce	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.39			Depth to saturated zone	0.39
Cp:							
Convent	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88

Table 12a.--Building Site Development--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
Cr, Cs:							
Convent	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
Ct, Cu:							
Convent	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
Mhoon	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Cv, Cw, Cx:							
Crevasse	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.24		
De:							
Dekoven	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
Dk:							
Dekoven	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
Do, Dv:							
Dekoven	85	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
Fa:							
Falaya	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
Fc:							
Falaya	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
Waverly	45	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
FnA, FnB, FnB2:							
Feliciana	95	Not limited		Not limited		Not limited	

Table 12a.--Building Site Development--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
FnC2:							
Feliciana-----------	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
FnC3:							
Feliciana-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
FnD3, FnE3:							
Feliciana-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
GrA:							
Grenada-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Depth to thick cemented pan	0.46	Depth to thick cemented pan	1.00	Depth to thick cemented pan	0.46
GrB:							
Grenada-------------	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Depth to thick cemented pan	0.46	Depth to thick cemented pan	1.00	Depth to thick cemented pan	0.46
GrB2:							
Grenada-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Depth to thick cemented pan	0.80	Depth to thick cemented pan	1.00	Depth to thick cemented pan	0.80
GrB3:							
Grenada-------------	90	Very limited		Very limited		Very limited	
		Depth to thick cemented pan	1.00	Depth to saturated zone	1.00	Depth to thick cemented pan	1.00
		Depth to saturated zone	0.88	Depth to thick cemented pan	1.00	Depth to saturated zone	0.88
						Slope	0.12
GrC2:							
Grenada-------------	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Slope	1.00
		Depth to thick cemented pan	0.46	Depth to thick cemented pan	1.00	Depth to saturated zone	0.88
		Slope	0.04	Slope	0.04	Depth to thick cemented pan	0.46
GrC3:							
Grenada-------------	85	Very limited		Very limited		Very limited	
		Depth to thick cemented pan	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.88	Depth to thick cemented pan	1.00	Depth to thick cemented pan	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.88
GuF:							
Gullied land--------	60	Not rated		Not rated		Not rated	
Memphis-------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 12a.--Building Site Development--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
Ke:							
Keyespoint	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.88			Depth to saturated zone	0.88
Kf:							
Keyespoint	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.88			Depth to saturated zone	0.88
KrA:							
Kurk	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
KsA, KuA:							
Kurk	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
LEVEE:							
Levee	100	Not rated		Not rated		Not rated	
LoA, LoB:							
Loring	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to thick cemented pan	0.46	Depth to thick cemented pan	1.00	Depth to thick cemented pan	0.46
				Depth to saturated zone	1.00		
LoB2:							
Loring	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to thick cemented pan	0.84	Depth to thick cemented pan	1.00	Depth to thick cemented pan	0.84
				Depth to saturated zone	1.00		
LoB3:							
Loring	85	Somewhat limited		Very limited		Very limited	
		Depth to thick cemented pan	0.99	Depth to saturated zone	1.00	Depth to thick cemented pan	0.99
		Depth to saturated zone	0.88	Depth to thick cemented pan	1.00	Depth to saturated zone	0.88
						Slope	0.12
LoC2:							
Loring	85	Somewhat limited		Very limited		Very limited	
		Depth to thick cemented pan	0.99	Depth to thick cemented pan	1.00	Slope	1.00
		Slope	0.04	Depth to saturated zone	1.00	Depth to thick cemented pan	0.99
				Slope	0.04		

Table 12a.--Building Site Development--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
LoC3:							
Loring	90	Somewhat limited		Very limited		Very limited	
		Depth to thick cemented pan	0.99	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.88	Depth to thick cemented pan	1.00	Depth to thick cemented pan	0.99
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.88
LoD3:							
Loring	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.88	Slope	1.00	Depth to saturated zone	0.88
				Depth to thin cemented pan	0.99		
M-W:							
Miscellaneous Water	100	Not rated		Not rated		Not rated	
MeA, MeB, MeB2:							
Memphis	95	Not limited		Not limited		Not limited	
MeC2:							
Memphis	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
MeC3:							
Memphis	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
MeD3, MeE3:							
Memphis	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
MmF:							
Memphis	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Natchez	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Mo:							
Mhoon	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Op:							
Openlake	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	0.88	Shrink-swell	1.00	Depth to saturated zone	0.88
Os:							
Openlake	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.88	Shrink-swell	1.00	Depth to saturated zone	0.88

Table 12a.--Building Site Development--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
Ph:							
Phillippy	85	Not limited		Very limited		Not limited	
				Depth to saturated zone	1.00		
Pp:							
Phillippy	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	1.00		
PtD:							
Pits	75	Not rated		Not rated		Not rated	
Udorthents	15	Not rated		Not rated		Not rated	
Ra:							
Riverwash	100	Not rated		Not rated		Not rated	
Rb:							
Robinsonville	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.15		
Rc:							
Robinsonville	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.15		
Rf:							
Robinsonville	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.15		
RmD:							
Robinsonville	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Flooding	1.00
				Depth to saturated zone	0.15		
Ro:							
Roellen	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
RsA:							
Routon	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
RtA, RuA:							
Routon	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

Table 12a.--Building Site Development--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
Sc:							
Sharkey	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Sh:							
Sharkey	85	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	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Sk:							
Sharkey	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Tc:							
Tunica	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00			Shrink-swell	1.00
Tu:							
Tunica	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00			Shrink-swell	1.00
UdC:							
Udorthents	55	Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated	
UrB:							
Urban land	65	Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
Wa:							
Ware	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.61		
Wm:							
Ware	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.61		
Wr:							
Ware	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.61		

Table 12a.--Building Site Development--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
Ws:							
Ware	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.61		

Table 12b.--Building Site Development

(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: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
Ac:							
Adler	85	Not limited		Very limited		Not limited	
				Depth to saturated zone	1.00		
				Cutbanks cave	0.50		
Ad:							
Adler	95	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
				Flooding	0.60		
				Cutbanks cave	0.50		
Ba:							
Bardwell	80	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
Bd:							
Bardwell	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	0.78	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
Be:							
Bardwell	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.80	Flooding	1.00
		Low strength	0.78	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
Bf:							
Bardwell	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.80	Flooding	1.00
		Low strength	1.00	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
Bn:							
Bondurant	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Shrink-swell	1.00	Too clayey	0.32		
		Depth to saturated zone	0.56	Cutbanks cave	0.10		
Bo:							
Bondurant	80	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	0.56
		Shrink-swell	1.00	Too clayey	0.32		
		Depth to saturated zone	0.56	Cutbanks cave	0.10		

Table 12b.--Building Site Development--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
Br:							
Bowdre	85	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Shrink-swell	1.00	Cutbanks cave	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Too clayey	0.28		
Bw:							
Bowdre	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Low strength	1.00	Cutbanks cave	1.00	Too clayey	1.00
		Shrink-swell	1.00	Flooding	0.80	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Too clayey	0.28		
CaA:							
Calloway	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to saturated zone	0.94
		Depth to saturated zone	0.94	Depth to saturated zone	1.00	Depth to cemented pan	0.46
		Depth to thick cemented pan	0.46	Cutbanks cave	0.10		
CaB2:							
Calloway	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to saturated zone	0.94
		Depth to saturated zone	0.94	Depth to saturated zone	1.00	Depth to cemented pan	0.84
		Depth to thick cemented pan	0.84	Cutbanks cave	0.10		
CeA:							
Center	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
CfA:							
Center	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Low strength	1.00	Flooding	0.60	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
Cg:							
Collins	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.82	Flooding	0.60
				Flooding	0.60		
				Cutbanks cave	0.50		
Ch:							
Commerce	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.19				

Table 12b.--Building Site Development--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
Ck:							
Commerce	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Low strength	1.00	Flooding	0.60	Depth to saturated zone	0.19
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.19				
Cm:							
Commerce	90	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	0.19
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.19				
Cn:							
Commerce	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Low strength	1.00	Flooding	0.60	Depth to saturated zone	0.19
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.19				
Co:							
Commerce	90	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	0.19
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.19				
Cp:							
Convent	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.68	Depth to saturated zone	1.00	Depth to saturated zone	0.68
				Cutbanks cave	0.10		
Cr:							
Convent	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	0.68	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
Cs:							
Convent	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	0.68	Flooding	0.80	Depth to saturated zone	0.68
				Cutbanks cave	0.10		
Ct:							
Convent	55	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	0.68	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		

Table 12b.--Building Site Development--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
Ct:							
Mhoon	40	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Flooding	0.60	Flooding	0.60
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Cu:							
Convent	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	0.68	Flooding	0.80	Depth to saturated zone	0.68
				Cutbanks cave	0.10		
Mhoon	40	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	0.75
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Cv:							
Crevasse	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Droughty	1.00
				Flooding	0.60	Flooding	0.60
				Depth to saturated zone	0.24		
Cw:							
Crevasse	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	1.00
				Depth to saturated zone	0.24		
Cx:							
Crevasse	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	0.86
				Depth to saturated zone	0.24		
De:							
Dekoven	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Flooding	0.60	Flooding	0.60
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
Dk:							
Dekoven	85	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	0.75
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
Do:							
Dekoven	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Low strength	1.00	Flooding	0.60	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		

Table 12b.--Building Site Development--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
Dv:							
Dekoven	85	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	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
Fa:							
Falaya	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
Fc:							
Falaya	50	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
Waverly	45	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	0.60	Flooding	0.60
				Cutbanks cave	0.50		
FnA, FnB, FnB2:							
Feliciana	95	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
FnC2:							
Feliciana	95	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
FnC3:							
Feliciana	90	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
FnD3, FnE3:							
Feliciana	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
GrA:							
Grenada	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.46
		Depth to thick cemented pan	0.46	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
GrB:							
Grenada	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.46
		Depth to thick cemented pan	0.46	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		

Table 12b.--Building Site Development--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
GrB2:							
Grenada-------------	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.79
		Depth to thick cemented pan	0.80	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
GrB3:							
Grenada-------------	90	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	1.00
		Depth to thick cemented pan	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Cutbanks cave	0.10		
GrC2:							
Grenada-------------	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.79
		Depth to thick cemented pan	0.80	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Depth to saturated zone	0.19	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
GrC3:							
Grenada-------------	85	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	1.00
		Depth to thick cemented pan	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
GuF:							
Gullied land--------	60	Not Rated		Not Rated		Not Rated	
Memphis-------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
Ke:							
Keyespoint----------	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Shrink-swell	1.00	Too clayey	0.12		
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
Kf:							
Keyespoint----------	90	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	0.75
		Shrink-swell	1.00	Too clayey	0.12		
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
KrA:							
Kurk----------------	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Depth to saturated zone	0.88	Cutbanks cave	0.10		

Table 12b.--Building Site Development--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
KsA:							
Kurk	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Low strength	1.00	Flooding	0.60	Flooding	0.60
		Depth to saturated zone	0.88	Cutbanks cave	0.10		
KuA:							
Kurk	80	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	0.88
		Depth to saturated zone	0.88	Cutbanks cave	0.10		
LEVEE:							
Levee	100	Not Rated		Not Rated		Not Rated	
LoA, LoB:							
Loring	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to saturated zone	0.48
		Depth to saturated zone	0.48	Depth to saturated zone	1.00	Depth to cemented pan	0.35
		Depth to thick cemented pan	0.35	Cutbanks cave	0.10		
LoB2:							
Loring	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.84
		Depth to thick cemented pan	0.84	Depth to saturated zone	1.00	Depth to saturated zone	0.48
		Depth to saturated zone	0.48	Cutbanks cave	0.10		
LoB3:							
Loring	85	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.99
		Depth to thick cemented pan	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Cutbanks cave	0.10		
LoC2:							
Loring	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.84
		Depth to thick cemented pan	0.84	Depth to saturated zone	1.00	Depth to saturated zone	0.48
		Depth to saturated zone	0.48	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
LoC3:							
Loring	90	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.99
		Depth to thick cemented pan	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		

Table 12b.--Building Site Development--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
LoD3:							
Loring	90	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	0.56	Depth to thin cemented pan	1.00	Depth to saturated zone	0.56
				Cutbanks cave	0.10		
M-W:							
Miscellaneous Water	100	Not Rated		Not Rated		Not Rated	
MeA, MeB, MeB2:							
Memphis	95	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
MeC2:							
Memphis	95	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
MeC3:							
Memphis	90	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
MeD3, MeE3:							
Memphis	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
MmF:							
Memphis	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
Natchez	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.50		
Mo:							
Mhoon	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Op:							
Openlake	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Shrink-swell	1.00	Too clayey	0.72		
		Depth to saturated zone	0.56	Cutbanks cave	0.10		
Os:							
Openlake	90	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	0.56
		Shrink-swell	1.00	Too clayey	0.72		
		Depth to saturated zone	0.56	Cutbanks cave	0.10		

Table 12b.--Building Site Development--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
Ph:							
Phillippy	85	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
				Depth to saturated zone	1.00		
Pp:							
Phillippy	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Depth to saturated zone	1.00		
				Flooding	0.80		
PtD:							
Pits	75	Not Rated		Not Rated		Not Rated	
Udorthents	15	Not Rated		Not Rated		Not Rated	
Ra:							
Riverwash	100	Not Rated		Not Rated		Not Rated	
Rb:							
Robinsonville	85	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
				Depth to saturated zone	0.15		
Rc:							
Robinsonville	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60		
				Depth to saturated zone	0.15		
Rf:							
Robinsonville	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80		
				Depth to saturated zone	0.15		
RmD:							
Robinsonville	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Flooding	0.60
				Flooding	0.60		
				Depth to saturated zone	0.15		
Ro:							
Roellen	85	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	Too clayey	0.88	Too clayey	1.00
		Low strength	1.00	Flooding	0.60	Flooding	0.60
		Shrink-swell	1.00	Cutbanks cave	0.10		
RsA:							
Routon	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
		Low strength	1.00	Cutbanks cave	0.10		

Table 12b.--Building Site Development--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
RtA:							
Routon	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	0.60	Flooding	0.60
		Low strength	1.00	Cutbanks cave	0.10		
RuA:							
Routon	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		
Sc:							
Sharkey	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Cutbanks cave	1.00	Too clayey	1.00
		Low strength	1.00	Too clayey	0.50		
Sh:							
Sharkey	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Cutbanks cave	1.00	Too clayey	1.00
		Depth to saturated zone	1.00	Too clayey	0.50		
Sk:							
Sharkey	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Flooding	0.80	Too clayey	1.00
		Depth to saturated zone	1.00	Too clayey	0.50		
Tc:							
Tunica	90	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Too clayey	0.12	Too clayey	1.00
		Depth to saturated zone	1.00	Cutbanks cave	0.10		
Tu:							
Tunica	90	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	1.00
		Shrink-swell	1.00	Too clayey	0.12	Too clayey	1.00
		Depth to saturated zone	1.00	Cutbanks cave	0.10		
UdC:							
Udorthents	55	Not Rated		Not Rated		Not Rated	
Urban land	35	Not Rated		Not Rated		Not Rated	
UrB:							
Urban land	65	Not Rated		Not Rated		Not Rated	
Udorthents	20	Not Rated		Not Rated		Not Rated	

Table 12b.--Building Site Development--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
W:							
Water	100	Not Rated		Not Rated		Not Rated	
Wa:							
Ware	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.61		
				Cutbanks cave	0.10		
Wm:							
Ware	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.61	Flooding	0.60
				Flooding	0.60		
				Cutbanks cave	0.10		
Wr:							
Ware	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.61		
				Cutbanks cave	0.10		
Ws:							
Ware	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80		
				Depth to saturated zone	0.61		

Table 13.--Sanitary Facilities

(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	Value	Sewage lagoons: Rating class and limiting features	Value	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
Ac:											
Adler-------------	85	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.47
		Restricted permeability	0.46	Seepage	0.53						
Ad:											
Adler-------------	95	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.47
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Seepage	0.53						
Ba:											
Bardwell----------	80	Somewhat limited		Somewhat limited		Very limited		Very limited		Not limited	
		Depth to saturated zone	0.84	Seepage	0.53	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Depth to saturated zone	0.17						
Bd:											
Bardwell----------	85	Very limited		Very limited		Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00		
		Depth to saturated zone	0.84	Seepage	0.53	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Depth to saturated zone	0.17						
Be, Bf:											
Bardwell----------	80	Very limited		Very limited		Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00		
		Depth to saturated zone	0.84	Seepage	0.53	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Depth to saturated zone	0.17						

