United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Tennessee Agricultural Experiment Station, Lewis County Board of Commissioners, Tennessee Department of Agriculture, and Lewis County Soil Conservation District

Soil Survey of Lewis County, Tennessee

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.

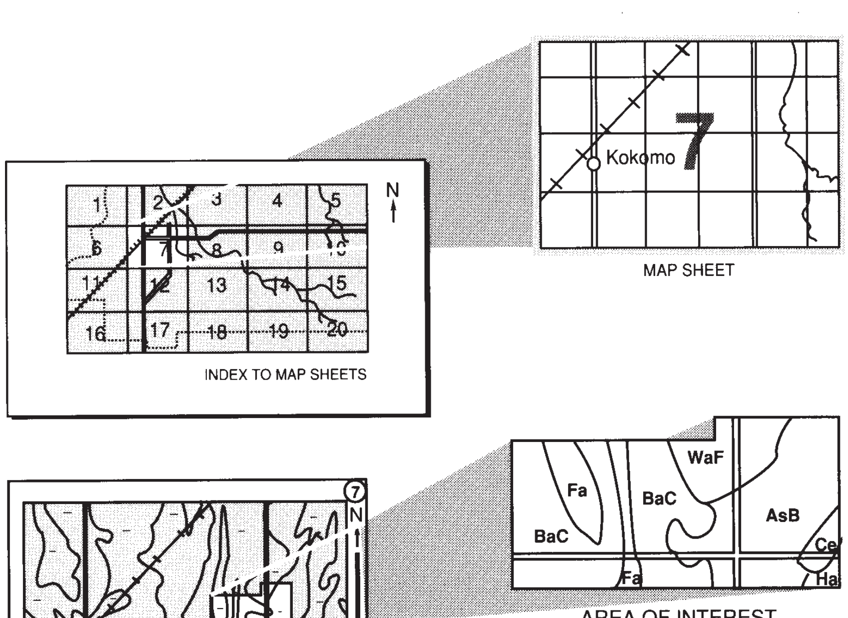
Detailed Soil Maps

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 go to that sheet.

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

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



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

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 1999. Soil names and descriptions were approved in 2000. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1999. This survey was made cooperatively by the Natural Resources Conservation Service, the Tennessee Agricultural Experiment Station, the Lewis County Board of Commissioners, the Tennessee Department of Agriculture, and the Lewis County Soil Conservation District. It is part of the technical assistance furnished to the Lewis County Soil Conservation District.

Cover: Most of Lewis County is woodland. The rich, fertile river bottoms and stream terraces are ideal for growing row crops, pasture, and hay.

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

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Issued 2006

Foreword

This soil survey contains information that affects land use planning in Lewis County. 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, 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.

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Soil Survey of
Lewis County, Tennessee

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United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
Tennessee Agricultural Experiment Station, Lewis County Board of Commissioners, Tennessee Department of Agriculture, and Lewis County Soil Conservation District

LEWIS COUNTY is in the south-central part of Tennessee (fig. 1). It is bounded on the east by Maury County, on the north by Hickman County, on the west by Perry County, and on the south by Wayne and Lawrence Counties. The county has a land area of 180,800 acres, or approximately 295.1 square miles. Hohenwald, the county seat, is the largest town in the county. It has a population of about 3,760. In 1990, according to the U.S. Census, Lewis County had a population of 9,247.

General Nature of the Survey Area

This section gives general information about Lewis County. It describes the history and development, natural resources, physiography and drainage, geology, and climate of the survey area.

History and Development

The survey area was formerly the site of Indian hunting grounds. Early settlers made one of the Indian trails, the Natchez Trace, into the first major southern road. Meriwether Lewis, an American explorer and governor of Louisiana, died here under mysterious circumstances during a trip to the Nation's Capitol. In 1843, the Tennessee Legislature created Lewis County from the area surrounding his grave. The arrival of the railroad and the discovery of phosphate and iron reserves spurred the growth of towns such as Gordonsburg, Allens Creek, Riverside, and Napier. By the 1930's, however, these mining towns had largely become ghost towns.

German immigrants founded the town of Hohenwald, meaning "high forest," in 1878 and developed a lumber industry. An organized colony of Swiss immigrants settled in the county in 1894 and built their "New Switzerland" south of Hohenwald. The two towns eventually merged under the name of Hohenwald, which became the county seat. Hohenwald soon attracted a wide range of artisans, craftsmen, and merchants of many nationalities and unique talents.

Figure 1.—Location of Lewis County in Tennessee.

Natural Resources

Soil and water are the two most important natural resources in Lewis County. The production of crops, hay, livestock, and timber are dependent on these resources. Gravel, which is used in the transportation and construction industries, is also important to the economy of the county. Most of the county has an adequate supply of water for domestic uses and livestock. Major sources of water are streams, wells, ponds, and lakes. Farm ponds are an important source of water for livestock, wildlife, and recreational uses.

Physiography and Drainage

Lewis County lies almost entirely in the western part of the Highland Rim physiographic province. A relatively small area of the Outer Nashville Basin province is in the northeastern portion of the county along Catheys Creek. Generally, the elevations of the ridgetops range between 900 and 960 feet above sea level. The highest elevation is about 1,050 feet above sea level, in the southeastern part of the county, and elevation decreases somewhat to the northwest. The lowest elevation in the county, about 570 feet above sea level, is where Swan Creek enters Hickman County.

The highest relief in Lewis County is a broad interfluve that extends from Summertown to an area west of Hohenwald. Numerous secondary ridges fork off this divide and form the majority of the dissected uplands in the survey area. Similar ridges extend from Wayne and Lawrence Counties south of the Buffalo River. A blanket of loess about 2.5 feet thick or less covers most of the uplands where slopes are gentle. Older clayey and loamy alluvium underlies the loess cap on the least dissected part of this landscape, in an area west of Hohenwald. Most of the soils on this landscape are on smooth slopes and have fragipans. Where the interfluve is more dissected, the alluvium thins out and the material under the loess cap is commonly residuum from cherty limestone or gravelly alluvium of the Tuscaloosa Formation.

Stream terraces are common along major streams and, in some areas, are about 100 feet above the flood plain. Soils on the stream terraces are commonly very deep to bedrock and are silty in the upper part and clayey or gravelly in the lower part. The Buffalo River runs from west to east in the southern part of the county. The larger tributaries include Trace Creek, Rockhouse Creek, and Grinders Creek, which drain into the Buffalo River. In the northern part of the county, the larger tributaries are Big Swan Creek and Little Swan Creek, which drain into the Duck River in Hickman County. Annual flooding is common along the Buffalo River. Flooding occurs along many of the major tributaries and secondary streams during winter and spring.

Geology

Lewis County is underlain predominantly by rocks of Mississippian age. Rock exposures of Silurian and Ordovician age only occur in the major drainage valleys in the county. The most prominent rock formation is the Fort Payne Formation (Mississippian age). This formation is characterized by bedded and disseminated chert, shale, and siltstone and by limey and dolomitic zones.

At the base of the Fort Payne Formation is the Chattanooga Shale. The Chattanooga Shale is used throughout the southeast region as a regional marker bed. The Chattanooga Shale is also important because of its influence on ground-water quality and quantity throughout central and eastern Tennessee.

Another major geologic factor in the survey area is the Tuscaloosa Gravel (Cretaceous age). Remnants of the Tuscaloosa Formation only exist in a few places across Tennessee. However, the influence of the Tuscaloosa Gravel can be seen in the colluvial deposits throughout Lewis County. The chert gravel occurring at the base of hillslopes and on valley floors is a combination of the Tuscaloosa Gravel and chert from the Mississippian age rocks. The source for the Tuscaloosa Gravel is thought to be Cambrian-age and Ordovician-age formations of the Pascola Arch, an eastward-sloping extension of the Ozark Dome *(7)*. During the late Cretaceous age, approximately 70 million years ago, material eroded from the formations of the Pascola Arch were deposited in a shallow sea that covered most of middle Tennessee. The remnants of those deposits are the Tuscaloosa Gravel.