Table 13.--Sanitary Facilities--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	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
Bn:											
Bondurant	80	Very limited		Somewhat limited		Very limited		Somewhat limited		Very limited	
		Restricted permeability	1.00	Seepage	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Too clayey	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.04	Too clayey	1.00			Hard to compact	1.00
		Filtering capacity	1.00			Seepage	1.00			Depth to saturated zone	0.98
Bo:											
Bondurant	80	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Too clayey	1.00
		Restricted permeability	1.00	Seepage	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Hard to compact	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.04	Too clayey	1.00			Depth to saturated zone	0.98
		Filtering capacity	1.00			Seepage	1.00				
Br:											
Bowdre	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Seepage	1.00	Depth to saturated zone	1.00	Seepage	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.01	Too sandy	1.00	Depth to saturated zone	1.00	Seepage	0.50
						Seepage	1.00			Too sandy	0.50
Bw:											
Bowdre	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	1.00	Depth to saturated zone	1.00	Seepage	1.00	Seepage	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	0.01	Too sandy	1.00	Depth to saturated zone	1.00	Too sandy	0.50
						Seepage	1.00				
CaA:											
Calloway	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00			Depth to thick cemented pan	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46								

Table 13.--Sanitary Facilities--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	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
CaB2:											
Calloway----------	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	0.32	Depth to thick cemented pan	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46								
CeA:											
Center------------	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Restricted permeability	1.00								
CfA:											
Center------------	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	1.00								
Cg:											
Collins-----------	85	Very limited		Very limited		Very limited		Very limited		Not limited	
		Flooding	1.00	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	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Seepage	0.53						
Ch:											
Commerce----------	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Restricted permeability	1.00	Seepage	0.28						
Ck:											
Commerce----------	85	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	1.00	Seepage	0.28						

Table 13.--Sanitary Facilities--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	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
Cm:											
Commerce	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	1.00	Seepage	0.28						
Cn:											
Commerce	85	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	1.00	Seepage	0.28						
Co:											
Commerce	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	1.00	Seepage	0.28						
Cp:											
Convent	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Restricted permeability	0.50	Seepage	0.50						
Cr, Cs:											
Convent	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.98
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.50	Seepage	0.50						
Ct, Cu:											
Convent	55	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.98
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.50	Seepage	0.50						

Table 13.--Sanitary Facilities--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	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
Ct, Cu:											
Mhoon	40	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Hard to compact	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00			Too clayey	0.50			Too clayey	0.50
Cv, Cw, Cx:											
Crevasse	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Filtering capacity	1.00	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Depth to saturated zone	0.65	Depth to saturated zone	0.02	Seepage	1.00	Seepage	1.00		
						Too sandy	1.00				
De:											
Dekoven	80	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	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	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Seepage	0.53						
Dk:											
Dekoven	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	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	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Seepage	0.53						
Do, Dv:											
Dekoven	85	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.86
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Seepage	0.53						

Table 13.--Sanitary Facilities--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	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
Fa:											
Falaya	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	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	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.78	Seepage	0.21						
Fc:											
Falaya	50	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	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	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.78	Seepage	0.21						
Waverly	45	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	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	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Restricted permeability	0.46	Seepage	0.53						
FnA, FnB, FnB2:											
Feliciana	95	Somewhat limited		Somewhat limited		Not limited		Not limited		Not limited	
		Restricted permeability	0.46	Seepage	0.53						
FnC2:											
Feliciana	95	Somewhat limited		Very limited		Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Slope	1.00	Slope	0.04	Slope	0.04	Slope	0.04
		Slope	0.04	Seepage	0.53						
FnC3:											
Feliciana	90	Somewhat limited		Very limited		Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Slope	1.00	Slope	0.04	Slope	0.04	Slope	0.04
		Slope	0.04	Seepage	0.53						
FnD3, FnE3:											
Feliciana	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53						

Table 13.--Sanitary Facilities--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	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
GrA:											
Grenada-----------	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Seepage	0.53	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
		Restricted permeability	0.46	Depth to saturated zone	0.04						
GrB:											
Grenada-----------	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Seepage	0.53	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
		Restricted permeability	0.46	Slope	0.32						
				Depth to saturated zone	0.04						
GrB2:											
Grenada-----------	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Seepage	0.53	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
		Restricted permeability	0.46	Slope	0.32						
				Depth to saturated zone	0.04						
GrB3:											
Grenada-----------	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	0.68	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
				Seepage	0.53						
				Depth to saturated zone	0.04						
GrC2:											
Grenada-----------	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	1.00	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
		Restricted permeability	0.46	Seepage	0.53	Slope	0.04	Slope	0.04	Slope	0.04
		Slope	0.04	Depth to saturated zone	0.04						

Table 13.--Sanitary Facilities--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	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
GrC3:											
Grenada	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	1.00	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
		Slope	0.04	Seepage	0.53	Slope	0.04	Slope	0.04	Slope	0.04
				Depth to saturated zone	0.04						
GuF:											
Gullied land	60	Not rated		Not rated		Not rated		Not rated		Not rated	
Memphis	35	Very limited		Very limited		Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50						
Ke:											
Keyespoint	85	Very limited		Somewhat limited		Very limited		Somewhat limited		Very limited	
		Restricted permeability	1.00	Seepage	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Too clayey	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.04					Depth to saturated zone	0.98
Kf:											
Keyespoint	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Too clayey	1.00
		Restricted permeability	1.00	Seepage	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
		Depth to saturated zone	1.00	Depth to saturated zone	0.04						
KrA:											
Kurk	80	Very limited		Not limited		Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00			Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00							Too clayey	0.50
KsA, KuA:											
Kurk	80	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	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	Depth to saturated zone	1.00	Too clayey	0.50
		Restricted permeability	1.00								

Table 13.--Sanitary Facilities--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	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
LEVEE:											
Levee	100	Not rated		Not rated		Not rated		Not rated		Not rated	
LoA:											
Loring	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.81	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Depth to saturated zone	0.47
				Seepage	0.53						
LoB:											
Loring	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.81	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Depth to saturated zone	0.47
				Seepage	0.53						
				Slope	0.32						
LoB2:											
Loring	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.81	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Depth to saturated zone	0.47
		Restricted permeability	0.46	Seepage	0.53						
				Slope	0.32						
LoB3:											
Loring	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	0.68	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
				Seepage	0.53						
				Depth to saturated zone	0.04						
LoC2:											
Loring	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Depth to saturated zone	0.47
		Slope	0.04	Depth to saturated zone	0.81	Slope	0.04	Slope	0.04	Slope	0.04
				Seepage	0.53						

Table 13.--Sanitary Facilities--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	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
LoC3:											
Loring------------	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	1.00	Depth to thick cemented pan	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
		Slope	0.04	Seepage	0.53	Slope	0.04	Slope	0.04	Slope	0.04
				Depth to saturated zone	0.04						
LoD3:											
Loring------------	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53	Depth to thin cemented pan	0.50	Depth to saturated zone	0.96	Depth to saturated zone	0.98
				Depth to saturated zone	0.04						
M-W:											
Miscellaneous Water------------	100	Not rated		Not rated		Not rated		Not rated		Not rated	
MeA:											
Memphis-----------	95	Somewhat limited		Somewhat limited		Not limited		Not limited		Not limited	
		Restricted permeability	0.46	Seepage	0.53						
MeB, MeB2:											
Memphis-----------	95	Somewhat limited		Somewhat limited		Not limited		Not limited		Not limited	
		Restricted permeability	0.46	Seepage	0.53						
				Slope	0.32						
MeC2:											
Memphis-----------	95	Somewhat limited		Very limited		Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Slope	1.00	Slope	0.04	Slope	0.04	Slope	0.04
		Slope	0.04	Seepage	0.53						
MeC3:											
Memphis-----------	90	Somewhat limited		Very limited		Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Slope	1.00	Slope	0.04	Slope	0.04	Slope	0.04
		Slope	0.04	Seepage	0.53						

Table 13.--Sanitary Facilities--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	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
MeD3, MeE3:											
Memphis	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53						
MmF:											
Memphis	55	Very limited		Very limited		Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53						
Natchez	35	Very limited		Very limited		Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50						
Mo:											
Mhoon	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00			Too clayey	0.50			Hard to compact	1.00
										Too clayey	0.50
Op:											
Openlake	90	Very limited		Somewhat limited		Very limited		Somewhat limited		Very limited	
		Restricted permeability	1.00	Depth to saturated zone	0.04	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Too clayey	1.00
		Depth to saturated zone	1.00			Too clayey	0.50			Hard to compact	1.00
										Depth to saturated zone	0.98
Os:											
Openlake	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Too clayey	1.00
		Restricted permeability	1.00	Depth to saturated zone	0.04	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Hard to compact	1.00
		Depth to saturated zone	1.00			Too clayey	0.50			Depth to saturated zone	0.98
Ph:											
Phillippy	85	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00	Seepage	1.00	Too sandy	0.50
						Seepage	1.00			Depth to saturated zone	0.47

Table 13.--Sanitary Facilities--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	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
Pp:											
Phillippy---------	85	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Seepage	0.50
		Restricted permeability	1.00	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00	Seepage	1.00	Depth to saturated zone	0.47
						Seepage	1.00				
PtD:											
Pits--------------	75	Not rated		Not rated		Not rated		Not rated		Not rated	
Udorthents--------	15	Not rated		Not rated		Not rated		Not rated		Not rated	
Ra:											
Riverwash---------	100	Not rated		Not rated		Not rated		Not rated		Not rated	
Rb:											
Robinsonville-----	85	Somewhat limited		Very limited		Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.40	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.22
						Seepage	1.00	Seepage	1.00		
Rc:											
Robinsonville-----	85	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Seepage	0.22
		Depth to saturated zone	0.40	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
						Seepage	1.00	Seepage	1.00		
Rf:											
Robinsonville-----	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Seepage	0.22
		Depth to saturated zone	0.40	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
						Seepage	1.00	Seepage	1.00		
RmD:											
Robinsonville-----	90	Very limited		Very limited		Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Slope	0.63
		Slope	0.63	Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.22
		Depth to saturated zone	0.40	Seepage	1.00	Seepage	1.00	Seepage	1.00		
						Slope	0.63	Slope	0.63		

Table 13.--Sanitary Facilities--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	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
Ro:											
Roellen-----------	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to	1.00
		Restricted	1.00	Seepage	0.18	Depth to	1.00	Depth to	1.00	saturated zone	
		permeability				saturated zone		saturated zone		Too clayey	1.00
		Depth to	1.00			Too clayey	1.00			Hard to compact	1.00
		saturated zone									
RsA:											
Routon------------	80	Very limited		Not limited		Very limited		Very limited		Very limited	
		Restricted	1.00			Depth to	1.00	Depth to	1.00	Depth to	1.00
		permeability				saturated zone		saturated zone		saturated zone	
		Depth to	1.00								
		saturated zone									
RtA, RuA:											
Routon------------	80	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to	1.00
		Restricted	1.00			Depth to	1.00	Depth to	1.00	saturated zone	
		permeability				saturated zone		saturated zone			
		Depth to	1.00								
		saturated zone									
Sc:											
Sharkey-----------	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Restricted	1.00	Ponding	1.00	Depth to	1.00	Ponding	1.00	Ponding	1.00
		permeability		Depth to	1.00	saturated zone		Depth to	1.00	Depth to	1.00
		Ponding	1.00	saturated zone		Ponding	1.00	saturated zone		saturated zone	
		Depth to	1.00			Too clayey	1.00			Too clayey	1.00
		saturated zone				Too clayey	1.00			Hard to compact	1.00
Sh:											
Sharkey-----------	85	Very limited		Not limited		Very limited		Very limited		Very limited	
		Restricted	1.00			Depth to	1.00	Depth to	1.00	Depth to	1.00
		permeability				saturated zone		saturated zone		saturated zone	
		Depth to	1.00			Too clayey	1.00			Too clayey	1.00
		saturated zone								Hard to compact	1.00
Sk:											
Sharkey-----------	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to	1.00
		Restricted	1.00			Depth to	1.00	Depth to	1.00	saturated zone	
		permeability				saturated zone		saturated zone		Too clayey	1.00
		Depth to	1.00			Too clayey	1.00			Hard to compact	1.00
		saturated zone									

Table 13.--Sanitary Facilities--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	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
Tc:											
Tunica	90	Very limited		Somewhat limited		Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Seepage	0.21	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00								
Tu:											
Tunica	90	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	0.21	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Depth to saturated zone	1.00								
UdC:											
Udorthents	55	Not rated		Not rated		Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated		Not rated		Not rated	
UrB:											
Urban land	65	Not rated		Not rated		Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated		Not rated		Not rated	
W:											
Water	100	Not rated		Not rated		Not rated		Not rated		Not rated	
Wa:											
Ware	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.71	Seepage	1.00	Seepage	1.00		
		Restricted permeability	0.46								

Table 13.--Sanitary Facilities--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	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
Wm:											
Ware	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Seepage	1.00
		Filtering capacity	1.00	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	0.71	Seepage	1.00	Seepage	1.00		
		Restricted permeability	0.46								
Wr:											
Ware	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.71	Seepage	1.00	Seepage	1.00		
Ws:											
Ware	85	Very limited		Very limited		Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00	Flooding	1.00	Seepage	1.00
		Filtering capacity	1.00	Seepage	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	0.71	Seepage	1.00	Seepage	1.00		

Table 14.--Construction Materials

(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: Rating class	Value	Potential source of sand: Rating class	Value	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
Ac:											
Adler----------	85	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.89	Depth to saturated zone	0.89
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90				
Ad:											
Adler----------	95	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.89	Depth to saturated zone	0.89
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90				
Ba:											
Bardwell-------	80	Poor		Poor		Poor		Good		Good	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00				
		Thickest layer	0.00	Thickest layer	0.00						
Bd:											
Bardwell-------	85	Poor		Poor		Poor		Good		Good	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00				
		Thickest layer	0.00	Thickest layer	0.00						
Be, Bf:											
Bardwell-------	80	Poor		Poor		Poor		Good		Good	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00				
		Thickest layer	0.00	Thickest layer	0.00						
Bn, Bo:											
Bondurant------	80	Poor		Fair		Poor		Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.24	Too clayey	0.00
		Thickest layer	0.00	Bottom layer	0.08	Too clayey	0.00	Shrink-swell	0.45	Depth to saturated zone	0.24
						Water erosion	0.99				
Br, Bw:											
Bowdre---------	85	Poor		Fair		Poor		Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.14	Too clayey	0.00
		Thickest layer	0.00	Bottom layer	0.52	Too clayey	0.00	Shrink-swell	0.99	Depth to saturated zone	0.14
						Water erosion	0.99				

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
CaA, CaB2:											
Calloway-------	90	Poor		Poor		Fair		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Too acid	0.46	Depth to cemented pan	0.00	Depth to saturated zone	0.04
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.54	Depth to saturated zone	0.04	Depth to cemented pan	0.54
						Water erosion	0.68				
CeA, CfA:											
Center---------	90	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.53	Depth to saturated zone	0.53
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.74				
Cg:											
Collins--------	85	Poor		Poor		Poor		Good		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00			Too acid	0.88
		Thickest layer	0.00	Thickest layer	0.00	Too acid	0.32				
						Water erosion	0.90				
Ch:											
Commerce-------	90	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.53	Depth to saturated zone	0.53
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90	Shrink-swell	0.99		
Ck:											
Commerce-------	85	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.53	Depth to saturated zone	0.53
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90	Shrink-swell	0.99		
Cm:											
Commerce-------	90	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.53	Depth to saturated zone	0.53
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90	Shrink-swell	0.99		
Cn:											
Commerce-------	85	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.53	Depth to saturated zone	0.53
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.99	Shrink-swell	0.98		

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
Co:											
Commerce-------	90	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.53	Depth to saturated zone	0.53
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.99	Shrink-swell	0.99		
Cp, Cr:											
Convent--------	90	Poor		Poor		Fair		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.88	Depth to saturated zone	0.24	Depth to saturated zone	0.24
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90				
Cs:											
Convent--------	90	Poor		Poor		Fair		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.88	Depth to saturated zone	0.24	Depth to saturated zone	0.24
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90				
Ct, Cu:											
Convent--------	55	Poor		Poor		Fair		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.88	Depth to saturated zone	0.24	Depth to saturated zone	0.24
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90				
Mhoon----------	40	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90	Shrink-swell	0.87		
Cv, Cw:											
Crevasse-------	90	Poor		Fair		Poor		Good		Poor	
		Bottom layer	0.00	Thickest layer	0.57	Too sandy	0.00			Too sandy	0.00
		Thickest layer	0.00	Bottom layer	0.99	Low content of organic matter	0.00				
						Droughty	0.06				
Cx:											
Crevasse-------	90	Poor		Fair		Poor		Good		Poor	
		Bottom layer	0.00	Thickest layer	0.00	Too sandy	0.00			Too sandy	0.00
		Thickest layer	0.00	Bottom layer	0.99	Low content of organic matter	0.00				
						Droughty	0.32				