Important mineral resources in Lewis County are chert gravel, iron, and phosphate. An excellent report of the iron industry in the county is available in the Tennessee Division of Geology Bulletin 39. There has been a minimum of oil and gas exploration in Lewis County.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Columbia, Tennessee, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 38.7 degrees F and the average daily minimum temperature is 27.5 degrees. The lowest temperature on record, which occurred at Columbia on January 21, 1985, was -20 degrees. In summer, the average temperature is 76.0 degrees and the average daily maximum temperature is 88.0 degrees. The highest temperature on record, which occurred at Columbia on July 28, 1952, was 109 degrees.

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

The average annual total precipitation is 53.25 inches. Of this, about 29.50 inches, or 55 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.75 inches at Columbia on March 21, 1955.

Thunderstorms occur on about 53 days each year, and most occur between May and August.

The average seasonal snowfall is 5.6 inches. The greatest snow depth at any one time during the period of record was 15 inches, recorded on January 1, 1964. On an average, 2 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 15.0 inches, recorded on January 1, 1964.

The average relative humidity in mid-afternoon is about 57 percent. Humidity is higher at night, and the average at dawn is about 84 percent. The sun shines 64 percent of the time possible in summer and 43 percent in winter. The prevailing wind is from the south. Average windspeed is highest, about 10 miles per hour, in March.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

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

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

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

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

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

General Soil Map Units

The general soil map 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.

1. Biffle-Lax-Ironcity

Moderately deep to very deep, gently sloping to very steep, moderately well drained, well drained, and somewhat excessively drained soils that formed in silt over gravelly alluvium and silt over residuum from cherty limestone; on uplands

Setting

Landform: Nearly level to rolling ridges and steep hillsides (fig. 2)
Slope range: 2 to 60 percent

Extent and Composition

Percent of the survey area: 30
- Biffle soils—45 percent
- Lax soils—25 percent
- Ironcity soils—20 percent
- Minor soils (including Sulphura, Humphreys, and Riverby)—10 percent

Soil Properties and Qualities

Biffle

Drainage class: Somewhat excessively drained
Position on the landform: Hillsides
Parent material: Residuum from cherty limestone
Surface layer texture: Gravelly silt loam
Slope range: 15 to 60 percent

Lax

Drainage class: Moderately well drained
Position on the landform: Ridges

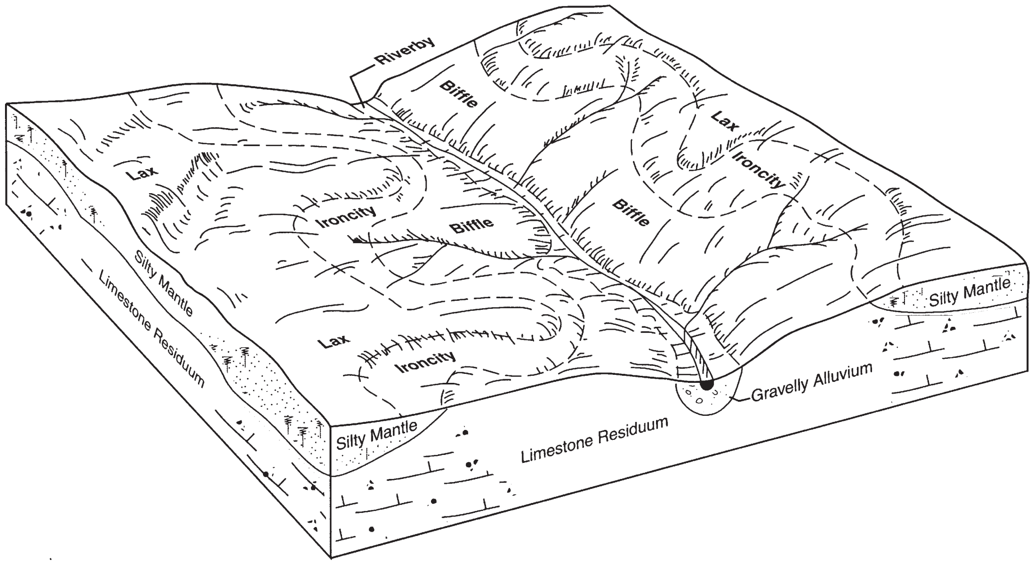

Figure 2.—Typical pattern of soils and parent material in the Biffle-Lax-Ironcity general soil map unit.

Parent material: A silty mantle over gravelly alluvium and residuum of limestone
Surface layer texture: Silt loam
Slope range: 2 to 12 percent

Ironcity

Drainage class: Well drained
Position on the landform: Ridges and hillsides
Parent material: A silty mantle over cherty limestone residuum
Surface layer texture: Gravelly silt loam
Slope range: 5 to 20 percent

Land Use Suitability

Cropland: Biffle—poorly suited; Lax and Ironcity—suited
Pasture and hayland: Biffle—suited; Lax and Ironcity—well suited
Woodland: Suited
Residential and commercial uses: Biffle and Lax—poorly suited; Ironcity—suited

2. Biffle-Ironcity

Moderately deep to very deep, rolling to very steep, well drained and somewhat excessively drained soils that formed in residuum from cherty limestone and a silty mantle over residuum from cherty limestone; on uplands

Setting

Landform: Upland ridges and hillsides (fig. 3)
Slope range: 5 to 60 percent

Extent and Composition

Percent of the survey area: 30
Biffle soils—65 percent
Ironcity soils—25 percent
Minor soils (including Riverby, Sulphura, and Humphreys)—10 percent

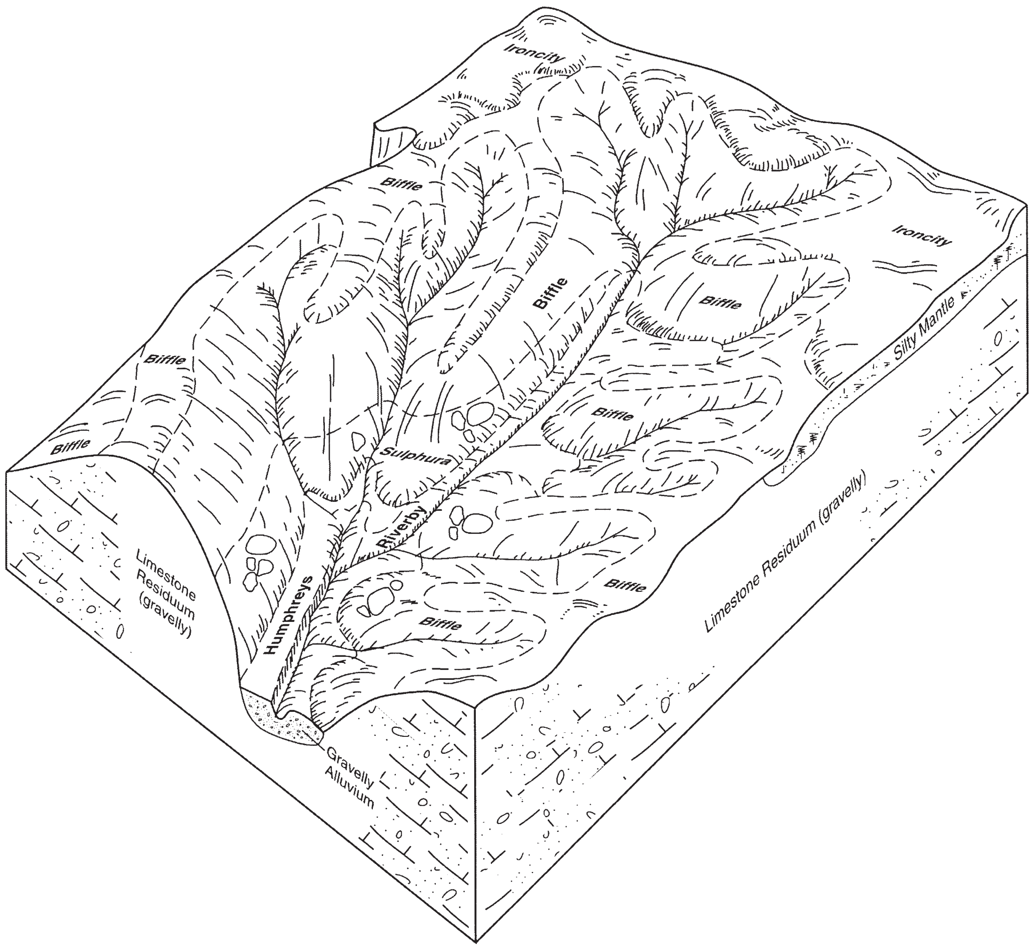

Figure 3.—Typical pattern of soils and parent material in the Biffle-Ironcity general soil map unit.