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
De:											
Dekoven--------	80	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.99				
Dk:											
Dekoven--------	85	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.99				
Do, Dv:											
Dekoven--------	85	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.53	Depth to saturated zone	0.53
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.99				
Fa:											
Falaya---------	85	Poor		Poor		Fair		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Too acid	0.32	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68			Too acid	0.88
Fc:											
Falaya---------	50	Poor		Poor		Fair		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Too acid	0.32	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68			Too acid	0.88
Waverly--------	45	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Thickest layer	0.00	Thickest layer	0.00	Too acid	0.32			Too acid	0.88
						Water erosion	0.90				
FnA, FnB, FnB2:											
Feliciana------	95	Poor		Poor		Poor		Good		Good	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00				
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.84				

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
FnC2:											
Feliciana------	95	Poor		Poor		Poor		Good		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00			Slope	0.96
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.84				
FnC3:											
Feliciana------	90	Poor		Poor		Poor		Good		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00			Slope	0.96
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.84				
FnD3:											
Feliciana------	90	Poor		Poor		Poor		Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Slope	0.98	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.84				
FnE3:											
Feliciana------	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Slope	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.84				
GrA:											
Grenada--------	85	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to saturated zone	0.24
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.54	Depth to saturated zone	0.24	Depth to cemented pan	0.54
						Water erosion	0.68				
						Too acid	0.68				
GrB:											
Grenada--------	90	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to saturated zone	0.24
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.54	Depth to saturated zone	0.24	Depth to cemented pan	0.54
						Water erosion	0.68				
						Too acid	0.68				

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
GrB2:											
Grenada--------	85	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to cemented pan	0.21
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.21	Depth to saturated zone	0.24	Depth to saturated zone	0.24
						Water erosion	0.68				
						Too acid	0.68				
						Droughty	0.99				
GrB3:											
Grenada--------	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to cemented pan	0.00
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.00	Depth to saturated zone	0.24	Depth to saturated zone	0.24
						Droughty	0.49				
						Water erosion	0.68				
						Too acid	0.68				
GrC2:											
Grenada--------	85	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to saturated zone	0.24
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.54	Depth to saturated zone	0.24	Depth to cemented pan	0.54
						Water erosion	0.68			Slope	0.96
						Too acid	0.68				
GrC3:											
Grenada--------	85	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to cemented pan	0.00
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.00	Depth to saturated zone	0.24	Depth to saturated zone	0.24
						Droughty	0.49			Slope	0.96
						Water erosion	0.68				
						Too acid	0.68				
GuF:											
Gullied land---	60	Not rated		Not rated		Not rated		Not rated		Not rated	
Memphis--------	35	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Slope	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.68				

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
Ke:											
Keyespoint	85	Poor		Fair		Poor		Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.24	Too clayey	0.00
		Thickest layer	0.00	Bottom layer	0.06	Too clayey	0.00	Shrink-swell	0.84	Depth to saturated zone	0.24
						Water erosion	0.99				
Kf:											
Keyespoint	90	Poor		Fair		Poor		Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.24	Too clayey	0.00
		Thickest layer	0.00	Bottom layer	0.06	Too clayey	0.00	Shrink-swell	0.84	Depth to saturated zone	0.24
						Water erosion	0.99				
KrA, KsA, KuA:											
Kurk	80	Poor		Poor		Poor		Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.07	Depth to saturated zone	0.07
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.84				
LEVEE:											
Levee	100	Not rated		Not rated		Not rated		Not rated		Not rated	
LoA, LoB:											
Loring	90	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to cemented pan	0.54
		Thickest layer	0.00	Thickest layer	0.00	Too acid	0.39	Depth to saturated zone	0.89	Depth to saturated zone	0.89
						Depth to cemented pan	0.54				
						Water erosion	0.68				
LoB2:											
Loring	90	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to cemented pan	0.00	Depth to cemented pan	0.16
		Thickest layer	0.00	Thickest layer	0.00	Depth to cemented pan	0.16	Depth to saturated zone	0.89	Depth to saturated zone	0.89
						Too acid	0.39				
						Water erosion	0.68				
						Droughty	0.93				

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
LoB3:											
Loring---------	85	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of	0.00	Depth to cemented	0.00	Depth to cemented	0.01
		Thickest layer	0.00	Thickest layer	0.00	organic matter		pan		pan	
						Depth to cemented	0.01	Depth to	0.24	Depth to	0.24
						pan		saturated zone		saturated zone	
						Droughty	0.49			Too acid	0.98
						Too acid	0.54				
						Water erosion	0.68				
LoC2:											
Loring---------	85	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of	0.00	Depth to cemented	0.00	Depth to cemented	0.01
		Thickest layer	0.00	Thickest layer	0.00	organic matter		pan		pan	
						Depth to cemented	0.01	Depth to	0.89	Depth to	0.89
						pan		saturated zone		saturated zone	
						Too acid	0.39			Slope	0.96
						Droughty	0.50				
						Water erosion	0.68				
LoC3:											
Loring---------	90	Poor		Poor		Poor		Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of	0.00	Depth to cemented	0.00	Depth to cemented	0.01
		Thickest layer	0.00	Thickest layer	0.00	organic matter		pan		pan	
						Depth to cemented	0.01	Depth to	0.24	Depth to	0.24
						pan		saturated zone		saturated zone	
						Droughty	0.49			Slope	0.96
						Too acid	0.54			Too acid	0.98
						Water erosion	0.68				
LoD3:											
Loring---------	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of	0.00	Depth to cemented	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	organic matter		pan		Depth to cemented	0.01
						Depth to cemented	0.01	Depth to	0.24	pan	
						pan		saturated zone		Depth to	0.24
						Droughty	0.44	Slope	0.98	saturated zone	
						Too acid	0.54			Too acid	0.98
						Water erosion	0.68				
M-W:											
Miscellaneous											
Water---------	100	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
MeA, MeB, MeB2:											
Memphis--------	95	Poor		Poor		Poor		Good		Good	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00				
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.68				
MeC2:											
Memphis--------	95	Poor		Poor		Poor		Good		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00			Slope	0.96
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.68				
MeC3:											
Memphis--------	90	Poor		Poor		Poor		Good		Fair	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00			Slope	0.96
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.68				
MeD3:											
Memphis--------	90	Poor		Poor		Poor		Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Slope	0.98	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.68				
MeE3:											
Memphis--------	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Slope	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.68				
MmF:											
Memphis--------	55	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Slope	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.68				
Natchez--------	35	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Slope	0.00	Slope	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.68				
						Too acid	0.92				

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
Mo:											
Mhoon----------	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Thickest layer	0.00	Thickest layer	0.00	Water erosion	0.90	Shrink-swell	0.87		
Op, Os:											
Openlake-------	90	Poor		Poor		Poor		Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.24	Depth to saturated zone	0.24
						Water erosion	0.99				
Ph, Pp:											
Phillippy------	85	Poor		Fair		Poor		Fair		Fair	
		Bottom layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.89	Depth to saturated zone	0.89
		Thickest layer	0.00	Bottom layer	0.39	Too acid	0.84				
						Water erosion	0.99				
PtD:											
Pits-----------	75	Not rated		Not rated		Not rated		Not rated		Not rated	
Udorthents-----	15	Not rated		Not rated		Not rated		Not rated		Not rated	
Ra:											
Riverwash------	100	Not rated		Not rated		Not rated		Not rated		Not rated	
Rb, Rc:											
Robinsonville--	85	Poor		Fair		Poor		Good		Good	
		Bottom layer	0.00	Bottom layer	0.01	Low content of organic matter	0.00				
		Thickest layer	0.00	Thickest layer	0.06						
Rf:											
Robinsonville--	90	Poor		Fair		Poor		Good		Good	
		Bottom layer	0.00	Bottom layer	0.01	Low content of organic matter	0.00				
		Thickest layer	0.00	Thickest layer	0.06						
RmD:											
Robinsonville--	90	Poor		Fair		Poor		Good		Fair	
		Bottom layer	0.00	Bottom layer	0.01	Low content of organic matter	0.00			Slope	0.37
		Thickest layer	0.00	Thickest layer	0.06						

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
Ro:											
Roellen	85	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00	Depth to saturated zone	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00			Shrink-swell	0.12	Depth to saturated zone	0.00
RsA, RtA, RuA:											
Routon	80	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Thickest layer	0.00	Thickest layer	0.00	Too acid	0.32			Too acid	0.88
						Water erosion	0.68				
Sc:											
Sharkey	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00	Depth to saturated zone	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Shrink-swell	0.00	Depth to saturated zone	0.00
Sh:											
Sharkey	85	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00	Depth to saturated zone	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00	Low content of	0.00	Shrink-swell	0.00	Depth to saturated zone	0.00
						organic matter	0.00				
Sk:											
Sharkey	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Too clayey	0.00	Depth to saturated zone	0.00	Too clayey	0.00
		Thickest layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00	Shrink-swell	0.00	Depth to saturated zone	0.00
Tc, Tu:											
Tunica	90	Poor		Poor		Poor		Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00	Low content of organic matter	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Thickest layer	0.00	Thickest layer	0.00	Too clayey	0.00	Shrink-swell	0.90	Too clayey	0.00
UdC:											
Udorthents	55	Not rated		Not rated		Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated		Not rated		Not rated	
UrB:											
Urban land	65	Not rated		Not rated		Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 14.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value	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
W:											
Water----------	100	Not rated		Not rated		Not rated		Not rated		Not rated	
Wa, Wm:											
Ware-----------	85	Poor		Fair		Fair		Good		Good	
		Bottom layer	0.00	Thickest layer	0.06	Low content of organic matter	0.24				
		Thickest layer	0.00	Bottom layer	0.08						
Wr, Ws:											
Ware-----------	85	Poor		Fair		Poor		Good		Good	
		Bottom layer	0.00	Thickest layer	0.00	Low content of organic matter	0.00				
		Thickest layer	0.00	Bottom layer	0.08						

Table 15.--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: 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
Ac:							
Adler	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Piping	1.00	Cutbanks cave	0.50
				Depth to saturated zone	0.86	Slow refill	0.28
						Deep to water	0.06
Ad:							
Adler	95	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Piping	1.00	Cutbanks cave	0.50
				Depth to saturated zone	0.86	Slow refill	0.28
						Deep to water	0.06
Ba:							
Bardwell	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Piping	1.00	Deep to water	0.96
						Slow refill	0.28
						Cutbanks cave	0.10
Bd:							
Bardwell	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Piping	1.00	Deep to water	0.96
						Slow refill	0.28
						Cutbanks cave	0.10
Be, Bf:							
Bardwell	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Piping	1.00	Deep to water	0.96
						Slow refill	0.28
						Cutbanks cave	0.10
Bn, Bo:							
Bondurant	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Deep to water	1.00
				Hard to pack	0.30		
				Seepage	0.08		
Br, Bw:							
Bowdre	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Deep to water	1.00
				Seepage	0.52		
CaA:							
Calloway	90	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	0.86	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Piping	1.00		
				Thin layer	0.86		
CaB2:							
Calloway	90	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	0.86	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Piping	0.96		
				Thin layer	0.86		

Table 15.--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
CeA, CfA:							
Center	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.04	Piping	1.00	Slow refill	0.96
				Depth to saturated zone	1.00	Cutbanks cave	0.10
						Deep to water	0.01
Cg:							
Collins	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Piping	1.00	Deep to water	0.54
				Depth to saturated zone	0.09	Cutbanks cave	0.50
						Slow refill	0.28
Ch:							
Commerce	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	1.00	Slow refill	0.46
						Cutbanks cave	0.10
				Piping	0.56	Deep to water	0.01
Ck:							
Commerce	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	1.00	Slow refill	0.46
						Cutbanks cave	0.10
				Piping	0.56	Deep to water	0.01
Cm:							
Commerce	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	1.00	Slow refill	0.46
						Cutbanks cave	0.10
				Piping	0.56	Deep to water	0.01
Cn:							
Commerce	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	1.00	Slow refill	0.46
						Cutbanks cave	0.10
				Piping	0.70	Deep to water	0.01
Co:							
Commerce	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	1.00	Slow refill	0.46
						Cutbanks cave	0.10
				Piping	0.73	Deep to water	0.01
Cp, Cr, Cs:							
Convent	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	1.00		
Ct, Cu:							
Convent	55	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	1.00		
Mhoon	40	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Piping	0.01		

Table 15.--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
Cv, Cw, Cx:							
Crevasse	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Cutbanks cave	1.00
						Deep to water	0.99
De:							
Dekoven	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.88		
Dk:							
Dekoven	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.88		
Do, Dv:							
Dekoven	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.88	Deep to water	0.01
Fa:							
Falaya	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	1.00		
Fc:							
Falaya	50	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	1.00		
Waverly	45	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	0.50
						Slow refill	0.28
				Piping	1.00		
FnA, FnB:							
Feliciana	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.69	Deep to water	1.00
FnB2, FnC2:							
Feliciana	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.96	Deep to water	1.00
FnC3:							
Feliciana	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.97	Deep to water	1.00
FnD3:							
Feliciana	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.99	Deep to water	1.00
		Slope	0.04				
FnE3:							
Feliciana	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.99	Deep to water	1.00
		Slope	0.28				

Table 15.--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
GrA:							
Grenada	85	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	0.86	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Piping	0.94		
				Thin layer	0.86		
GrB:							
Grenada	90	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	0.86	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Piping	0.94		
				Thin layer	0.86		
GrB2:							
Grenada	85	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	0.95	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Piping	0.97		
				Thin layer	0.95		
GrB3:							
Grenada	90	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Thin layer	1.00		
				Piping	0.97		
GrC2:							
Grenada	85	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	0.86	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Piping	0.93		
				Thin layer	0.86		
GrC3:							
Grenada	85	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Thin layer	1.00		
				Piping	0.97		
GuF:							
Gullied land	60	Not rated		Not rated		Not rated	
Memphis	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.88	Piping	0.96	Deep to water	1.00
		Seepage	0.70				
Ke:							
Keyespoint	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Deep to water	1.00
				Seepage	0.06		
Kf:							
Keyespoint	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Deep to water	1.00
				Seepage	0.06		

Table 15.--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
KrA, KsA, KuA:							
Kurk	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Depth to saturated zone	1.00	Deep to water	1.00
				Piping	0.82		
LEVEE:							
Levee	100	Not rated		Not rated		Not rated	
LoA, LoB:							
Loring	90	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.86	Thin layer	0.86	Deep to water	1.00
				Depth to saturated zone	0.86		
		Seepage	0.72				
				Piping	0.50		
LoB2:							
Loring	90	Somewhat limited		Somewhat limited		Very limited	
		Depth to cemented pan	0.96	Thin layer	0.96	Deep to water	1.00
				Depth to saturated zone	0.86		
		Seepage	0.72				
				Piping	0.50		
LoB3:							
Loring	85	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Thin layer	1.00		
				Piping	0.50		
LoC2:							
Loring	85	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Thin layer	1.00	Deep to water	1.00
				Depth to saturated zone	0.86		
		Seepage	0.72				
				Piping	0.50		
LoC3:							
Loring	90	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Thin layer	1.00		
				Piping	0.50		
LoD3:							
Loring	90	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to saturated zone	1.00	Deep to water	1.00
		Seepage	0.72	Thin layer	1.00		
		Slope	0.04	Piping	0.49		
M-W:							
Miscellaneous Water	100	Not rated		Not rated		Not rated	
MeA, MeB, MeB2: MeC2:							
Memphis	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.77	Deep to water	1.00
MeC3:							
Memphis	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.96	Deep to water	1.00

Table 15.--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
MeD3:							
Memphis	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.96	Deep to water	1.00
		Slope	0.04				
MeE3:							
Memphis	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.96	Deep to water	1.00
		Slope	0.28				
MmF:							
Memphis	55	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.77	Deep to water	1.00
		Slope	0.72				
Natchez	35	Somewhat limited		Very limited		Very limited	
		Slope	0.72	Piping	1.00	Deep to water	1.00
		Seepage	0.70				
Mo:							
Mhoon	90	Not limited		Very limited		Somewhat limited	
				Ponding	1.00	Slow refill	0.28
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.01		
Op, Os:							
Openlake	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.03	Depth to saturated zone	1.00	Deep to water	1.00
				Hard to pack	0.84		
Ph, Pp:							
Phillippy	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.86	Cutbanks cave	1.00
						Deep to water	0.06
				Seepage	0.39		
PtD:							
Pits	75	Not rated		Not rated		Not rated	
Udorthents	15	Not rated		Not rated		Not rated	
Ra:							
Riverwash	100	Not rated		Not rated		Not rated	
Rb, Rc:							
Robinsonville	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Deep to water	1.00
Rf:							
Robinsonville	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Deep to water	1.00
RmD:							
Robinsonville	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Deep to water	1.00
		Slope	0.01				

Table 15.--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
Ro:							
Roellen	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.43	Depth to saturated zone	1.00	Deep to water	1.00
				Hard to pack	0.76		
RsA, RtA, RuA:							
Routon	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Deep to water	1.00
				Piping	1.00		
Sc:							
Sharkey	90	Not limited		Very limited		Very limited	
				Ponding	1.00	Slow refill	1.00
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Hard to pack	1.00		
Sh:							
Sharkey	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Deep to water	1.00
				Hard to pack	1.00		
Sk:							
Sharkey	90	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Deep to water	1.00
				Hard to pack	1.00		
Tc, Tu:							
Tunica	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.47	Depth to saturated zone	1.00	Deep to water	1.00
UdC:							
Udorthents	55	Not rated		Not rated		Not rated	
Urban land	35	Not rated		Not rated		Not rated	
UrB:							
Urban land	65	Not rated		Not rated		Not rated	
Udorthents	20	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
Wa, Wm, Wr:							
Ware	85	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Seepage	0.08	Deep to water	0.81
						Cutbanks cave	0.10
Ws:							
Ware	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Cutbanks cave	1.00
						Deep to water	0.81

Table 16.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Ac, Ad:										
Adler	0-9	Silt loam	CL-ML, ML	A-4	100	100	100	95-100	15-28	NP-7
	9-80	Silt loam, silt, very fine sandy loam	CL, CL-ML, ML	A-4	100	100	95-100	60-95	15-30	NP-10
Ba, Bd, Be:										
Bardwell	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	100	100	90-100	80-95	25-40	4-15
	8-53	Silt loam, silty clay loam	CL-ML, CL, ML	A-4, A-6	100	100	90-100	80-95	25-40	4-15
	53-80	Loam, silt loam, fine sandy loam	CL, ML, SM, SC	A-2, A-4	100	100	85-100	30-75	15-30	NP-10
Bf:										
Bardwell	0-15	Silty clay loam	CL, CL-ML, ML	A-4, A-6	100	100	90-100	85-95	25-40	4-15
	15-44	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	100	100	90-100	85-95	25-40	4-15
	44-80	Loam, silt loam, fine sandy loam	SC, SM, ML, CL	A-2, A-4	100	100	85-100	40-80	15-30	NP-10
Bn, Bo:										
Bondurant	0-3	Silty clay loam	CH, CL	A-7	100	100	95-100	85-100	45-60	25-35
	3-48	Silty clay, clay, silty clay loam	CH	A-7	100	100	95-100	90-100	55-80	33-50
	48-72	Clay loam, silty clay loam, silt loam	CL, CL-ML, ML, SM	A-4, A-6	100	100	85-100	40-80	30-45	5-25
	72-80	Loamy fine sand, loam, fine sandy loam	SM, CL-ML, ML, CL	A-4, A-6	100	100	85-98	20-60	0-20	NP-3
Br:										
Bowdre	0-20	Silty clay	CH	A-7	100	100	95-100	90-95	51-65	28-40
	20-24	Silty clay loam, silty clay	CH	A-7, A-6	100	100	95-100	90-95	51-65	28-40
	24-30	Fine sandy loam, loam, silt loam	ML, CL-ML, CL	A-4, A-6	100	100	90-100	35-60	15-25	NP-7
	30-80	Loamy fine sand, sandy loam, fine sand	SC-SM, SM	A-2, A-4	100	100	75-80	15-35	15-25	NP-5

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Bw:										
Bowdre	0-20	Silty clay	CH	A-7	100	100	95-100	90-95	51-65	28-40
	20-24	Silty clay loam, silty clay	CH	A-7	100	100	95-100	90-95	51-65	28-40
	24-30	Fine sandy loam, loam, silt loam	CL, CL-ML, ML	A-4, A-6	100	100	90-100	35-60	15-25	NP-7
	30-80	Loamy fine sand, sandy loam, fine sand	SC-SM, SM	A-2, A-4	100	100	75-80	15-35	15-25	NP-5
CaA:										
Calloway	0-30	Silt loam	CL-ML, CL	A-4, A-6	100	100	100	90-100	25-35	5-15
	30-60	Silt loam, silty clay loam	CL	A-6	100	100	100	90-95	30-40	12-20
	60-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	100	100	100	90-100	25-35	5-15
CaB2:										
Calloway	0-25	Silt loam	CL-ML, CL	A-4, A-6	100	100	100	90-100	25-35	5-15
	25-60	Silt loam, silty clay loam	CL	A-6	100	100	100	90-95	30-40	12-20
	60-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	100	100	100	90-100	25-35	5-15
CeA, CfA:										
Center	0-10	Silt loam	CL, ML, CL-ML	A-4, A-6	100	100	90-100	80-100	0-30	3-11
	10-48	Silt loam, silty clay loam	CL, ML	A-4, A-6	100	100	95-100	90-100	28-40	8-16
	48-80	Silt loam	CL, CL-ML, ML	A-4, A-6	100	100	90-100	80-100	0-30	3-11
Cg:										
Collins	0-12	Silt loam	CL, CL-ML, ML	A-4	100	100	85-100	70-90	0-30	NP-8
	12-80	Silt loam, silt	CL-ML, ML	A-4	100	100	100	90-100	0-35	NP-10
Ch:										
Commerce	0-11	Silt loam	ML, CL-ML, CL	A-4	100	100	100	75-100	15-30	NP-10
	11-43	Silt loam, silty clay loam, loam	CL	A-6, A-7-6	100	100	90-100	70-100	32-45	11-23
	43-80	Silt loam, stratified very fine sandy loam to silty clay loam	CL-ML, CL, ML	A-4, A-6, A-7-6	100	100	90-100	50-95	23-45	3-23

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Ck:										
Commerce--------	0-11	Silt loam	ML, CL-ML, CL	A-4	100	100	100	75-100	15-30	NP-10
	11-43	Silt loam, silty clay loam, loam	CL	A-6, A-4	100	100	90-100	70-100	32-45	11-23
	43-80	Silt loam, stratified very fine sandy loam to silty clay loam	CL-ML, CL, ML	A-4, A-6, A-7-6	100	100	90-100	50-95	23-45	3-23
Cm:										
Commerce--------	0-11	Silt loam	CL, CL-ML, ML	A-4	100	100	100	75-100	15-30	NP-10
	11-43	Silt loam, silty clay loam, loam	CL	A-6, A-7-6	100	100	90-100	70-100	32-45	11-23
	43-80	Silt loam, stratified very fine sandy loam to silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7-6	100	100	90-100	50-95	23-45	3-23
Cn:										
Commerce--------	0-11	Silty clay loam	CL	A-6, A-7-6	100	100	100	90-100	32-50	11-25
	11-43	Silt loam, silty clay loam, loam	CL	A-6, A-4	100	100	95-100	70-100	32-45	11-23
	43-80	Stratified very fine sandy loam to silt loam to silty clay loam	CL-ML, ML, CL	A-4, A-6, A-7-6	100	100	90-100	40-80	23-45	3-23
Co:										
Commerce--------	0-14	Silty clay loam	CL	A-6, A-7-6	100	100	100	90-100	32-50	11-25
	14-40	Silt loam, silty clay loam, loam	CL	A-6, A-7-6	100	100	95-100	70-100	32-45	11-23
	40-80	Stratified very fine sandy loam to silt loam to silty clay loam	CL, ML, CL-ML	A-4, A-6	100	100	90-100	40-80	23-45	3-23
Cp, Cr, Cs:										
Convent---------	0-10	Silt loam	CL-ML, ML	A-4	100	100	95-100	85-100	15-27	NP-7
	10-80	Silt loam, loam, very fine sandy loam	CL-ML, ML	A-4	100	100	95-100	45-98	15-27	NP-7
Ct:										
Convent---------	0-10	Silt loam	ML, CL-ML	A-4	100	100	95-100	85-100	15-27	NP-7
	10-80	Silt loam, very fine sandy loam, loam	ML, CL-ML	A-4	100	100	95-100	45-98	15-27	NP-7

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Ct:										
Mhoon	0-9	Silt loam	CL, CL-ML, ML	A-4	100	100	100	95-100	22-30	3-10
	9-80	Silty clay loam, silt loam	CL, CH	A-6, A-7-6	100	100	100	90-98	30-55	11-28
Cu:										
Convent	0-10	Silt loam	ML, CL-ML	A-4	100	100	95-100	85-100	15-27	NP-7
	10-80	Silt loam, very fine sandy loam, loam	ML, CL-ML	A-4	100	100	95-100	45-98	15-27	NP-7
Mhoon	0-9	Silt loam	CL, ML, CL-ML	A-4	100	100	100	95-100	22-30	3-10
	9-80	Silty clay loam, silt loam, clay loam	CH, CL	A-6, A-7-6	100	100	100	90-98	30-55	11-28
Cv, Cw:										
Crevasse	0-7	Loamy fine sand	SM	A-2	100	95-100	60-95	15-30	---	NP
	7-80	Sand, loamy sand, loamy fine sand, fine sand	SM, SP-SM	A-3, A-2	100	95-100	50-90	5-20	---	NP
Cx:										
Crevasse	0-4	Silt loam	SM	A-4	100	100	75-100	65-80	0-20	NP-7
	4-7	Loam, sandy loam, loamy fine sand	CL, CL-ML, ML	A-4	100	100	92-98	20-65	20-30	2-10
	7-80	Sand, loamy sand, loamy fine sand, fine sand	SP-SM, SM	A-3, A-2	100	100	50-100	5-20	---	NP
De:										
Dekoven	0-20	Silt loam	ML, CL-ML, CL	A-4, A-6	100	100	90-100	85-100	25-40	5-20
	20-80	Silt loam, silty clay loam	ML, CL-ML, CL	A-4, A-6, A-7	100	100	90-100	85-98	25-45	5-20
Dk:										
Dekoven	0-20	Silt loam	CL-ML, CL, ML	A-4, A-6	100	100	90-100	85-100	25-40	5-20
	20-80	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7	100	100	90-100	85-100	25-45	5-20
Do, Dv:										
Dekoven	0-34	Silt loam	ML, CL-ML, CL	A-4, A-6	100	100	90-100	85-100	25-40	5-20
	34-80	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7	100	100	90-100	85-98	25-45	5-20
Fa:										
Falaya	0-52	Silt loam	CL, CL-ML, ML	A-4	100	100	100	95-100	0-30	NP-10
	52-80	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	100	100	100	95-100	25-43	7-16
Fc:										
Falaya	0-52	Silt loam	CL, CL-ML, ML	A-4	100	100	100	95-100	0-30	NP-10
	52-80	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	100	100	100	95-100	25-43	7-16

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification Unified	Classification AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Fc:										
Waverly	0-10	Silt loam	CL-ML, ML	A-4	100	100	95-100	90-98	0-25	NP-9
	10-80	Silt, silt loam	CL, CL-ML, ML	A-4	100	100	95-100	85-100	20-30	3-10
FnA, FnB:										
Feliciana	0-8	Silt loam	ML, CL, CL-ML	A-4	100	100	100	90-100	0-30	NP-10
	8-35	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	35-80	Silt loam	CL, ML	A-4, A-6	100	100	100	90-100	30-40	6-15
FnB2, FnC2:										
Feliciana	0-5	Silt loam	ML, CL-ML, CL	A-4	100	100	100	90-100	0-30	NP-10
	5-17	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	17-80	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
FnC3:										
Feliciana	0-6	Silt loam	CL, ML, CL-ML	A-4	100	100	100	90-100	0-30	NP-10
	6-15	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	15-80	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
FnD3, FnE3:										
Feliciana	0-4	Silt loam	ML, CL-ML, CL	A-4	100	100	100	90-100	0-30	NP-10
	4-12	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	12-80	Silt loam	CL, ML	A-4, A-6	100	100	100	90-100	30-40	6-15
GrA, GrB:										
Grenada	0-7	Silt loam	CL-ML, ML	A-4	100	100	95-100	90-100	25-31	4-7
	7-24	Silt loam	CL	A-4, A-6	100	100	95-100	90-100	27-40	8-19
	24-30	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	20-30	5-10
	30-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	100	100	95-100	90-100	25-45	5-24
GrB2:										
Grenada	0-5	Silt loam	ML, CL-ML	A-4	100	100	95-100	90-100	25-31	4-7
	5-20	Silt loam	CL	A-4, A-6	100	100	95-100	90-100	27-40	8-19
	20-26	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	100	100	95-100	90-100	20-30	5-10
	26-80	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	100	100	95-100	90-100	25-45	5-24
GrB3:										
Grenada	0-4	Silt loam	CL-ML, ML	A-4	100	100	95-100	90-100	25-31	4-7
	4-16	Silt loam	CL	A-4, A-6	100	100	95-100	90-100	27-40	8-19
	16-20	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	20-30	5-10
	20-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	25-45	5-24