Soil Properties and Qualities

Biffle

Drainage class: Somewhat excessively drained
Position on the landform: Ridges and hillsides
Parent material: Residuum from cherty limestone
Surface layer texture: Gravelly silt loam
Slope range: 5 to 60 percent

Ironcity

Drainage class: Well drained
Position on the landform: Ridges and hillsides
Parent material: A silty mantle over residuum from cherty limestone
Surface layer texture: Gravelly silt loam
Slope range: 5 to 20 percent

Land Use Suitability

Cropland: Biffle—poorly suited; Ironcity—suited
Pasture and hayland: Suited

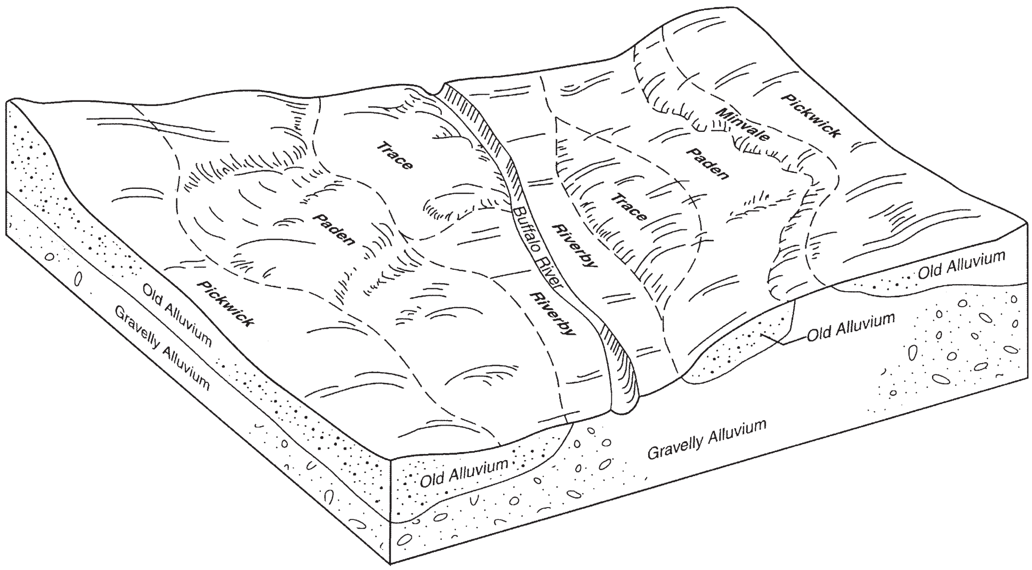

Figure 4.—Typical pattern of soils and parent material in the Pickwick-Paden-Riverby-Trace general soil map unit.

Woodland: Suited
Residential and commercial uses: Suited

3. Pickwick-Paden-Riverby-Trace

Very deep, nearly level to rolling, well drained, moderately well drained, and excessively drained soils that formed in alluvium and alluvium underlain by gravelly alluvium; on stream terraces and flood plains

Setting

Landform: Stream terraces and flood plains (fig. 4)
Slope range: 0 to 12 percent

Extent and Composition

Percent of the survey area: 10
Pickwick soils—30 percent
Paden soils—25 percent
Riverby soils—20 percent
Trace soils—15 percent
Minor soils (including Minvale, Tarklin, Lee, and Lobelville)—10 percent

Soil Properties and Qualities

Pickwick

Drainage class: Well drained
Position on the landform: Stream terraces
Parent material: Alluvium
Surface layer texture: Silt loam
Slope range: 2 to 12 percent

Paden

Drainage class: Moderately well drained
Position on the landform: Stream terraces
Parent material: Alluvium
Surface layer texture: Silt loam
Slope range: 2 to 5 percent

Riverby

Drainage class: Excessively drained
Position on the landform: Flood plains
Parent material: Alluvium
Surface layer texture: Gravelly sandy loam
Slope range: 0 to 2 percent

Trace

Drainage class: Well drained
Position on the landform: Terraces
Parent material: Alluvium over gravelly alluvium
Surface layer texture: Silt loam
Slope range: 0 to 5 percent

Land Use Suitability

Cropland: Pickwick, Paden, and Trace—well suited; Riverby—unsuited
Pasture and hayland: Well suited
Woodland: Well suited
Residential and commercial uses: Pickwick and Trace—well suited; Paden—poorly suited; Riverby—unsuited

4. Humphreys-Riverby-Trace

Very deep, nearly level to rolling, well drained to excessively drained soils that formed in alluvium and colluvium from cherty limestone, coarse textured alluvium, and alluvium underlain by gravelly alluvium; on footslopes, alluvial fans, stream terraces, and flood plains

Setting

Landform: Footslopes, alluvial fans, stream terraces, and flood plains (fig. 5)
Slope range: 0 to 12 percent

Extent and Composition

Percent of the survey area: 15
Humphreys soils—40 percent
Riverby soils—30 percent
Trace soils—20 percent
Minor soils (including Lee, Lobelville, and Tarklin)—10 percent

Soil Properties and Qualities

Humphreys

Drainage class: Well drained
Position on the landform: Footslopes, alluvial fans, and stream terraces
Parent material: Colluvium and alluvium from cherty limestone
Surface layer texture: Gravelly silt loam
Slope range: 5 to 12 percent

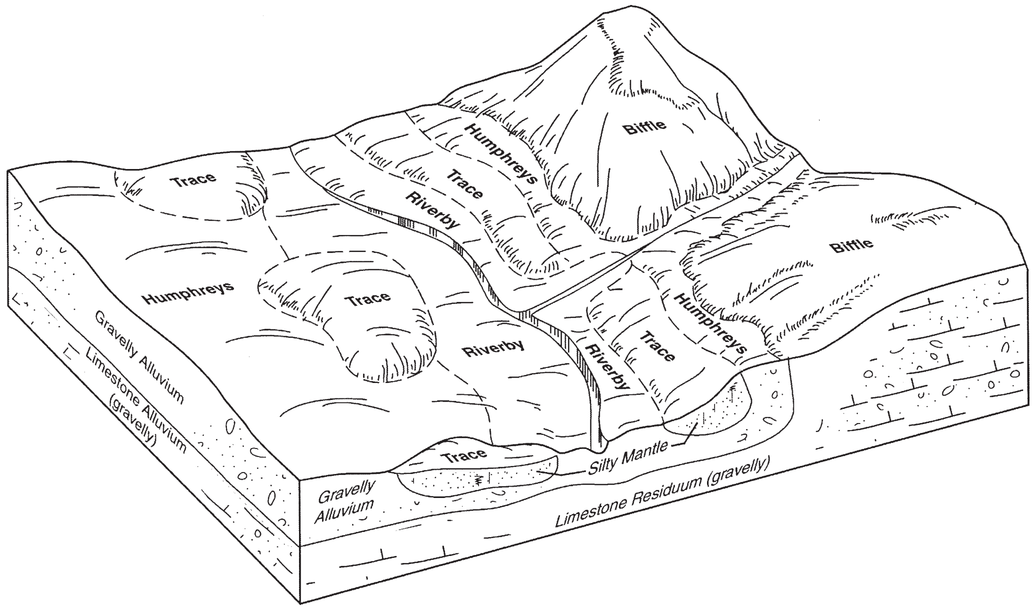

Figure 5.—Typical pattern of soils and parent material in the Humphreys-Riverby-Trace general soil map unit.