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
GrC2:										
Grenada---------	0-5	Silt loam	CL-ML, ML	A-4	100	100	95-100	90-100	25-31	4-7
	5-20	Silt loam	CL	A-4, A-6	100	100	95-100	90-100	27-40	8-19
	20-26	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	20-30	5-10
	26-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	25-45	5-24
GrC3:										
Grenada---------	0-4	Silt loam	CL-ML, ML	A-4	100	100	95-100	90-100	25-31	4-7
	4-16	Silt loam	CL	A-4, A-6	100	100	95-100	90-100	27-40	8-19
	16-20	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	100	100	95-100	90-100	20-30	5-10
	20-80	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	25-45	5-24
GuF:										
Gullied land.										
Memphis---------	0-5	Silt loam	CL-ML, ML, CL	A-4	100	100	100	90-100	15-30	NP-10
	5-17	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	17-80	Silt loam	CL, ML	A-4, A-6	100	100	100	90-100	30-40	6-15
Ke, Kf:										
Keyespoint------	0-8	Silty clay loam	CH, CL	A-6, A-7	100	100	95-100	85-100	38-55	20-33
	8-36	Silty clay, silty clay loam, clay	CH	A-7	100	100	95-100	90-100	50-80	28-50
	36-80	Fine sandy loam, loam, silt loam	ML, CL-ML, SM, CL	A-4, A-6	100	100	85-100	40-80	15-40	NP-20
KrA, KsA, KuA:										
Kurk------------	0-15	Silt loam	CL, ML, CL-ML	A-4	100	100	95-100	85-95	15-25	NP-10
	15-42	Silty clay loam, silt loam	CL	A-6, A-7	100	100	95-100	85-95	35-50	15-25
	42-80	Silt loam, silty clay loam, loam	CL, CL-ML, ML	A-4, A-6	100	100	90-100	70-95	20-35	3-15
LEVEE.										
Levee										
LoA, LoB:										
Loring----------	0-9	Silt loam	CL, ML, CL-ML	A-4, A-6	100	100	95-100	90-100	15-35	NP-15
	9-31	Silt loam, silty clay loam	ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	32-48	10-20
	31-80	Silt loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
LoB2:										
Loring----------	0-5	Silt loam	ML, CL, CL-ML	A-4, A-6	100	100	95-100	90-100	15-35	NP-15
	5-25	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	32-48	10-20
	25-80	Silt loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
LoB3:										
Loring----------	0-4	Silt loam	ML, CL-ML, CL	A-4, A-6	100	100	95-100	90-100	15-35	NP-15
	4-21	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	32-48	10-20
	21-65	Silt loam	ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
	65-80	Silt loam	CL, ML	A-4, A-6	100	100	95-100	70-100	28-40	7-16
LoC2:										
Loring----------	0-5	Silt loam	CL, CL-ML, ML	A-4, A-6	100	100	95-100	90-100	15-35	NP-15
	5-25	Silt loam, silty clay loam	ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	32-48	10-20
	25-80	Silt loam	ML, CL	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
LoC3:										
Loring----------	0-4	Silt loam	ML, CL-ML, CL	A-4, A-6	100	100	95-100	90-100	15-35	NP-15
	4-21	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	32-48	10-20
	21-48	Silt loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
	48-80	Silt loam	ML, CL	A-4, A-6	100	100	95-100	70-100	28-40	7-16
LoD3:										
Loring----------	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6	100	100	95-100	90-100	15-35	NP-15
	4-20	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	32-48	10-20
	20-38	Silt loam	CL, ML	A-4, A-6, A-7	100	100	95-100	90-100	30-45	10-22
	38-80	Silt loam	ML, CL	A-4, A-6	100	100	95-100	70-100	28-40	7-16
M-W. Miscellaneous Water										
MeA, MeB:										
Memphis---------	0-7	Silt loam	CL, CL-ML, ML	A-4	100	100	100	90-100	15-30	NP-10
	7-31	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	31-80	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
MeB2, MeC2:										
Memphis---------	0-5	Silt loam	CL, CL-ML, ML	A-4	100	100	100	90-100	15-30	NP-10
	5-31	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	31-80	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification Unified	Classification AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
MeC3, MeD3, MeE3:										
Memphis	0-3	Silt loam	CL	A-6, A-4	100	100	90-100	90-100	25-40	15-25
	3-16	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	16-80	Silt loam	ML, CL	A-4, A-6	100	100	100	90-100	30-40	6-15
MmF:										
Memphis	0-6	Silt loam	CL, CL-ML, ML	A-4	100	100	100	90-100	15-30	NP-10
	6-31	Silt loam, silty clay loam	CL	A-6, A-7	100	100	100	90-100	35-48	15-25
	31-80	Silt loam	CL, ML	A-4, A-6	100	100	100	90-100	30-40	6-15
Natchez	0-8	Silt loam	CL, CL-ML, ML	A-4	100	100	100	85-100	15-30	NP-10
	8-80	Silt loam, silt	CL-ML, ML, CL	A-4	100	100	100	85-100	15-30	NP-10
Mo:										
Mhoon	0-9	Silt loam	CL-ML, CL, ML	A-4	100	100	100	95-100	22-30	3-10
	9-80	Silty clay loam, silt loam	CH, CL	A-6, A-7-6	100	100	100	90-98	30-55	11-28
Op, Os:										
Openlake	0-6	Silty clay loam	CH, CL	A-7	100	100	95-100	85-100	45-60	25-35
	6-36	Silty clay, clay	CH	A-7	100	100	95-100	90-100	55-80	33-50
	36-80	Silt loam, silty clay loam, silty clay	CH, CL	A-7	100	100	95-100	85-100	45-60	25-35
Ph, Pp:										
Phillippy	0-10	Silty clay loam	CL, CH	A-6, A-7	100	100	95-100	85-100	38-55	20-33
	10-19	Silty clay, silty clay loam, clay	CH	A-7	100	100	95-100	90-100	50-80	28-50
	19-29	Loam, very fine sandy loam, clay loam	CL, ML, CL-ML	A-4, A-6	100	100	90-100	60-75	25-35	3-12
	29-80	Loamy fine sand, fine sandy loam, loam	SM, SC-SM	A-2, A-3	100	100	75-80	15-40	15-25	NP-5
PtD:										
Pits.										
Udorthents.										
Ra.										
Riverwash										
Rb, Rc, Rf, RmD:										
Robinsonville	0-5	Fine sandy loam	SM, ML	A-4	100	100	85-95	40-55	15-25	NP-3
	5-80	Stratified loamy fine sand to fine sandy loam to silt loam	ML, CL-ML, SM	A-2, A-4	100	95-100	75-95	30-65	15-25	NP-3

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Ro:										
Roellen	0-13	Silty clay	CH, CL	A-7	100	100	95-100	90-100	45-65	20-40
	13-42	Clay, silty clay	CH	A-7	100	100	95-100	90-100	55-80	30-50
	42-80	Silty clay, clay, silty clay loam	CL-ML, CH, CL	A-6, A-7	100	100	95-100	80-95	45-80	18-50
RsA, RtA, RuA:										
Routon	0-15	Silt loam	CL-ML, ML	A-4, A-6	100	100	100	90-100	16-32	3-12
	15-48	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	100	100	100	90-100	20-40	5-17
	48-80	Silt loam	CL-ML, CL, ML	A-4, A-6	100	100	90-100	85-98	16-32	3-12
Sc:										
Sharkey	0-5	Silty clay	CL, CH	A-7	100	100	100	95-100	46-85	22-50
	5-80	Silty clay, clay	CH	A-7-5, A-7-6	100	100	100	95-100	56-85	30-50
Sh, Sk:										
Sharkey	0-5	Silty clay	CH, CL	A-7	100	100	100	95-100	46-85	22-50
	5-80	Silty clay, clay	CH	A-7	100	100	100	95-100	56-85	30-50
Tc, Tu:										
Tunica	0-8	Silty clay	CH	A-7	100	98-100	95-100	90-100	50-92	25-62
	8-33	Clay, silty clay, silty clay loam	CH	A-7	100	98-100	95-100	90-100	50-92	25-62
	33-80	Sandy loam, loam, silt loam, clay loam	ML, CL, CL-ML	A-4, A-6	100	95-100	65-100	40-80	15-40	NP-20
UdC:										
Udorthents.										
Urban land.										
UrB:										
Urban land.										
Udorthents.										
W.										
Water										
Wa, Wm:										
Ware	0-15	Loam	CL, ML, CL-ML	A-4	100	100	95-100	50-70	20-30	2-10
	15-30	Very fine sandy loam, fine sandy loam, loam	ML, CL, CL-ML	A-4	100	100	95-100	50-70	20-30	2-10
	30-80	Stratified sandy loam to fine sandy loam to very fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	100	100	80-100	10-60	15-25	NP-6

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Wr:										
Ware	0-3	Silt loam	CL, CL-ML, ML	A-4	100	100	95-100	75-90	20-30	2-10
	3-13	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	100	100	100	75-90	32-45	11-23
	13-22	Silt loam, loam, fine sandy loam	ML, SM, SC, CL	A-2, A-4	100	100	95-100	55-80	15-30	NP-10
	22-80	Stratified fine sandy loam to very fine sandy loam to loam	CL-ML, ML, SM, SC-SM	A-2, A-4	100	100	95-100	10-60	15-25	NP-6
Ws:										
Ware	0-3	Silt loam	CL, ML, CL-ML	A-4	100	100	95-100	75-90	20-30	2-10
	3-13	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	100	100	100	75-90	32-45	11-23
	13-22	Silt loam, loam, fine sandy loam	SC, SM, ML, CL	A-2, A-4	100	100	95-100	55-80	15-30	NP-10
	22-80	Stratified sand to loamy fine sand to sandy loam to fine sandy loam to very fine sandy loam	CL-ML, SM, ML, SC-SM	A-2, A-4	100	100	95-100	10-60	15-25	NP-6

Table 17.--Physical and Chemical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic Matter" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Soil reaction	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T
	In	Pct	g/cc	In/hr	In/in	pH	Pct	Pct			
Ac, Ad:											
Adler----------------	0-9	10-20	1.50-1.55	0.6-2	0.20-0.23	6.1-7.8	0.0-2.9	0.5-2.0	.43	.43	5
	9-80	5-18	1.50-1.55	0.6-2	0.20-0.23	6.1-7.8	0.0-2.9	---	.43	.43	
Ba, Bd, Be:											
Bardwell------------	0-8	8-25	1.10-1.30	0.6-2	0.18-0.24	5.6-7.8	0.0-2.9	4.0-6.0	.28	.28	5
	8-53	20-35	1.30-1.50	0.6-2	0.16-0.22	5.6-7.8	0.0-2.9	---	.32	.32	
	53-80	8-25	1.30-1.50	0.6-2	0.10-0.16	5.6-7.8	0.0-2.9	---	.28	.28	
Bf:											
Bardwell------------	0-15	27-38	1.10-1.30	0.6-2	0.18-0.24	5.6-7.8	0.0-2.9	4.0-6.0	.28	.28	5
	15-44	15-30	1.30-1.50	0.6-2	0.16-0.22	5.6-7.8	0.0-2.9	---	.32	.32	
	44-80	15-30	1.30-1.50	0.6-2	0.10-0.16	5.6-7.8	0.0-2.9	---	.28	.28	
Bn, Bo:											
Bondurant-----------	0-3	30-40	1.30-1.65	0.2-0.6	0.16-0.20	5.5-7.8	6.0-8.9	1.0-4.0	.37	.37	5
	3-48	38-60	1.35-1.50	0.0015-0.06	0.13-0.18	5.5-7.8	6.0-8.9	---	.32	.32	
	48-72	25-40	1.40-1.55	0.6-2	0.14-0.22	5.5-7.8	0.0-2.9	---	.32	.32	
	72-80	10-25	1.45-1.65	2-6	0.10-0.18	5.5-7.8	0.0-2.9	---	.32	.32	
Br, Bw:											
Bowdre--------------	0-20	40-60	1.40-1.50	0.06-0.2	0.15-0.20	5.6-7.3	6.0-8.9	1.0-3.0	.37	.37	3
	20-24	25-45	1.40-1.50	0.06-0.2	0.15-0.20	5.6-8.4	6.0-8.9	0.0-0.5	.37	.37	
	24-30	15-25	1.50-1.55	0.2-0.6	0.19-0.22	6.1-8.4	0.0-2.9	---	.32	.32	
	30-80	5-15	1.50-1.60	2-6	0.05-0.15	6.1-8.4	0.0-2.9	---	---	---	
CaA:											
Calloway------------	0-30	10-25	1.40-1.55	0.6-2	0.20-0.23	4.5-6.5	0.0-2.9	0.5-2.0	.49	.49	3
	30-60	10-35	1.35-1.55	0.06-0.2	0.09-0.12	4.5-6.0	0.0-2.9	---	.43	.43	
	60-80	16-32	1.45-1.55	0.6-2	0.18-0.22	5.1-7.8	0.0-2.9	---	.43	.43	
CaB2:											
Calloway------------	0-25	10-25	1.40-1.55	0.6-2	0.20-0.23	4.5-6.5	0.0-2.9	0.5-2.0	.49	.49	3
	25-60	10-35	1.35-1.55	0.06-0.2	0.09-0.12	4.5-6.0	0.0-2.9	---	.43	.43	
	60-80	16-32	1.45-1.55	0.6-2	0.18-0.22	5.1-7.8	0.0-2.9	---	.43	.43	
CeA, CfA:											
Center--------------	0-10	12-24	1.35-1.50	0.6-2	0.18-0.22	5.1-6.5	0.0-2.9	1.0-3.0	.49	.49	5
	10-48	20-34	1.30-1.50	0.2-0.6	0.16-0.20	5.1-6.5	0.0-2.9	---	.43	.43	
	48-80	15-25	1.30-1.50	0.2-0.6	0.16-0.20	5.6-7.8	0.0-2.9	---	.49	.49	
Cg:											
Collins-------------	0-12	7-16	1.40-1.50	0.6-2	0.16-0.24	4.5-6.0	0.0-2.9	0.5-2.0	.43	.43	5
	12-80	5-18	1.40-1.50	0.6-2	0.20-0.24	4.5-5.5	0.0-2.9	---	.43	.43	
Ch, Ck, Cm:											
Commerce------------	0-11	14-27	1.35-1.65	0.6-2	0.21-0.23	5.6-8.4	0.0-2.9	0.5-4.0	.43	.43	5
	11-43	18-35	1.35-1.65	0.2-0.6	0.20-0.22	6.1-8.4	3.0-5.9	---	.32	.32	
	43-80	14-30	1.35-1.65	0.2-2	0.20-0.23	6.1-8.4	0.0-2.9	---	.32	.32	
Cn:											
Commerce------------	0-11	27-37	1.25-1.45	0.2-0.6	0.15-0.19	5.6-8.4	3.0-5.9	0.5-4.0	.37	.37	5
	11-43	14-32	1.35-1.65	0.2-0.6	0.20-0.22	6.1-8.4	3.0-5.9	---	.32	.32	
	43-80	14-30	1.35-1.65	0.2-2	0.16-0.20	6.1-8.4	0.0-2.9	---	.32	.32	
Co:											
Commerce------------	0-14	27-37	1.25-1.45	0.2-0.6	0.15-0.19	5.6-8.4	3.0-5.9	0.5-4.0	.37	.37	5
	14-40	14-32	1.35-1.65	0.2-0.6	0.20-0.22	6.1-8.4	3.0-5.9	---	.32	.32	
	40-80	14-30	1.35-1.65	0.2-2	0.16-0.20	6.1-8.4	0.0-2.9	---	.32	.32	

Table 17.--Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Soil reaction	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	pH	Pct	Pct			
Cp, Cr, Cs:											
Convent-------------	0-10	5-18	1.30-1.65	0.6-2	0.18-0.23	5.6-8.4	0.0-2.9	0.5-2.0	.43	.43	5
	10-80	5-18	1.30-1.65	0.6-2	0.20-0.23	5.6-8.4	0.0-2.9	0.5-1.0	.37	.37	
Ct, Cu:											
Convent-------------	0-10	5-18	1.30-1.65	0.6-2	0.18-0.23	5.6-8.4	0.0-2.9	0.5-2.0	.43	.43	5
	10-80	5-18	1.30-1.65	0.6-2	0.20-0.23	5.6-8.4	0.0-2.9	0.5-1.0	.37	.37	
Mhoon---------------	0-9	14-27	1.35-1.65	0.6-2	0.21-0.23	6.1-7.8	0.0-2.9	2.0-4.0	.43	.43	5
	9-80	14-35	1.35-1.70	0.06-0.2	0.11-0.23	6.1-8.4	3.0-5.9	---	.37	.37	
Cv, Cw:											
Crevasse------------	0-7	5-10	1.45-1.55	6-20	0.06-0.10	5.6-8.4	0.0-2.9	0.5-2.0	.10	.10	5
	7-80	2-8	1.40-1.50	6-20	0.02-0.06	5.6-8.4	0.0-2.9	---	.15	.15	
Cx:											
Crevasse------------	0-4	12-17	1.35-1.55	0.6-2	0.16-0.22	5.6-8.4	0.0-2.9	0.5-2.0	.32	.32	5
	4-7	12-17	1.40-1.70	2-6	0.10-0.20	5.6-8.4	0.0-2.9	---	.32	.32	
	7-80	2-8	1.40-1.50	6-20	0.02-0.06	5.6-8.4	0.0-2.9	---	.15	.15	
De, Dk:											
Dekoven-------------	0-20	14-27	1.20-1.40	0.6-2	0.18-0.23	6.1-7.8	0.0-2.9	2.0-6.0	.32	.32	5
	20-80	18-35	1.25-1.50	0.6-2	0.18-0.23	6.1-7.8	0.0-2.9	---	.37	.37	
Do, Dv:											
Dekoven-------------	0-34	14-27	1.20-1.40	0.6-2	0.18-0.23	6.1-7.8	0.0-2.9	1.0-4.0	.32	.32	5
	34-80	18-35	1.25-1.50	0.6-2	0.18-0.23	6.1-7.8	0.0-2.9	---	.37	.37	
Fa:											
Falaya--------------	0-52	6-18	1.25-1.45	0.6-2	0.20-0.22	4.5-5.5	0.0-2.9	0.5-3.0	.49	.49	5
	52-80	19-32	1.25-1.50	0.06-2	0.14-0.22	4.5-5.5	0.0-2.9	---	.43	.43	
Fc:											
Falaya--------------	0-52	6-18	1.25-1.45	0.6-2	0.20-0.22	4.5-5.5	0.0-2.9	0.5-3.0	.49	.49	5
	52-80	19-32	1.25-1.50	0.06-2	0.14-0.22	4.5-5.5	0.0-2.9	---	.43	.43	
Waverly-------------	0-10	6-18	1.40-1.50	0.6-2	0.20-0.22	4.5-5.5	0.0-2.9	1.0-3.0	.43	.43	5
	10-80	10-18	1.40-1.55	0.6-2	0.20-0.22	4.5-5.5	0.0-2.9	---	.43	.43	
FnA, FnB:											
Feliciana-----------	0-8	8-22	1.30-1.50	0.6-2	0.20-0.23	5.1-7.0	0.0-2.9	1.0-4.0	.49	.49	5
	8-35	20-32	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	35-80	12-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
FnB2, FnC2:											
Feliciana-----------	0-5	8-22	1.30-1.50	0.6-2	0.20-0.23	5.1-7.0	0.0-2.9	1.0-4.0	.49	.49	5
	5-17	22-32	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	17-80	12-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
FnC3:											
Feliciana-----------	0-6	8-22	1.30-1.50	0.6-2	0.20-0.23	5.1-7.0	0.0-2.9	1.0-4.0	.49	.49	5
	6-15	22-32	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	15-80	12-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
FnD3, FnE3:											
Feliciana-----------	0-4	8-22	1.30-1.50	0.6-2	0.20-0.23	5.1-7.0	0.0-2.9	1.0-4.0	.49	.49	5
	4-12	22-32	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	12-80	12-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
GrA, GrB:											
Grenada-------------	0-7	12-16	1.40-1.50	0.6-2	0.20-0.23	4.5-7.3	0.0-2.9	0.5-2.0	.49	.49	3
	7-24	18-25	1.40-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.43	.43	
	24-30	10-32	1.45-1.60	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
	30-80	18-32	1.45-1.60	0.06-0.2	0.10-0.12	5.1-7.3	0.0-2.9	---	.37	.37	

Table 17.--Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Soil reaction	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	pH	Pct	Pct			
GrB2:											
Grenada-------------	0-5	12-16	1.40-1.50	0.6-2	0.20-0.23	4.5-7.3	0.0-2.9	0.5-2.0	.49	.49	3
	5-20	18-25	1.40-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.43	.43	
	20-26	10-32	1.45-1.60	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
	26-80	18-32	1.45-1.60	0.06-0.2	0.10-0.12	5.1-7.3	0.0-2.9	---	.37	.37	
GrB3:											
Grenada-------------	0-4	12-16	1.40-1.50	0.6-2	0.20-0.23	4.5-7.3	0.0-2.9	0.5-2.0	.49	.49	3
	4-16	18-25	1.40-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.43	.43	
	16-20	10-32	1.45-1.60	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
	20-80	18-32	1.45-1.60	0.06-0.2	0.10-0.12	5.1-7.3	0.0-2.9	---	.37	.37	
GrC2:											
Grenada-------------	0-5	12-16	1.40-1.50	0.6-2	0.20-0.23	4.5-7.3	0.0-2.9	0.5-2.0	.49	.49	3
	5-20	18-25	1.40-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.43	.43	
	20-26	10-32	1.45-1.60	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
	26-80	18-32	1.45-1.60	0.06-0.2	0.10-0.12	5.1-7.3	0.0-2.9	---	.37	.37	
GrC3:											
Grenada-------------	0-4	12-16	1.40-1.50	0.6-2	0.20-0.23	4.5-7.3	0.0-2.9	0.5-2.0	.49	.49	3
	4-16	18-25	1.40-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.43	.43	
	16-20	10-32	1.45-1.60	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
	20-80	18-32	1.45-1.60	0.06-0.2	0.10-0.12	5.1-7.3	0.0-2.9	---	.37	.37	
GuF:											
Gullied land.											
Memphis-------------	0-5	8-22	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	1.0-2.0	.49	.49	5
	5-17	20-30	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	17-80	12-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
Ke, Kf:											
Keyespoint----------	0-8	27-40	1.35-1.55	0.2-0.6	0.16-0.20	5.6-7.9	3.0-5.9	1.0-4.0	.37	.37	5
	8-36	35-60	1.30-1.50	0.0015-0.06	0.13-0.18	5.6-7.9	6.0-8.9	---	.32	.32	
	36-80	10-27	1.40-1.55	0.6-2	0.14-0.18	5.6-7.9	0.0-2.9	---	.32	.32	
KrA, KsA, KuA:											
Kurk----------------	0-15	12-22	1.30-1.50	0.6-2	0.20-0.24	5.1-7.3	0.0-2.9	0.5-3.0	.49	---	5
	15-42	22-35	1.40-1.60	0.2-0.6	0.16-0.20	4.5-7.3	0.0-2.9	---	.43	---	
	42-80	15-30	1.50-1.70	0.2-0.6	0.06-0.20	5.1-7.8	0.0-2.9	---	.43	---	
LEVEE.											
Levee											
LoA, LoB:											
Loring--------------	0-9	8-18	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	0.5-2.0	.49	.49	3
	9-31	18-32	1.40-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.43	.43	
	31-80	15-27	1.45-1.60	0.2-0.6	0.16-0.20	4.5-6.0	0.0-2.9	---	.43	.43	
LoB2:											
Loring--------------	0-5	8-18	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	0.5-2.0	.49	.49	3
	5-25	18-32	1.40-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.43	.43	
	25-80	15-27	1.45-1.60	0.2-0.6	0.16-0.20	4.5-6.0	0.0-2.9	---	.43	.43	
LoB3:											
Loring--------------	0-4	8-18	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	0.5-2.0	.49	.49	3
	4-21	18-32	1.40-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.43	.43	
	21-65	15-27	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	0.0-2.9	---	.43	.43	
	65-80	10-25	1.30-1.60	0.2-2	0.06-0.13	4.5-6.5	0.0-2.9	---	.43	.43	
LoC2:											
Loring--------------	0-5	8-18	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	0.5-2.0	.49	.49	3
	5-25	18-32	1.40-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.43	.43	
	25-80	15-27	1.45-1.60	0.2-0.6	0.16-0.20	4.5-6.0	0.0-2.9	---	.43	.43	

Table 17.--Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Soil reaction	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	pH	Pct	Pct			
LoC3:											
Loring--------------	0-4	8-18	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	0.5-2.0	.49	.49	3
	4-21	18-32	1.40-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.43	.43	
	21-48	15-27	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	0.0-2.9	---	.43	.43	
	48-80	10-25	1.30-1.60	0.2-2	0.06-0.13	4.5-6.5	0.0-2.9	---	.43	.43	
LoD3:											
Loring--------------	0-4	8-18	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	0.5-2.0	.49	.49	3
	4-20	18-32	1.40-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.43	.43	
	20-38	15-27	1.50-1.70	0.06-0.2	0.06-0.13	4.5-6.0	0.0-2.9	---	.43	.43	
	38-80	10-25	1.30-1.60	0.2-2	0.06-0.13	4.5-6.5	0.0-2.9	---	.43	.43	
M-W.											
Miscellaneous Water											
MeA, MeB:											
Memphis-------------	0-7	8-22	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	1.0-2.0	.49	.49	5
	7-31	20-32	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	31-80	15-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
MeB2, MeC2:											
Memphis-------------	0-5	8-22	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	1.0-2.0	.49	.49	5
	5-31	20-32	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	31-80	15-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
MeC3, MeD3, MeE3:											
Memphis-------------	0-3	15-25	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	1.0-2.0	.49	.49	5
	3-16	20-32	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	16-80	14-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
MmF:											
Memphis-------------	0-6	8-22	1.30-1.50	0.6-2	0.20-0.23	4.5-7.0	0.0-2.9	1.0-2.0	.49	.49	5
	6-31	20-30	1.30-1.50	0.6-2	0.20-0.22	4.5-6.0	0.0-2.9	---	.49	.49	
	31-80	12-25	1.30-1.50	0.6-2	0.20-0.23	4.5-6.0	0.0-2.9	---	.49	.49	
Natchez-------------	0-8	8-18	1.30-1.45	0.6-2	0.20-0.24	5.1-7.3	0.0-2.9	0.5-3.0	.49	.49	5
	8-80	8-18	1.30-1.45	0.6-2	0.20-0.24	5.1-7.3	0.0-2.9	---	.49	.49	
Mo:											
Mhoon---------------	0-9	14-27	1.35-1.65	0.6-2	0.21-0.23	6.1-7.8	0.0-2.9	2.0-4.0	.43	.43	5
	9-80	14-35	1.35-1.70	0.06-0.2	0.11-0.23	6.1-8.4	3.0-5.9	---	.37	.37	
Op, Os:											
Openlake------------	0-6	30-40	1.30-1.65	0.2-0.6	0.16-0.20	6.5-7.8	6.0-8.9	1.0-4.0	.37	.37	5
	6-36	40-60	1.35-1.60	0.0015-0.06	0.13-0.17	6.5-7.8	6.0-8.9	---	.32	.32	
	36-80	25-45	1.30-1.65	0.2-0.6	0.16-0.20	6.5-7.8	6.0-8.9	---	.37	.37	
Ph, Pp:											
Phillippy-----------	0-10	27-40	1.35-1.55	0.2-0.6	0.16-0.20	5.6-7.8	3.0-5.9	1.0-4.0	.37	.37	5
	10-19	35-60	1.30-1.50	0.0015-0.06	0.13-0.18	5.1-7.8	6.0-8.9	---	.32	.32	
	19-29	15-30	1.50-1.55	0.6-2	0.19-0.22	5.1-7.8	0.0-2.9	---	.32	.32	
	29-80	5-15	1.40-1.50	2-6	0.05-0.15	5.6-8.4	0.0-2.9	---	.28	.28	
PtD:											
Pits.											
Udorthents.											
Ra.											
Riverwash											
Rb, Rc, Rf, RmD:											
Robinsonville-------	0-5	2-10	1.40-1.50	2-6	0.15-0.18	6.1-8.4	0.0-2.9	0.5-2.0	.28	.28	5
	5-80	5-15	1.50-1.60	0.6-6	0.14-0.18	6.1-8.4	0.0-2.9	---	.32	.32	

Table 17.--Physical and Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Soil reaction	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	pH	Pct	Pct			
Ro:											
Roellen	0-13	40-55	1.40-1.55	0.06-0.2	0.15-0.19	6.6-8.4	6.0-8.9	2.0-5.0	.32	.32	5
	13-42	40-60	1.40-1.55	0.06-0.2	0.14-0.17	6.1-8.4	6.0-8.9	1.0-2.0	.28	.28	
	42-80	35-60	1.40-1.60	0.06-2	0.14-0.20	6.6-8.4	6.0-8.9	0.5-1.0	.28	.28	
RsA, RtA:											
Routon	0-15	10-25	1.40-1.55	0.6-2	0.20-0.24	4.5-6.5	0.0-2.9	0.5-2.0	.49	.49	5
	15-48	18-32	1.35-1.50	0.06-0.2	0.18-0.22	4.5-6.5	0.0-2.9	---	.49	.49	
	48-80	15-27	1.35-1.55	0.06-0.2	0.20-0.24	5.1-7.3	0.0-2.9	---	.49	.49	
RuA:											
Routon	0-15	10-24	1.40-1.55	0.6-2	0.20-0.24	4.5-6.5	0.0-2.9	0.5-2.0	.49	.49	5
	15-48	18-32	1.35-1.50	0.06-0.2	0.18-0.22	4.5-6.5	0.0-2.9	---	.49	.49	
	48-80	15-27	1.35-1.55	0.06-0.2	0.20-0.24	5.1-7.3	0.0-2.9	---	.49	.49	
Sc, Sh, Sk:											
Sharkey	0-5	40-60	1.20-1.50	0.0000-0.06	0.12-0.18	6.0-8.4	6.0-8.9	0.5-4.0	.32	.32	5
	5-80	45-65	1.20-1.50	0.0000-0.06	0.07-0.14	6.0-8.4	6.0-8.9	---	.28	.28	
Tc, Tu:											
Tunica	0-8	40-60	1.45-1.55	0.0000-0.06	0.15-0.20	5.6-7.8	6.0-8.9	1.0-3.0	.32	.32	5
	8-33	35-60	1.45-1.55	0.0000-0.06	0.15-0.20	5.6-7.8	6.0-8.9	---	.32	.32	
	33-80	10-30	1.40-1.50	0.06-2	0.10-0.22	5.6-8.4	0.0-2.9	---	.32	.32	
UdC:											
Udorthents.											
Urban land.											
UrB:											
Urban land.											
Udorthents.											
W.											
Water											
Wa, Wm:											
Ware	0-15	12-25	1.40-1.70	0.6-2	0.18-0.22	5.6-8.4	0.0-2.9	2.0-3.0	.32	.32	4
	15-30	12-20	1.40-1.70	0.6-2	0.14-0.18	5.6-8.4	0.0-2.9	0.2-0.5	.32	.32	
	30-80	8-18	1.60-1.70	2-20	0.07-0.18	6.1-7.8	0.0-2.9	0.2-0.5	.28	.28	
Wr, Ws:											
Ware	0-3	20-26	1.40-1.70	0.6-2	0.20-0.24	5.6-8.4	0.0-2.9	2.0-3.0	.43	.43	4
	3-13	25-35	1.35-1.65	0.2-0.6	0.20-0.22	6.1-8.4	3.0-5.9	---	.37	.37	
	13-22	15-25	1.30-1.50	0.6-2	0.10-0.16	5.6-7.8	0.0-2.9	---	.32	.32	
	22-80	8-18	1.60-1.70	2-20	0.07-0.19	6.1-7.8	0.0-2.9	---	.28	.28	

Table 18.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Ac:									
Adler	C								
		Jan-Apr	2.0-3.0	>6.0	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
Ad:									
Adler	C								
		Jan-Apr	2.0-3.0	>6.0	---	---	None	Brief	Occasional
		May-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare
Ba:									
Bardwell	B								
		Jan-Mar	3.0-6.0	>6.0	---	---	None	---	None
		Apr-Dec	---	---	---	---	None	---	None
Bd:									
Bardwell	B								
		Jan	3.0-6.0	>6.0	---	---	None	---	Rare
		Feb-Mar	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		Apr-May	---	---	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	---	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare
Be:									
Bardwell	B								
		Jan	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		Feb-Mar	3.0-6.0	>6.0	---	---	None	Long	Frequent
		Apr	---	---	---	---	None	Long	Occasional
		May-Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare
Bf:									
Bardwell	B								
		Jan	3.0-6.0	>6.0	---	---	None	---	Rare
		Feb	3.0-6.0	>6.0	---	---	None	Brief	Frequent
		Mar	3.0-6.0	>6.0	---	---	None	Long	Frequent
		Apr-Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare
Bn:									
Bondurant	D								
		Jan-May	1.0-2.0	2.0-3.0	---	---	None	---	None
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.0-2.0	2.0-3.0	---	---	None	---	None

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Bo:									
Bondurant	D								
		Jan	1.0-2.0	2.0-3.0	---	---	None	Long	Occasional
		Feb-Apr	1.0-2.0	2.0-3.0	---	---	None	Long	Frequent
		May	1.0-2.0	2.0-3.0	---	---	None	Long	Occasional
		Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	Brief	Rare
		Aug-Oct	---	---	---	---	None	---	None
		Nov	---	---	---	---	None	---	Rare
		Dec	1.0-2.0	2.0-3.0	---	---	None	---	Rare
Br:									
Bowdre	C								
		Jan-May	1.2-1.7	>6.0	---	---	None	---	None
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.2-1.7	>6.0	---	---	None	---	None
Bw:									
Bowdre	C								
		Jan	1.2-1.7	>6.0	---	---	None	Long	Occasional
		Feb-Mar	1.2-1.7	>6.0	---	---	None	Long	Frequent
		Apr-May	1.2-1.7	>6.0	---	---	None	Long	Occasional
		Jun-Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.2-1.7	>6.0	---	---	None	Brief	Occasional
CaA, CaB2:									
Calloway	C								
		Jan-Apr	1.0-1.5	1.5-3.0	---	---	None	---	None
		May-Nov	---	---	---	---	None	---	None
		Dec	1.0-1.5	1.5-3.0	---	---	None	---	None
CeA:									
Center	C								
		Jan-Apr	1.5-3.0	>6.0	---	---	None	---	None
		May-Nov	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	---	---	None	---	None
CfA:									
Center	C								
		Jan	1.5-3.0	>6.0	---	---	None	Brief	Rare
		Feb	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		Mar	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Apr	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	Brief	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	---	---	None	---	None
Cg:									
Collins	C								
		Jan-Apr	2.0-5.0	>6.0	---	---	None	Very brief	Occasional
		May-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare
Ch:									
Commerce	C								
		Jan-Apr	1.5-3.0	>6.0	---	---	None	---	None
		May-Nov	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	---	---	None	---	None