Riverby

Drainage class: Excessively drained
Position on the landform: Flood plains
Parent material: Gravelly alluvium
Surface layer texture: Gravelly silt loam
Slope range: 0 to 2 percent

Trace

Drainage class: Well drained
Position on the landform: Stream terraces
Parent material: Silty and gravelly alluvium
Surface layer texture: Silt loam
Slope range: 0 to 5 percent

Land Use Suitability

Cropland: Humphreys and Trace—well suited; Riverby—unsuited
Pasture and hayland: Well suited
Woodland: Well suited
Residential and commercial uses: Humphreys and Trace—well suited; Riverby—unsuited

5. Dickson-Ironcity-Taft

Very deep, nearly level to moderately steep, somewhat poorly drained to well drained soils that formed in a silty mantle over residuum from limestone; on uplands

Setting

Landform: Upland flats and depressions (fig. 6)
Slope range: 0 to 20 percent

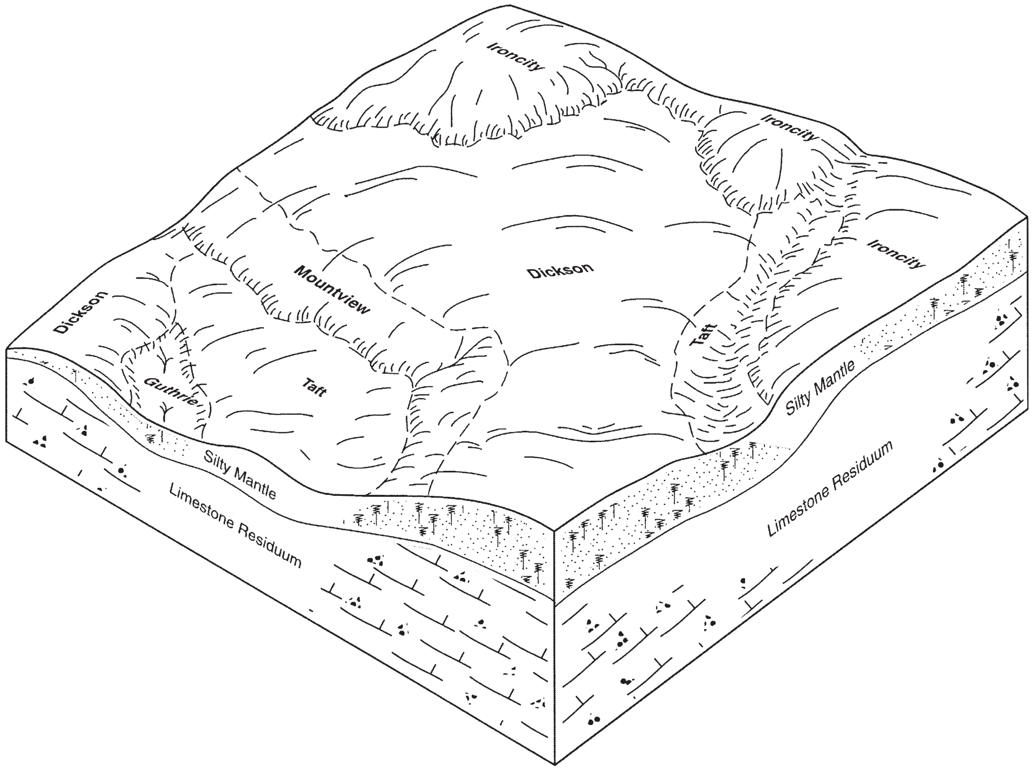

Figure 6.—Typical pattern of soils and parent material in the Dickson-Ironcity-Taft general soil map unit.

Extent and Composition

Percent of the survey area: 15
Dickson soils—40 percent
Ironcity soils—30 percent
Taft soils—20 percent
Minor soils (including Mountview, Guthrie, and Lax)—10 percent

Soil Properties and Qualities

Dickson

Drainage class: Moderately well drained
Position on the landform: Upland flats
Parent material: A silty mantle over residuum from limestone
Surface layer texture: Silt loam
Slope range: 2 to 8 percent

Ironcity

Drainage class: Well drained
Position on the landform: Ridges and hillsides
Parent material: A silty mantle over residuum from cherty limestone
Surface layer texture: Gravelly silt loam
Slope range: 5 to 20 percent

Taft

Drainage class: Somewhat poorly drained
Position on the landform: Flats and depressions

Parent material: A silty mantle over residuum from limestone
Surface layer texture: Silt loam
Slope range: 0 to 2 percent

Land Use Suitability

Cropland: Dickson and Ironcity—well suited; Taft—suited
Pasture and hayland: Well suited
Woodland: Well suited
Residential and commercial uses: Dickson and Taft—poorly suited; Ironcity—suited

Detailed Soil Map Units

The map units delineated on the detailed soil maps 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, Armour silt loam, 5 to 12 percent slopes, eroded, is a phase of the Armour series.

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

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. Sengtown-Mountview complex, 5 to 12 percent slopes, eroded, is an example.

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

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, gravel, 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.

AmB—Armour silt loam, 2 to 5 percent slopes

Setting

Landscape position: Stream terraces and footslopes along the Buffalo River and secondary streams throughout the county
Shape of areas: Irregular
Size of areas: 5 to 15 acres
Major uses: Pasture and hayland

Typical Profile

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

Subsoil:
8 to 16 inches—dark brown silt loam
16 to 24 inches—strong brown silt loam
24 to 47 inches—dark yellowish brown silt loam
47 to 65 inches—strong brown silty clay loam that has brownish mottles

Inclusions

- Trace soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Slightly acid to strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited
General management considerations:
• Most locally adapted crops can be grown, and good yields can be attained.
Suitable management practices:
• Contour farming and crop residue management are some of the conservation measures that are effective in maintaining productivity.
Capability subclass: 2e

Pasture and hayland

Suitability: Well suited
General management considerations:
• This soil has no significant limitations affecting forage production if erosion is controlled.
Suitable management practices:
• The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, loblolly pine, black walnut, southern red oak, and white oak
General management considerations:
• The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Well suited
General management considerations:
• Low strength is a limitation affecting local roads and streets.
Suitable management practices:
• If the soil is to be used as a base for roads and streets, mixing the soil with a suitable base material helps to increase the soil’s strength and stability.

AmC2—Armour silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Stream terraces and footslopes along the Buffalo River and secondary streams throughout the county
Shape of areas: Irregular
Size of areas: 5 to 15 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown silt loam

Subsoil:
5 to 14 inches—dark brown silt loam
14 to 24 inches—strong brown silt loam

24 to 47 inches—dark yellowish brown silt loam
47 to 65 inches—strong brown silty clay loam that has brownish mottles

Inclusions

- Humphreys and Trace soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Slightly acid to strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Most locally adapted crops can be grown, and good yields can be attained.

Suitable management practices:
- Contour farming and crop residue management are some of the conservation measures that are effective in maintaining productivity.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- This soil has no significant limitations affecting forage production if erosion is controlled.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, loblolly pine, black walnut, southern red oak, and white oak
General management considerations:
- The main limitation affecting timber management is a hazard of erosion on roads and trails. See table 8, part I.

Residential and commercial uses

Suitability: Suited
General management considerations:
- Low strength is a limitation affecting local roads and streets.
- The slope is a limitation affecting small commercial buildings.

Suitable management practices:
- If the soil is to be used as a base for roads and streets, mixing the soil with a suitable base material helps to increase the soil's strength and stability.
- Proper building designs and construction costs are the major considerations on sites that need to be excavated or filled for the construction of small commercial buildings.