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Ck:									
Commerce	C								
		Jan	1.5-3.0	>6.0	---	---	None	---	Rare
		Feb-Mar	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Apr	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun-Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	---	---	None	---	Rare
Cm:									
Commerce	C								
		Jan	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Feb-Apr	1.5-3.0	>6.0	---	---	None	Long	Frequent
		May	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Oct	---	---	---	---	None	---	None
		Nov	---	---	---	---	None	---	Rare
		Dec	1.5-3.0	>6.0	---	---	None	Brief	Occasional
Cn:									
Commerce	C								
		Jan	1.5-3.0	>6.0	---	---	None	---	Rare
		Feb-Mar	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Apr	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun-Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	---	---	None	---	Rare
Co:									
Commerce	C								
		Jan	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Feb-Apr	1.5-3.0	>6.0	---	---	None	Long	Frequent
		May	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Oct	---	---	---	---	None	---	None
		Nov	---	---	---	---	None	---	Rare
		Dec	1.5-3.0	>6.0	---	---	None	Brief	Occasional
Cp:									
Convent	C								
		Jan-May	1.5-4.0	>6.0	---	---	None	---	None
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.5-4.0	>6.0	---	---	None	---	None
Cr:									
Convent	C								
		Jan-Apr	1.5-4.0	>6.0	---	---	None	Brief	Occasional
		May	1.5-4.0	>6.0	---	---	None	---	Rare
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.5-4.0	>6.0	---	---	None	---	Rare

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Cs:									
Convent	C								
		Jan	1.5-4.0	>6.0	---	---	None	Brief	Occasional
		Feb-Apr	1.5-4.0	>6.0	---	---	None	Long	Frequent
		May	1.5-4.0	>6.0	---	---	None	Long	Occasional
		Jun	1.5-4.0	>6.0	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.5-4.0	>6.0	---	---	None	Brief	Occasional
Ct:									
Convent	C								
		Jan-Apr	1.5-4.0	>6.0	---	---	None	Brief	Occasional
		May	1.5-4.0	>6.0	---	---	None	---	Rare
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.5-1.7	>6.0	---	---	None	---	Rare
Mhoon	D								
		Jan-May	0.0-3.0	>6.0	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	---	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	0.0-3.0	>6.0	---	---	None	---	Rare
Cu:									
Convent	C								
		Jan	1.5-4.0	>6.0	---	---	None	Brief	Occasional
		Feb-Apr	1.5-4.0	>6.0	---	---	None	Long	Frequent
		May	1.5-4.0	>6.0	---	---	None	Long	Occasional
		Jun	1.5-4.0	>6.0	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.5-4.0	>6.0	---	---	None	---	Rare
Mhoon	D								
		Jan	0.0-3.0	>6.0	---	---	None	Brief	Occasional
		Feb-Apr	0.0-3.0	>6.0	---	---	None	Long	Frequent
		May	0.0-3.0	>6.0	---	---	None	Long	Occasional
		Jun	0.0-3.0	>6.0	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	0.0-3.0	>6.0	---	---	None	---	Rare
Cv:									
Crevasse	A								
		Jan	3.5-6.0	>6.0	---	---	None	---	Rare
		Feb-Mar	3.5-6.0	>6.0	---	---	None	Brief	Occasional
		Apr-May	---	---	---	---	None	Brief	Occasional
		June	---	---	---	---	None	---	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	3.5-6.0	>6.0	---	---	None	---	Rare
Cw:									
Crevasse	A								
		Jan	3.5-6.0	>6.0	---	---	None	Brief	Occasional
		Feb-Mar	3.5-6.0	>6.0	---	---	None	Long	Frequent
		Apr	---	---	---	---	None	Long	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	---	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	3.5-6.0	>6.0	---	---	None	---	Rare

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Cx:									
Crevasse------------------	A								
		Jan	3.5-6.0	>6.0	---	---	None	Long	Occasional
		Feb-Mar	3.5-6.0	>6.0	---	---	None	Long	Frequent
		Apr-May	---	---	---	---	None	Long	Occasional
		Jun	---	---	---	---	None	---	Rare
		Jul-Oct	---	---	---	---	None	---	None
		Nov	3.5-6.0	>6.0	---	---	None	---	None
		Dec	3.5-6.0	>6.0	---	---	None	---	Rare
De:									
Dekoven-------------------	D								
		Jan-May	1.0-2.0	>6.0	---	---	None	Brief	Occasional
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.0-2.0	>6.0	---	---	None	---	Rare
Dk:									
Dekoven-------------------	D								
		Jan	1.0-2.0	>6.0	---	---	None	Brief	Occasional
		Feb-Apr	1.0-2.0	>6.0	---	---	None	Long	Frequent
		May	1.0-2.0	>6.0	---	---	None	Long	Occasional
		Jun	1.0-2.0	>6.0	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.0-2.0	>6.0	---	---	None	Brief	Occasional
Do:									
Dekoven-------------------	D								
		Jan-Apr	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	---	---	None	---	Rare
Dv:									
Dekoven-------------------	D								
		Jan	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		Feb-Apr	1.5-3.0	>6.0	---	---	None	Long	Frequent
		May	1.5-3.0	>6.0	---	---	None	Long	Occasional
		Jun	1.5-3.0	>6.0	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.5-3.0	>6.0	---	---	None	Brief	Occasional
Fa:									
Falaya--------------------	D								
		Jan-Apr	1.0-2.0	>6.0	---	---	None	Very brief	Occasional
		May-Nov	---	---	---	---	None	---	None
		Dec	1.0-2.0	>6.0	---	---	None	Very brief	Occasional
Fc:									
Falaya--------------------	D								
		Jan-Apr	1.0-2.0	>6.0	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	---	Rare
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.0-2.0	>6.0	---	---	None	Very brief	Occasional
Waverly-------------------	D								
		Jan-Apr	0.5-1.0	>6.0	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	---	Rare
		Jun-Nov	---	---	---	---	None	---	None
		Dec	0.5-1.0	>6.0	---	---	None	Very brief	Occasional

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
FnA, FnB, FnB2, FnC2, FnC3, FnD3, FnE3:									
Feliciana	B								
		Jan-Dec	---	---	---	---	None	---	None
GrA, GrB, GrB2:									
Grenada	C								
		Jan-Apr	1.8-2.5	2.2-3.0	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
GrB3:									
Grenada	C								
		Jan-Apr	1.5-2.0	1.7-2.2	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
GrC2:									
Grenada	C								
		Jan-Apr	1.8-2.5	2.2-3.0	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
GrC3:									
Grenada	C								
		Jan-Apr	1.5-2.0	1.7-2.2	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
GuF:									
Gullied land.									
Memphis	B								
		Jan-Dec	---	---	---	---	None	---	None
Ke:									
Keyespoint	D								
		Jan-May	1.0-2.0	2.0-3.0	---	---	None	---	None
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.0-2.0	2.0-3.0	---	---	None	---	None
Kf:									
Keyespoint	D								
		Jan	1.0-2.0	2.0-3.0	---	---	None	Long	Occasional
		Feb-May	1.0-2.0	2.0-3.0	---	---	None	Long	Frequent
		Jun	1.0-2.0	2.0-3.0	---	---	None	Long	Occasional
		Jul	---	---	---	---	None	Brief	Occasional
		Aug-Oct	---	---	---	---	None	---	None
		Nov	---	---	---	---	None	---	Rare
		Dec	1.0-2.0	2.0-3.0	---	---	None	Brief	Occasional
KrA:									
Kurk	C								
		Jan-Apr	1.2-1.7	2.5-5.5	---	---	None	---	None
		May-Nov	---	---	---	---	None	---	None
		Dec	1.2-1.7	2.5-5.5	---	---	None	---	None
KsA:									
Kurk	C								
		Jan	1.2-1.7	2.5-5.5	---	---	None	Brief	Rare
		Feb	1.2-1.7	2.5-5.5	---	---	None	Brief	Occasional
		Mar	1.2-1.7	2.5-5.5	---	---	None	Long	Occasional
		Apr-May	1.2-1.7	2.5-5.5	---	---	None	Brief	Occasional
		June	---	---	---	---	None	Brief	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	1.2-1.7	2.5-5.5	---	---	None	---	None

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
KuA:									
Kurk----------------------	C								
		Jan	1.2-1.7	2.5-5.5	---	---	None	Brief	Occasional
		Feb-Apr	1.2-1.7	2.5-5.5	---	---	None	Long	Frequent
		May	1.2-1.7	2.5-5.5	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	1.2-1.7	2.5-5.5	---	---	None	---	Rare
LEVEE.									
Levee									
LoA, LoB, LoB2:									
Loring--------------------	C								
		Jan-Mar	1.7-2.8	2.0-2.9	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		Dec	1.7-2.8	2.0-2.9	---	---	None	---	None
LoB3:									
Loring--------------------	C								
		Jan-Mar	1.5-1.8	1.7-2.0	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		Dec	1.5-1.8	1.7-2.0	---	---	None	---	None
LoC2:									
Loring--------------------	C								
		Jan-Mar	1.7-2.8	2.0-2.9	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		Dec	1.7-2.8	2.0-2.9	---	---	None	---	None
LoC3, LoD3:									
Loring--------------------	C								
		Jan-Mar	1.5-1.8	1.7-2.0	---	---	None	---	None
		Apr-Nov	---	---	---	---	None	---	None
		Dec	1.5-1.8	1.7-2.0	---	---	None	---	None
M-W.									
Miscellaneous Water									
MeA, MeB, MeB2, MeC2, MeC3, MeD3, MeE3:									
Memphis------------------	B								
		Jan-Dec	---	---	---	---	None	---	None
MmF:									
Memphis-------------------	B								
		Jan-Dec	---	---	---	---	None	---	None
Natchez-------------------	B								
		Jan-Dec	---	---	---	---	None	---	None
Mo:									
Mhoon---------------------	D								
		Jan-Jul	0.0	>6.0	0.2-4.0	Very long	Frequent	---	None
		Aug-Nov	0.0	>6.0	0.0-4.0	Long	Frequent	---	None
		Dec	0.0	>6.0	0.2-4.0	Very long	Frequent	---	None
Op:									
Openlake------------------	D								
		Jan-May	1.0-2.0	2.0-3.0	---	---	None	---	None
		Jun-Nov	---	---	---	---	None	---	None
		Dec	1.0-2.0	2.0-3.0	---	---	None	---	None

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Os:									
Openlake	D								
		Jan	1.0-2.0	2.0-3.0	---	---	None	Long	Occasional
		Feb-Apr	1.0-2.0	2.0-3.0	---	---	None	Long	Frequent
		May	1.0-2.0	2.0-3.0	---	---	None	Long	Occasional
		Jun	---	---	---	---	None	Long	Occasional
		Jul	---	---	---	---	None	Brief	Occasional
		Aug-Oct	---	---	---	---	None	---	None
		Nov	---	---	---	---	None	---	Rare
		Dec	1.0-2.0	2.0-3.0	---	---	None	Brief	Occasional
Ph:									
Phillippy	C								
		Jan-Apr	2.0-4.0	>6.0	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
Pp:									
Phillippy	C								
		Jan	2.0-4.0	>6.0	---	---	None	Brief	Occasional
		Feb-Mar	2.0-4.0	>6.0	---	---	None	Long	Frequent
		Apr	2.0-4.0	>6.0	---	---	None	Long	Occasional
		May-Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare
PtD:									
Pits.									
Udorthents.									
Ra:									
Riverwash	D								
		Jan	---	---	---	---	None	Long	Frequent
		Feb-May	---	---	---	---	None	Very long	Frequent
		Jun	---	---	---	---	None	Long	Frequent
		Jul-Dec	---	---	---	---	None	Long	Occasional
Rb:									
Robinsonville	B								
		Jan-Apr	4.0-6.0	>6.0	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
Rc:									
Robinsonville	B								
		Jan	4.0-6.0	>6.0	---	---	None	---	Rare
		Feb-Apr	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun-Dec	---	---	---	---	None	---	None
Rf:									
Robinsonville	B								
		Jan	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		Feb-Mar	4.0-6.0	>6.0	---	---	None	Brief	Frequent
		Apr	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	---	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
RmD:									
Robinsonville	B								
		Jan	4.0-6.0	>6.0	---	---	None	---	Rare
		Feb-May	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		Jun-Dec	---	---	---	---	None	---	None
Ro:									
Roellen	D								
		Jan	0.0-1.0	1.5-2.5	---	---	None	Brief	Occasional
		Feb-Mar	0.0-1.0	1.5-2.5	---	---	None	Long	Occasional
		Apr	0.0-1.0	1.5-2.5	---	---	None	Brief	Occasional
		May-Jun	---	---	---	---	None	Brief	Occasional
		Jul-Nov	---	---	---	---	None	---	None
		Dec	0.0-1.0	1.5-2.5	---	---	None	Brief	Occasional
RsA:									
Routon	D								
		Jan-May	0.0-1.0	3.5-6.0	---	---	None	---	None
		Jun-Nov	---	---	---	---	None	---	None
		Dec	0.0-1.0	3.5-6.0	---	---	None	---	None
RtA:									
Routon	D								
		Jan	0.0-1.0	3.5-6.0	---	---	None	---	Rare
		Feb-May	0.0-1.0	3.5-6.0	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	---	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	0.0-1.0	3.5-6.0	---	---	None	---	None
RuA:									
Routon	D								
		Jan	0.0-1.0	3.5-6.0	---	---	None	Brief	Occasional
		Feb-Apr	0.0-1.0	3.5-6.0	---	---	None	Long	Frequent
		May	0.0-1.0	3.5-6.0	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	Brief	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Nov	---	---	---	---	None	---	None
		Dec	0.0-1.0	3.5-6.0	---	---	None	---	Rare
Sc:									
Sharkey	D								
		Jan-Jul	0.0	1.5-2.5	0.5-4.0	Very long	Frequent	---	None
		Aug-Nov	0.0	1.5-2.5	0.0-4.0	Long	Frequent	---	None
		Dec	0.0	1.5-2.5	0.5-4.0	Very long	Frequent	---	None
Sh:									
Sharkey	D								
		Jan-Jun	0.0-1.5	1.5-2.5	---	---	None	---	None
		Jul-Nov	---	---	---	---	None	---	None
		Dec	0.0-1.5	1.5-2.5	---	---	None	---	None
Sk:									
Sharkey	D								
		Jan	0.0-1.5	1.5-2.5	---	---	None	Long	Occasional
		Feb-May	0.0-1.5	1.5-2.5	---	---	None	Long	Frequent
		Jun	0.0-1.5	1.5-2.5	---	---	None	Long	Occasional
		Jul	---	---	---	---	None	Brief	Occasional
		Aug-Oct	---	---	---	---	None	---	None
		Nov	---	---	---	---	None	---	Rare
		Dec	0.0-1.5	1.5-2.5	---	---	None	Long	Occasional

Table 18.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Tc:									
Tunica--------------------	D								
		Jan-May	0.0-1.5	1.5-3.0	---	---	None	---	None
		Jun-Nov	---	---	---	---	None	---	None
		Dec	0.0-1.5	1.5-3.0	---	---	None	---	None
Tu:									
Tunica--------------------	D								
		Jan	0.0-1.5	1.5-3.0	---	---	None	Long	Occasional
		Feb-Apr	0.0-1.5	1.2-3.0	---	---	None	Long	Frequent
		May-Jun	0.0-1.5	1.5-2.0	---	---	None	Long	Occasional
		Jul	---	---	---	---	None	---	Rare
		Aug-Oct	---	---	---	---	None	---	None
		Nov	---	---	---	---	None	---	Rare
		Dec	0.0-1.5	1.5-3.0	---	---	None	Brief	Occasional
UdC:									
Udorthents.									
Urban land.									
UrB:									
Urban land.									
Udorthents.									
W.									
Water									
Wa:									
Ware----------------------	B								
		Jan-Apr	3.0-5.0	>6.0	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
Wm:									
Ware----------------------	B								
		Jan	3.0-5.0	>6.0	---	---	None	---	Rare
		Feb-May	3.0-5.0	>6.0	---	---	None	Brief	Occasional
		Jun-Dec	---	---	---	---	None	---	None
Wr:									
Ware----------------------	B								
		Jan-Apr	3.0-5.0	>6.0	---	---	None	---	None
		May-Dec	---	---	---	---	None	---	None
Ws:									
Ware----------------------	B								
		Jan	3.0-5.0	>6.0	---	---	None	Brief	Occasional
		Feb-Mar	3.0-5.0	>6.0	---	---	None	Long	Frequent
		Apr	3.0-5.0	>6.0	---	---	None	Long	Occasional
		May	---	---	---	---	None	Brief	Occasional
		Jun	---	---	---	---	None	---	Rare
		Jul-Nov	---	---	---	---	None	---	None
		Dec	---	---	---	---	None	---	Rare