BbC—Biffle gravelly silt loam, 5 to 15 percent slopes

Setting

Landscape position: Narrow ridgetops throughout the county
Shape of areas: Irregular
Size of areas: 5 to 200 acres
Major uses: Woodland

Typical Profile

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

Subsoil:
2 to 12 inches—yellowish brown gravelly silt loam
12 to 32 inches—yellowish brown gravelly silty clay loam
32 to 60 inches—highly weathered bedrock

Inclusions

- Ironcity and Lax soils on similar landscapes

Important Soil Properties and Features

Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Soil reaction: Extremely acid or very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: 20 to 40 inches

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- Droughtiness and a high erosion potential are major limitations affecting cropland.

Capability subclass: 4s

Pasture and hayland

Suitability: Suited
General management considerations:
- If plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Suited
Trees suitable for planting: Shortleaf pine, Virginia pine, chestnut oak, and eastern redcedar
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- Depth to bedrock is a limitation affecting septic tank absorption fields and dwellings with basements.

BbD—Biffle gravelly silt loam, 15 to 30 percent slopes

Setting

Landscape position: Hillsides throughout the county
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Woodland

Typical Profile

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

Subsoil:
2 to 12 inches—yellowish brown gravelly silt loam
12 to 32 inches—yellowish brown gravelly silty clay loam
32 to 60 inches—highly weathered bedrock

Inclusions

- Ironcity soils on similar landscapes

Important Soil Properties and Features

Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Soil reaction: Extremely acid or very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: 20 to 40 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- The slope and a high erosion potential are major limitations affecting cropland.

Capability subclass: 6s

Pasture and hayland

Suitability: Suited
General management considerations:
- Because of the low amount of available water, the soil is droughty and yields are reduced.
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, should be selected for planting.
- Stocking rates should be adjusted to prevent overgrazing and erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Shortleaf pine, Virginia pine, chestnut oak, and eastern redcedar
General management considerations:
- The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability for log landings, a hazard of soil rutting, erosion on roads and trails, the suitability of mechanical planting, and the suitability for mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

BbF—Biffle gravelly silt loam, 30 to 60 percent slopes

Setting

Landscape position: Steep side slopes throughout the county
Shape of areas: Irregular
Size of areas: 60 to 1,000 acres
Major uses: Woodland

Typical Profile

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

Subsoil:
2 to 11 inches—yellowish brown gravelly silt loam
11 to 32 inches—yellowish brown gravelly silty clay loam
32 to 60 inches—highly weathered bedrock

Inclusions

- Areas of rock outcrop

Important Soil Properties and Features

Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Soil reaction: Extremely acid or very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: 20 to 40 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- The slope and a high erosion potential are major limitations affecting cropland.

Capability subclass: 7s

Pasture and hayland

Suitability: Suited
General management considerations:
- Because of the low amount of available water, the soil is droughty and yields are reduced.
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, should be selected for planting.
- Stocking rates should be adjusted to prevent overgrazing and erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Virginia pine and eastern redcedar
General management considerations:
- The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability for log landings, a hazard of soil rutting, erosion on roads and trails, the suitability of mechanical planting, and the suitability for mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

BOF—Biffle-Sulphura-Rock outcrop association, very steep

Setting

Landscape position: Steep side slopes throughout the county
Shape of areas: Irregular
Size of areas: 100 to 2,000 acres
Major uses: Woodland
Slope range: 40 to 75 percent

Composition

Biffle soil: 50 percent
Sulphur soil: 25 percent
Rock outcrop: 20 percent
Minor soils: 5 percent

Typical Profile

Biffle

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

Subsoil:
2 to 11 inches—yellowish brown gravelly silt loam
11 to 32 inches—yellowish brown gravelly silty clay loam
32 to 60 inches—highly weathered bedrock

Sulphura

Surface layer:
0 to 5 inches—yellowish brown very gravelly silt loam

Subsoil:
5 to 11 inches—light yellowish brown very gravelly silt loam
11 to 25 inches—yellowish brown very gravelly silt loam
25 to 80 inches—hard gray siltstone interlayed with shale and chert

Rock outcrop

Rock outcrop generally occurs as narrow bands or ledges of exposed limestone bedrock that follow the contour of the slope and protrude 1 to 3 feet above the surface. It also occurs in some scattered areas.

Inclusions

- Dellrose soils on side slopes

Important Soil Properties and Features of the Biffle and Sulphura Soils

Drainage class: Somewhat excessively drained
Permeability: Biffle—moderately rapid; Sulphura—moderate
Available water capacity: Low
Soil reaction: Biffle—extremely acid or very strongly acid; Sulphura—strongly acid to slightly acid
Flood hazard: None
High water table: None
Depth to bedrock: 20 to 40 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- The slope and a high erosion potential are major limitations affecting cropland.

Capability subclass: Biffle and Sulphura—7s; Rock outcrop—none assigned

Pasture and hayland

Suitability: Poorly suited
General management considerations:
- Because of the low amount of available water, the soils are droughty and yields and reduced.
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, should be selected for planting.
- Stocking rates should be adjusted to prevent overgrazing and erosion.
- Unless access roads are built on the contour, areas of pasture that have more than 30 percent slopes may be too steep for the safe operation of farm equipment used for broadcasting seed, fertilizer, and herbicide.

Woodland

Suitability: Suited
Trees suitable for planting: Virginia pine and eastern redcedar
General management considerations:
- The main limitations for timber management are limitations affecting the construction

of haul roads and log landings, the suitability for log landings, a hazard of soil rutting, erosion on roads and trails, the suitability of mechanical planting, and the suitability for mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

DeD—Dellrose gravelly silt loam, 12 to 20 percent slopes

Setting

Landscape position: Footslopes and hillsides in the northeastern part of the county
Shape of areas: Irregular
Size of areas: 10 to 25 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown gravelly silt loam

Subsoil:
5 to 18 inches—dark brown gravelly silt loam
18 to 31 inches—strong brown gravelly silty clay loam
31 to 42 inches—strong brown gravelly silty clay loam that has brownish mottles
42 to 65 inches—yellowish brown silty clay that has reddish and brownish mottles

Inclusions

- Biffle soils and soils that have a clayey subsoil; on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Soil reaction: Slightly acid to very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- The slope and a high erosion potential are major limitations affecting cropland.

Capability subclass: 4e

Pasture and hayland

Suitability: Well suited
General management considerations:
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, black walnut, southern red oak, and loblolly pine
General management considerations:
- The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability of log landings, a hazard of soil rutting, erosion on roads and trails, the suitability of roads, the suitability of mechanical planting, and the suitability of mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- This map unit is poorly suited to residential and commercial uses because of the slope.

DeE—Dellrose gravelly silt loam, 20 to 40 percent slopes

Setting

Landscape position: Footslopes and hillsides in the northeastern part of the county
Shape of areas: Irregular
Size of areas: 10 to 25 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown gravelly silt loam

Subsoil:
5 to 18 inches—dark brown gravelly silt loam
18 to 31 inches—strong brown gravelly silty clay loam
31 to 42 inches—strong brown gravelly silty clay loam that has brownish mottles
42 to 65 inches—yellowish brown silty clay that has reddish and brownish mottles

Inclusions

- Biffle soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Soil reaction: Slightly acid to very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Unsuited

General management considerations:
- The slope and a high erosion potential are major limitations affecting cropland.

Capability subclass: 6e

Pasture and hayland

Suitability: Suited
General management considerations:
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, black walnut, southern red oak, and loblolly pine
General management considerations:
- The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability of log landings, a hazard of soil rutting, erosion on roads and trails, the suitability of roads, the suitability of mechanical planting, and the suitability of mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

DkB2—Dickson silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Undulating uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 15 acres
Major uses: Pasture and hayland (fig. 7)

Typical Profile

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

Subsoil:
5 to 10 inches—light yellowish brown silt loam
10 to 14 inches—yellowish brown and light yellowish brown silt loam
14 to 20 inches—yellowish brown silt loam that has brownish mottles
20 to 24 inches—light brownish gray, light gray, and yellowish brown silt loam
24 to 39 inches—light yellowish brown, yellowish brown, light gray, and dark yellowish brown silty clay loam fragipan
39 to 60 inches—red, yellowish red, light yellowish brown, and light gray clay

Inclusions

- Mountview, Lax, and Taft soils on similar landscapes

Figure 7.—Homes and idle cropland in an area of Dickson silt loam, 2 to 5 percent slopes, eroded. An increasing population is causing a rapid conversion of cropland to residential and commercial uses.

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Soil reaction: Slightly acid to very strongly acid
Flood hazard: None
High water table: Perched above the fragipan at a depth of about 1.5 to 2.0 feet
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Most climatically adapted crops grow well if management includes erosion control.
- The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.

Suitable management practices:
- Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices, such as no-till planting, can minimize erosion and increase soil moisture.
- Planting crops later in the spring improves plant germination and early growth.

Capability subclass: 2e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the seasonal wetness, only hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.
- A perched water table limits grazing for several days at a time during winter and early spring.

Suitable management practices:
- Grazing should be deferred until some time from late spring to early fall.
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, southern red oak, and white oak
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- A seasonally perched water table and restricted permeability in the subsoil are major limitations affecting septic tank absorption fields.

DkC2—Dickson silt loam, 5 to 8 percent slopes, eroded

Setting

Landscape position: Undulating uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 15 acres
Major uses: Pasture and hayland

Typical Profile

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

Subsoil:
5 to 10 inches—light yellowish brown silt loam
10 to 14 inches—yellowish brown and light yellowish brown silt loam
14 to 20 inches—yellowish brown silt loam that has brownish mottles
20 to 24 inches—light brownish gray, light gray, and yellowish brown silt loam
24 to 39 inches—light yellowish brown, yellowish brown, light gray, and dark yellowish brown silty clay loam fragipan
39 to 60 inches—red, yellowish red, light yellowish brown, and light gray clay

Inclusions

- Mountview and Ironcity soils on similar landscapes

Important Soil Properties and Features

Drainage class: Moderately well drained

Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Soil reaction: Slightly acid to very strongly acid
Flood hazard: None
High water table: Perched above the fragipan at a depth of about 1.5 to 2.0 feet
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Most climatically adapted crops grow well if management includes erosion control.
- The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.

Suitable management practices:
- Planting cover crops, using a crop rotation system, returning crop residue to the soil, and using conservation tillage practices, such as no-till planting, can minimize erosion and increase soil moisture.
- Planting crops later in the spring improves plant germination and early growth.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the seasonal wetness, only hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.
- A perched water table limits grazing for several days at a time during winter and early spring.

Suitable management practices:
- Grazing should be deferred until some time from late spring to early fall.
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, southern red oak, and white oak
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- A seasonally perched water table and restricted permeability in the subsoil are major limitations affecting septic tank absorption fields.

Dm—Dumps, mine

This map unit consists of areas of refuse and spoil material from iron ore smelting operations in the southwestern section of the county. The deposits of slag and rock material range from several inches to more than 4 feet deep and occupy from 2 to more than 5 acres. The areas range from essentially barren waste areas to sparsely

Figure 8.—An area of Guthrie silt loam, ponded. Land use is limited in areas of this soil by seasonal wetness and inundation by water on the surface for several months.

vegetated woodland. They support sparse stands of eastern redcedar, locust, and American sycamore.

No capability class is assigned to this map unit.

Gu—Guthrie silt loam, ponded

Setting

Landscape position: Upland flats and depressions in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 30 acres
Major uses: Woodland (fig. 8)

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam

Subsoil:
7 to 15 inches—light brownish gray silt loam
15 to 24 inches—gray silt loam
24 to 35 inches—light brownish gray silt loam fragipan
35 to 45 inches—light brownish gray silt loam fragipan
45 to 60 inches—light brownish gray silty clay loam fragipan

Inclusions

- Taft soils and a similar soil that does not have a fragipan; on similar landscapes

Important Soil Properties and Features

Drainage class: Poorly drained
Permeability: Slow
Available water capacity: High
Soil reaction: Strongly acid to extremely acid
Flood hazard: None; however, water may be ponded in some areas for several days
High water table: Perched above the fragipan at a depth of about 0.5 foot in winter and early in spring
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- Seasonal wetness limits the production and harvest of some crops.

Capability subclass: 5w

Pasture and hayland

Suitability: Suited
General management considerations:
- Hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.

Suitable management practices:
- Grazing should be deferred until some time from late spring to early fall.

Woodland

Suitability: Suited
Trees suitable for planting: Sweetgum, swamp white oak, cherrybark oak, and American sycamore
General management considerations:
- The main limitations for timber management are limitations affecting the suitability for log landings, a hazard of soil rutting, the suitability for roads, and seedling mortality. See table 8.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

HuB—Humphreys gravelly silt loam, 2 to 5 percent slopes

Setting

Landscape position: Footslopes, alluvial fans, and stream terraces along the Buffalo River and throughout the county
Shape of areas: Irregular
Size of areas: 5 to 200 acres
Major uses: Woodland

Typical Profile

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

Subsoil:
6 to 18 inches—dark yellowish brown gravelly silt loam
18 to 35 inches—brown gravelly silty clay loam
35 to 46 inches—yellowish brown very gravelly clay loam
46 to 60 inches—dark yellowish brown extremely gravelly clay loam

Inclusions

- Tarklin and Trace soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Soil reaction: Strongly acid to moderately acid, except where lime has been added
Flood hazard: None
High water table: At a depth of 5 to 6 feet from December to March
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited
General management considerations:
- A suitable conservation tillage system is needed to prevent damage from erosion.
- Coarse fragments on or near the surface of the soil can hinder tillage and reduce the amount of moisture available to plants in dry years.

Suitable management practices:
- Practices that include no-till planting, contour cultivation, stripcropping, and growing cover crops help to increase soil moisture and minimize erosion.
- Using a cropping system that includes grasses, legumes, or grass-legume mixtures, rotating crops, and returning crop residue to the soil maintain or improve tilth.

Capability subclass: 2e

Pasture and hayland

Suitability: Well suited
General management considerations:
- In dry years the low available water capacity can reduce the yields for moisture-sensitive hay crops, such as alfalfa.

Suitable management practices:
- Rotating grazing areas, controlling weeds, and applying fertilizer annually maintain the quality and quantity of forage.

- Alfalfa grows well and produces good yields when moisture is adequate and other management needs, such as liming and fertilization, are met.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, sweetgum, American sycamore, black walnut, and white ash
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Well suited
General management considerations:
- Seasonal wetness caused by seepage from the higher areas may be a limitation affecting dwellings and small commercial buildings on footslopes.

Suitable management practices:
- Subsurface tile drainage can be used to divert seep water around areas of septic tank filter fields and structures.

HuC—Humphreys gravelly silt loam, 5 to 12 percent slopes

Setting

Landscape position: Footslopes, alluvial fans, and stream terraces along the Buffalo River and throughout the county
Shape of areas: Irregular
Size of areas: 5 to 200 acres
Major uses: Woodland

Typical Profile

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

Subsoil:
6 to 18 inches—dark yellowish brown gravelly silt loam
18 to 35 inches—brown gravelly silty clay loam
35 to 46 inches—yellowish brown very gravelly clay loam
46 to 60 inches—dark yellowish brown extremely gravelly clay loam

Inclusions

- Tarklin and Trace soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Soil reaction: Strongly acid to moderately acid, except where lime has been added
Flood hazard: None
High water table: At a depth of 5 to 6 feet from December to March
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited
General management considerations:
- A suitable conservation tillage system is needed to prevent damage from erosion.
- Coarse fragments on or near the surface of the soil can hinder tillage and reduce the amount of moisture available to plants in dry years.