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	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In			
Ac, Ad:						
Adler	---	---	---	None	Moderate	Low
Ba, Bd, Be, Bf:						
Bardwell	---	---	---	None	Low	Moderate
Bn, Bo:						
Bondurant	---	---	---	None	High	Low
Br, Bw:						
Bowdre	---	---	---	None	High	Low
CaA, CaB2:						
Calloway	Fragipan	24-38	24-48	None	High	Moderate
CeA, CfA:						
Center	---	---	---	None	High	Moderate
Cg:						
Collins	---	---	---	None	Moderate	Moderate
Ch, Ck, Cm, Cn, Co:						
Commerce	---	---	---	None	High	Low
Cp, Cr, Cs:						
Convent	---	---	---	None	High	Low
Ct, Cu:						
Convent	---	---	---	None	High	Low
Mhoon	---	---	---	None	High	Low
Cv, Cw, Cx:						
Crevasse	---	---	---	None	Low	Moderate
De, Dk:						
Dekoven	---	---	---	None	High	Low
Do, Dv:						
Dekoven	---	---	---	None	Moderate	Low
Fa:						
Falaya	---	---	---	None	High	Moderate
Fc:						
Falaya	---	---	---	None	High	Moderate
Waverly	---	---	---	None	High	Moderate
FnA, FnB, FnB2, FnC2 FnC3, FnD3, FnE3:						
Feliciana	---	---	---	None	Moderate	Moderate
GrA, GrB, GrB2:						
Grenada	Fragipan	22-36	24-60	None	Moderate	Moderate
GrB3:						
Grenada	Fragipan	18-22	24-60	None	Moderate	Moderate

Table 19.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In			
GrC2:						
Grenada	Fragipan	22-36	24-60	None	Moderate	Moderate
GrC3:						
Grenada	Fragipan	18-22	24-60	None	Moderate	Moderate
GuF:						
Gullied land.						
Memphis	---	---	---	None	Moderate	Moderate
Ke, Kf:						
Keyespoint	---	---	---	None	High	Low
KrA, KsA, KuA:						
Kurk	---	---	---	None	Moderate	Moderate
LEVEE.						
Levee						
LoA, LoB, LoB2:						
Loring	Fragipan	22-36	24-60	None	Moderate	Moderate
LoB3:						
Loring	Fragipan	18-22	24-60	None	Moderate	Moderate
LoC2:						
Loring	Fragipan	22-36	24-60	None	Moderate	Moderate
LoC3:						
Loring	Fragipan	18-22	24-60	None	Moderate	Moderate
LoD3:						
Loring	Fragipan	18-22	10-36	None	Moderate	Moderate
M-W.						
Miscellaneous Water						
MeA, MeB, MeB2, MeC2, MeC3, MeD3, MeE3:						
Memphis	---	---	---	None	Moderate	Moderate
MmF:						
Memphis	---	---	---	None	Moderate	Moderate
Natchez	---	---	---	None	Low	Low
Mo:						
Mhoon	---	---	---	None	High	Low
Op, Os:						
Openlake	---	---	---	None	High	Low
Ph, Pp:						
Phillippy	---	---	---	None	High	Low
PtD:						
Pits.						
Udorthents.						
Ra.						
Riverwash						

Table 19.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top (In)	Restrictive layer: Thickness (In)	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
Rb, Rc, Rf, RmD:						
Robinsonville----------	---	---	---	None	Low	Low
Ro:						
Roellen----------------	---	---	---	None	High	Low
RsA, RtA, RuA:						
Routon-----------------	---	---	---	None	High	Moderate
Sc, Sh, Sk:						
Sharkey----------------	---	---	---	None	High	Moderate
Tc, Tu:						
Tunica-----------------	---	---	---	None	High	Low
UdC:						
Udorthents.						
Urban land.						
UrB:						
Urban land.						
Udorthents.						
W.						
Water						
Wa, Wm, Wr, Ws:						
Ware-------------------	---	---	---	None	Low	Low

Table 20.--Physical Analyses of Selected Soils

(Dashes indicate the material was not detected. An asterisk indicates the soil represents the typical pedon for the soil series in the survey area. For the location of the pedons, see "Soil Series and Their Morphology." Soil samples were analyzed at the Kentucky Agricultural Experiment Station, Lexington, Kentucky.)

Soil name and sample number	Horizon	Depth	Total: Sand (2-0.05 mm)	Total: Silt (0.05-0.002 mm)	Total: Clay (<0.002 mm)	Sand: Very coarse (2-1 mm)	Sand: Coarse (1-0.5 mm)	Sand: Medium (0.5-0.25 mm)	Sand: Fine (0.25-0.1 mm)	Sand: Very fine (0.1-0.05 mm)	Sand coarser than very fine (2-0.1 mm)	Very fine sand plus silt (0.1-0.002 mm)	Textural class
			Pct <2mm										
Bondurant silty clay loam: (S99KY-075-1)*	Ap1	0-3	12.3	53.7	34.0	0.1	0.3	1.8	4.6	5.5	6.8	59.2	Silty clay loam
	Ap2	3-11	5.6	59.5	34.9	---	0.1	4.2	12.6	3.7	16.9	63.2	Silty clay loam
	A	11-20	8.7	58.3	33.0	---	0.3	4.1	16.6	4.2	21.0	62.5	Silty clay loam
	Bg1	20-28	2.5	42.9	54.6	0.1	0.1	0.3	0.7	1.3	1.2	44.2	Silty clay
	Bg2	28-50	12.2	45.0	42.8	0.1	0.2	0.4	0.6	10.9	1.3	55.9	Silty clay
	2BCg	50-67	28.7	41.3	30.0	0.1	0.3	0.6	5.1	22.6	6.1	63.9	Clay loam
	2Cg	67-80	65.5	15.7	18.8	0.1	0.2	0.3	24.5	40.4	25.1	56.1	Very fine sandy loam
Feliciana silt loam: (S96KY-075-3)	Ap	0-4	3.4	76.3	20.3	0.1	0.5	0.7	0.8	1.3	2.1	77.6	Silt loam
	Bt1	4-17	1.5	67.6	30.9	---	0.2	0.2	0.3	0.8	0.7	68.4	Silty clay loam
	Bt2	17-30	1.1	71.1	27.8	---	0.1	0.1	0.2	0.7	0.4	71.8	Silty clay loam, silt loam
	Bt3	30-46	0.8	76.6	22.6	---	---	---	0.1	0.7	0.1	77.3	Silt loam
	Bt4	46-66	0.9	83.9	15.2	---	---	0.1	0.1	0.7	0.2	84.6	Silt loam
Phillippy silty clay loam: (S99KY-075-3)*	Ap1	0-3	11.1	54.9	34.0	0.2	0.7	1.6	4.5	4.1	7.0	59.0	Silty clay loam
	Ap2	3-10	6.6	55.2	38.2	---	0.1	0.4	2.5	3.6	1.2	81.2	Silty clay loam
	A	10-19	13.8	37.6	48.6	0.1	0.1	0.3	3.5	9.8	4.0	47.4	Silty clay
	2Bw1	19-24	43.8	32.7	23.5	---	0.1	0.5	11.5	31.7	12.1	64.4	Loam
	2Bw2	24-29	61.8	20.7	17.5	0.1	0.1	1.0	28.0	32.6	29.2	53.3	Very fine sandy loam
	2BC	29-42	88.7	5.4	5.9	---	0.1	3.1	75.8	9.7	79.0	15.1	Fine sand
	2C1	42-65	93.8	2.4	3.8	---	0.1	1.0	79.5	13.2	80.6	15.6	Fine sand
	2C2	65-80	76.6	11.3	12.1	---	---	0.2	39.2	37.2	39.4	48.5	Very fine sandy loam
Phillippy silty clay loam: (S99KY-075-2)	Ap1	0-6	11.6	58.2	30.2	0.1	0.1	0.9	4.4	6.1	5.5	64.3	Silty clay loam
	Ap2	6-14	9.5	55.7	34.8	0.1	0.1	0.5	2.7	6.1	1.2	81.2	Silty clay loam
	AB	14-22	13.5	46.3	40.2	0.1	0.2	0.4	2.5	10.3	3.2	56.6	Silty clay
	2Bw1	22-30	40.8	34.0	25.2	---	0.1	0.3	13.6	26.8	14.0	60.8	Loam, clay loam
	2Bw2	30-37	63.0	20.3	16.7	---	0.1	0.4	21.1	41.4	21.6	61.7	Very fine sandy loam
	2BC	37-43	48.6	34.0	17.4	---	0.2	4.0	9.3	35.1	13.5	69.1	Loam
	2C	43-70	96.4	2.9	0.7	0.1	3.3	37.2	54.0	1.8	94.6	4.7	Fine sand

Table 21.--Chemical Analyses of Selected Soils

(ND indicates that a determination was not made. Tr indicates a trace amount. An asterisk indicates the soil represents the typical pedon for the soil series in the survey area. For the location of the pedons, see "Soil Series and Their Morphology." Soil samples were analyzed at the Kentucky Agricultural Experiment Station, Lexington, Kentucky.)

Soil name and sample number	Horizon	Depth	pH 1:1 H_2O	Extractable cations					Cation-exchange capacity		Extractable acidity	Base saturation		Organic matter	Calcium carbonate equivalent	Phosphorus	Potassium
				Ca	Mg	K	Na	Total (TEC)	Ammonium acetate	Sum of cations		Ammonium acetate	Sum of cations				
				------ Milliequivalents per 100 grams of soil-------								Pct	Pct	Pct	Pct	p/m	p/m
Bondurant silty clay loam: (S99KY-075-1)*	Ap1	0-3	5.7	10.9	2.9	0.5	0.1	14.4	22.3	21.4	7.0	65	67	3.2	Tr	52	178
	Ap2	3-11	6.6	12.3	3.0	0.4	0.1	15.8	20.3	23.2	7.4	78	68	2.2	0.1	32	155
	A	11-20	6.4	12.1	4.0	0.4	0.1	16.6	23.3	28.8	12.2	71	58	2.1	0.1	20	142
	Bg1	20-28	5.1	14.4	6.9	0.6	0.1	22.0	33.9	31.3	9.4	65	70	1.4	Tr	21	253
	Bg2	28-50	5.1	11.7	5.9	0.5	0.1	18.2	28.5	25.1	6.9	64	72	1.0	Tr	39	193
	2BCg	50-67	5.6	10.0	4.8	0.4	0.2	15.4	22.4	23.9	8.5	69	64	0.5	Tr	52	157
	2Cg	67-80	5.8	6.4	3.1	0.3	0.1	9.9	15.8	10.7	0.8	63	93	0.4	Tr	49	93
Feliciana silt loam: (S96KY-075-3)	Ap	0-4	5.6	6.7	2.4	0.3	0.1	9.4	14.0	17.0	7.5	67	56	1.7	0.1	22	142
	Bt1	4-17	5.3	6.7	3.9	0.3	0.1	11.0	16.0	22.0	11.0	69	50	0.6	0.2	33	140
	Bt2	17-30	5.0	4.8	4.0	0.3	0.2	9.3	15.1	18.3	9.0	62	51	0.3	0.1	34	127
	Bt3	30-46	5.2	4.1	3.5	0.3	0.2	8.1	13.6	17.1	9.0	60	47	0.2	0.1	35	126
	Bt4	46-66	5.3	3.7	2.9	0.3	0.2	7.1	11.8	14.0	7.0	60	50	0.2	0.1	37	112
Phillippy silty clay loam: (S99KY-075-3)*	Ap1	0-3	6.9	11.7	3.1	0.5	0.1	15.3	21.5	19.5	4.2	71	78	3.1	ND	54	211
	Ap2	3-10	6.0	11.6	3.7	0.5	0.1	15.9	24.9	24.1	8.2	64	66	1.8	ND	29	184
	A	10-19	6.0	17.3	5.0	0.6	0.2	23.1	31.6	31.3	8.2	73	74	1.0	ND	35	210
	2Bw1	19-24	5.9	9.3	3.1	0.4	0.1	12.9	18.4	18.0	5.1	70	72	0.5	ND	44	153
	2Bw2	24-29	5.7	6.6	2.2	0.3	0.1	9.2	12.5	12.5	3.3	74	74	0.4	ND	52	121
	2BC	29-42	5.9	2.4	0.9	0.1	0.1	3.5	4.4	5.6	2.1	79	62	0.2	ND	38	58
	2C1	42-65	5.9	2.5	0.9	0.1	Tr	3.5	3.0	5.5	2.0	94	64	0.1	ND	43	49
	2C2	65-80	5.9	4.5	1.7	0.2	0.1	6.5	8.1	8.6	2.1	80	76	0.2	ND	51	94
Phillippy silty clay loam: (S99KY-075-2)	Ap1	0-6	5.8	10.6	3.2	0.5	0.1	14.4	25.4	18.6	4.2	57	77	2.3	0.1	31	180
	Ap2	6-14	5.6	12.2	4.3	0.4	0.1	17.0	26.9	27.5	10.5	63	62	2.0	0.1	19	159
	AB	14-22	5.3	12.4	5.1	0.5	0.1	18.1	27.4	28.5	10.4	66	63	1.2	Tr	14	165
	2Bw1	22-30	5.5	8.2	3.3	0.3	0.1	11.9	19.0	19.6	7.8	63	61	0.8	Tr	24	127
	2Bw2	30-37	5.5	5.9	2.2	0.2	0.1	8.4	13.5	14.2	5.8	62	59	0.5	Tr	39	94
	2BC	37-43	5.5	6.5	2.5	0.2	0.1	9.3	14.2	15.4	6.1	65	60	0.5	Tr	38	84
	2C	43-70	5.9	0.9	0.3	0.1	Tr	1.3	3.2	4.3	3.0	41	30	0.1	0.1	16	17

Table 22.--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
Adler	Coarse-silty, mixed, superactive, thermic Fluvaquentic Eutrudepts
Bardwell	Fine-silty, mixed, active, thermic Fluventic Hapludolls
Bondurant	Fine, smectitic, thermic Fluvaquentic Vertic Epiaquolls
*Bowdre	Clayey over loamy, smectitic, thermic Fluvaquentic Hapludolls
Calloway	Fine-silty, mixed, active, thermic Aquic Fraglossudalfs
Center	Fine-silty, mixed, active, thermic Aquic Hapludalfs
*Collins	Coarse-silty, mixed, active, acid, thermic Aquic Udifluvents
Commerce	Fine-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts
Convent	Coarse-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts
Crevasse	Mixed, thermic Typic Udipsamments
Dekoven	Fine-silty, mixed, superactive, thermic Typic Endoaquolls
*Falaya	Coarse-silty, mixed, active, acid, thermic Aeric Fluvaquents
Feliciana	Fine-silty, mixed, active, thermic Ultic Hapludalfs
Grenada	Fine-silty, mixed, active, thermic Oxyaquic Fraglossudalfs
Keyespoint	Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Vertic Epiaquepts
Kurk	Fine-silty, mixed, active, thermic Aeric Epiaqualfs
Loring	Fine-silty, mixed, active, thermic Oxyaquic Fragiudalfs
Memphis	Fine-silty, mixed, active, thermic Typic Hapludalfs
Mhoon	Fine-silty, mixed, superactive, nonacid, thermic Fluvaquentic Endoaquepts
Natchez	Coarse-silty, mixed, superactive, thermic Typic Eutrudepts
Openlake	Fine, smectitic, nonacid, thermic Vertic Epiaquepts
Phillippy	Clayey over loamy, smectitic over mixed, superactive, thermic Oxyaquic Hapludolls
Robinsonville	Coarse-loamy, mixed, superactive, nonacid, thermic Typic Udifluvents
Roellen	Fine, smectitic, thermic Fluvaquentic Vertic Epiaquolls
Routon	Fine-silty, mixed, active, thermic Typic Epiaqualfs
*Sharkey	Very-fine, smectitic, thermic Chromic Epiaquerts
Tunica	Clayey over loamy, smectitic over mixed, superactive, nonacid, thermic Vertic Epiaquepts
Udorthents	Udorthents
Ware	Coarse-loamy, mixed, active, thermic Fluventic Hapludolls
Waverly	Coarse-silty, mixed, active, acid, thermic Fluvaquentic Endoaquepts

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