Suitable management practices:
- Practices that include no-till planting, contour cultivation, stripcropping, and growing cover crops increase soil moisture and minimize erosion.
- Using a cropping system that includes grasses, legumes, or grass-legume mixtures, rotating crops, and returning crop residue to the soil maintain or improve tilth.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- In dry years the low available water capacity can reduce the yields for moisture-sensitive hay crops, such as alfalfa.

Suitable management practices:
- Rotating grazing areas, controlling weeds, and applying fertilizer annually maintain the quality and quantity of forage.
- Alfalfa grows well and produces good yields when moisture is adequate and other management needs, such as liming and fertilization, are met.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, sweetgum, American sycamore, black walnut, and white ash
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Well suited
General management considerations:
- Seasonal wetness caused by seepage from the higher areas may be a limitation affecting dwellings and small commercial buildings on footslopes.

Suitable management practices:
- Subsurface tile drainage can be used to divert seep water around areas of septic tank filter fields and structures.

IrC—Ironcity gravelly silt loam, 5 to 12 percent slopes

Setting

Landscape position: Uplands throughout the county
Shape of areas: Irregular
Size of areas: 75 to 500 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown gravelly silt loam

Subsoil:
2 to 6 inches—yellowish brown gravelly silt loam
6 to 22 inches—yellowish brown gravelly silty clay loam
22 to 30 inches—strong brown gravelly silty clay loam
30 to 48 inches—yellowish red gravelly silty clay that has brownish mottles
48 to 65 inches—yellowish brown, strong brown, and red gravelly silty clay

Inclusions

- Mountview and Lax soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Soil erosion is a major concern where cultivated crops are grown.
- Conservation practices are needed to minimize erosion and maintain the soil's productivity.

Suitable management practices:
- Minimum tillage, stripcropping, contour farming, and winter cover crops help to reduce runoff and control erosion.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the low amount of available water, the soil is droughty and yields are reduced.
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, should be selected for planting.
- Stocking rates should be adjusted to prevent overgrazing and erosion.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, Virginia pine, chestnut oak, and southern red oak
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.
- Proper building designs and construction costs are the major considerations on sites that need to be excavated or filled for the construction of small commercial buildings or dwellings.

Suitable management practices:
- Increasing the size of the absorption field and placing filter lines on the contour help to overcome the restricted permeability and the slope.
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.

IrD—Ironcity gravelly silt loam, 12 to 20 percent slopes

Setting

Landscape position: Uplands throughout the county
Shape of areas: Irregular
Size of areas: 5 to 75 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown gravelly silt loam

Subsoil:
2 to 6 inches—yellowish brown gravelly silt loam
6 to 22 inches—yellowish brown gravelly silty clay loam
22 to 30 inches—strong brown gravelly silty clay loam
30 to 48 inches—yellowish red gravelly silty clay that has brownish mottles
48 to 65 inches—yellowish brown, strong brown, and red gravelly silty clay

Inclusions

- Mountview and Lax soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- The slope and a high erosion potential are major limitations affecting cropland.

Capability subclass: 4e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the low amount of available water, the soil is droughty and yields are reduced.
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, should be selected for planting.
- Stocking rates should be adjusted to prevent overgrazing and erosion.

Woodland

Suitability: Well suited
Trees suitable for planting: Loblolly pine, Virginia pine, chestnut oak, and southern red oak
General management considerations:
- The main limitations for timber management are limitations affecting the suitability for log landings, a hazard of erosion on roads and trails, the suitability for roads, and the suitability for mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.
- Proper building designs and construction costs are the major considerations on sites that need to be excavated or filled for the construction of small commercial buildings or dwellings.

Suitable management practices:
- Increasing the size of the absorption field and placing filter lines on the contour help to overcome the restricted permeability and the slope.
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.

LaC—Lax-Ironcity complex, 5 to 12 percent slopes

Setting

Landscape position: Uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 500 acres
Major uses: Pasture and hayland

Composition

Lax soil and similar soils: 60 percent
Ironcity soil and similar soils: 40 percent

Typical Profile

Lax

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

Subsoil:
6 to 16 inches—yellowish brown silt loam
16 to 22 inches—yellowish brown silty clay loam that has brownish mottles
22 to 42 inches—yellowish brown, strong brown, and light brownish gray extremely gravelly silty clay loam fragipan
42 to 60 inches—yellowish red, light brownish gray, and yellowish brown very gravelly silty clay loam

Ironcity

Surface layer:
0 to 2 inches—dark grayish brown gravelly silt loam

Subsoil:
2 to 6 inches—yellowish brown gravelly silt loam
6 to 22 inches—yellowish brown gravelly silty clay loam
22 to 30 inches—strong brown gravelly silty clay loam
30 to 48 inches—yellowish red gravelly silty clay that has brownish mottles
48 to 65 inches—yellowish brown, strong brown, and red gravelly silty clay

Inclusions

- Biffle soils on similar landscapes and steep side slopes
- Mountview soils on similar landscapes

Important Soil Properties and Features

Drainage class: Lax—moderately well drained; Ironcity—well drained
Permeability: Lax—moderate above the fragipan and slow in the fragipan; Ironcity—moderate
Available water capacity: Moderate
Soil reaction: Lax—slightly acid to very strongly acid; Ironcity—strongly acid or very strongly acid, except where lime has been added
Flood hazard: None
High water table: Lax—perched above the fragipan at a depth of about 1.5 to 2.0 feet; Ironcity—none
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.
- Soil erosion is a major concern where cultivated crops are grown.
- Conservation practices are needed to minimize erosion and maintain soil productivity.

Suitable management practices:
- Planting crops later in the spring improves plant germination and early growth.
- Minimum tillage, stripcropping, contour farming, and winter cover crops help to reduce runoff and control erosion.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the seasonal wetness, only hay and pasture plants that can tolerate

short periods of wetness, such as fescue and white clover, should be selected for planting.
- A perched water table limits grazing for several days at a time during winter and early spring.
- Because of the low amount of available water, the soils tend to be droughty and yields are reduced.
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Grazing should be deferred until some time from late spring to early fall.
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.
- Forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, should be selected for planting.
- Stocking rates should be adjusted to prevent overgrazing and erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Chestnut oak, Virginia pine, white oak, and eastern redcedar
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

LbB—Lax silt loam, 2 to 5 percent slopes

Setting

Landscape position: Uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 40 acres
Major uses: Woodland

Typical Profile

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

Subsoil:
6 to 16 inches—yellowish brown silt loam
16 to 22 inches—yellowish brown silty clay loam that has brownish mottles
22 to 42 inches—yellowish brown, strong brown, and light brownish gray extremely gravelly silty clay loam fragipan
42 to 60 inches—yellowish red, light brownish gray, and yellowish brown very gravelly silty clay

Inclusions

- Mountview, Biffle, and Ironcity soils on similar landscapes

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Soil reaction: Moderately acid to very strongly acid, except where lime has been added
Flood hazard: None
High water table: Perched above the fragipan at a depth of about 1.5 to 2.5 feet
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.

Suitable management practices:
- Planting crops later in the spring improves plant germination and early growth.

Capability subclass: 2e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the seasonal wetness, only hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.
- A perched water table limits grazing for several days at a time during winter and early spring.

Suitable management practices:
- Grazing should be deferred until some time from late spring to early fall.
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Suited
Trees suitable for planting: Chestnut oak, Virginia pine, white oak, and eastern redcedar
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- A seasonally perched water table and restricted permeability in the subsoil are major limitations affecting septic tank absorption fields.

LbC—Lax silt loam, 5 to 12 percent slopes

Setting

Landscape position: Uplands in the central part of the county
Shape of areas: Irregular

Size of areas: 5 to 40 acres
Major uses: Woodland

Typical Profile

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

Subsoil:
6 to 16 inches—yellowish brown silt loam
16 to 22 inches—yellowish brown silty clay loam that has brownish mottles
22 to 42 inches—yellowish brown, strong brown, and light brownish gray extremely gravelly silty clay loam fragipan
42 to 60 inches—yellowish red, light brownish gray, and yellowish brown very gravelly silty clay

Inclusions

- Mountview and Ironcity soils on similar landscapes
- Biffle soils on steep side slopes

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Soil reaction: Moderately acid to very strongly acid, except where lime has been added
Flood hazard: None
High water table: Perched above the fragipan at a depth of about 1.5 to 2.5 feet
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.

Suitable management practices:
- Planting crops later in the spring improves plant germination and early growth.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the seasonal wetness, only hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.
- A perched water table limits grazing for several days at a time during winter and early spring.

Suitable management practices:
- Grazing should be deferred until some time from late spring to early fall.
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Suited

Trees suitable for planting: Chestnut oak, Virginia pine, white oak, and eastern redcedar
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- A seasonally perched water table and restricted permeability in the subsoil are major limitations affecting septic tank absorption fields.

Suitable management practices:
- Increasing the size of the absorption field and adding suitable fill material on the surface help to overcome the restricted permeability.

Le—Lee gravelly silt loam, frequently flooded

Setting

Landscape position: Flood plains throughout the county
Shape of areas: Irregular
Size of areas: 10 to 25 acres
Major uses: Woodland

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown gravelly silt loam

Subsoil:
6 to 20 inches—dark gray gravelly silt loam
20 to 35 inches—dark gray gravelly silt loam that has grayish mottles
35 to 60 inches—dark gray gravelly silt loam that has grayish mottles

Inclusions

- Riverby soils and Lobelville soils on the same landscapes

Important Soil Properties and Features

Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Moderately acid to very strongly acid
Flood hazard: Frequent; some areas are ponded for short periods of time
High water table: Seasonal, at the surface to a depth of 0.5 foot in winter and spring
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- Seasonal wetness and frequent flooding limit the production and harvest of crops.

Capability subclass: 4w

Pasture and hayland

Suitability: Poorly suited
General management considerations:
- This map unit is poorly suited to pasture and hay because of the frequent flooding and seasonal wetness.

Suitable management practices:
- In some areas of the unit where the flooding is less severe, water-tolerant plants, such as tall fescue and white clover, can be grown for pasture.

Woodland

Suitability: Suited to water-tolerant trees
Trees suitable for planting: Sweetgum, American sycamore, yellow-poplar, and swamp white oak
General management considerations:
- This map unit provides excellent habitat for wetland wildlife.
- The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability of log landings, a hazard of soil rutting, and the suitability of roads. See table 8, parts I and II.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

Lo—Lobelville silt loam, occasionally flooded

Setting

Landscape position: Flood plains throughout the county
Shape of areas: Irregular
Size of areas: 10 to 25 acres
Major uses: Woodland

Typical Profile

Surface layer:
0 to 8 inches—yellowish brown silt loam

Subsoil:
8 to 15 inches—brown silt loam
15 to 34 inches—brown gravelly silt loam that has brownish mottles
34 to 45 inches—light brownish gray gravelly silt loam
45 to 60 inches—grayish brown very gravelly loam

Inclusions

- Riverby and Lee soils on the same landscapes

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Moderately acid or strongly acid, except where lime has been added
Flood hazard: Occasional

High water table: At a depth of 2.5 to 3.0 feet from December to April
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited
General management considerations:
- Most locally adapted crops can be grown, and good yields can be attained.
- In this map unit small grains produce good yields but can be damaged by the occasional flooding.

Suitable management practices:
- Seasonal flooding occurs in winter and early spring, but it is not a limitation for management.

Capability subclass: 2w

Pasture and hayland

Suitability: Well suited
General management considerations:
- Because of the seasonal wetness, only hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, eastern cottonwood, sweetgum, American sycamore, and swamp white oak
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

MnD—Minvale gravelly silt loam, 12 to 20 percent slopes

Setting

Landscape position: Footslopes and benches along the Buffalo River
Shape of areas: Irregular
Size of areas: 5 to 10 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown gravelly silt loam

Subsoil:
5 to 12 inches—strong brown gravelly silt loam

12 to 32 inches—red gravelly silty clay loam that has brownish mottles
32 to 65 inches—red gravelly silty clay loam that has brownish and yellowish mottles

Inclusions

- Pickwick soils on similar landscapes
- Tarklin and Humphreys soils on the lower landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Slightly acid to very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- This soil should not be used continuously as cropland because of the slope and the high erosion potential.

Suitable management practices:
- Areas used as cropland should only be cultivated on the contour, using a rotation system in which the land remains in a vegetative cover for several seasons following cultivation.
- Practices such as no-till planting and contour stripcropping reduce the hazards of water erosion and runoff.

Capability subclass: 4e

Pasture and hayland

Suitability: Suited
General management considerations:
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, shortleaf pine, black walnut, and southern red oak
General management considerations:
- The main limitations for timber management are limitations affecting the suitability of log landings, a hazard of soil rutting, a hazard of erosion on roads and trails, the suitability of roads, the suitability of mechanical planting, and the suitability for mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.

MtB—Mountview silt loam, 2 to 5 percent slopes

Setting

Landscape position: Uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 20 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 8 inches—yellowish brown silt loam

Subsoil:
8 to 24 inches—yellowish brown silt loam
24 to 31 inches—yellowish red silty clay loam that has reddish and brownish mottles
31 to 39 inches—red silty clay that has brownish and reddish mottles
39 to 65 inches—red clay that has brownish and reddish mottles

Inclusions

- Ironcity and Dickson soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained or moderately well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Moderately acid to very strongly acid, except where lime has been added
Flood hazard: None
High water table: Perched between depths of 1.8 and 2.0 feet for short periods of time from December to March
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited
General management considerations:
- Most locally adapted crops can be grown, and good yields can be attained.

Suitable management practices:
- No-till planting, contour farming, and stripcropping help to control erosion and maintain productivity.

Capability subclass: 2e

Pasture and hayland

Suitability: Well suited
General management considerations:
- This soil has no significant limitations affecting pasture and hayland.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Shortleaf pine, yellow-poplar, southern red oak, and white oak

General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Suited
General management considerations:
- The permeability in the subsoil is a limitation affecting septic tank absorption fields.
- Low strength is a major limitation affecting local roads and streets.

Suitable management practices:
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.
- Increasing the size of the absorption field and placing filter lines on the contour help to overcome the restricted permeability and the slope.
- Backfilling deep cuts with material that has a low shrink-swell potential and diverting runoff away from buildings help to prevent possible structural damage to dwellings.

MtC2—Mountview silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 15 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 8 inches—yellowish brown silt loam

Subsoil:
8 to 24 inches—yellowish brown silt loam
24 to 31 inches—yellowish red silty clay loam that has reddish and brownish mottles
31 to 39 inches—red clay that has brownish and reddish mottles
39 to 65 inches—red clay that has brownish and reddish mottles

Inclusions

- Ironcity and Lax soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained or moderately well drained
Permeability: Moderate
Available water capacity: High
Soil reaction: Moderately acid to very strongly acid, except where lime has been added
Flood hazard: None
High water table: Perched between depths of 1.8 and 2.0 feet for short periods of time from December to March
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited

General management considerations:
- Most climatically adapted crops grow well if management includes erosion control.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Shortleaf pine, yellow-poplar, southern red oak, and white oak
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Suited
General management considerations:
- The slope and slow percolation are the main limitations affecting septic tank absorption fields.
- Low strength and the slope are major limitations affecting local roads and streets.

Suitable management practices:
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.

PaB—Paden silt loam, 2 to 5 percent slopes

Setting

Landscape position: Stream terraces along the Buffalo River and tributaries throughout the county (fig. 9)
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 15 inches—yellowish brown silt loam
15 to 21 inches—yellowish brown silt loam
21 to 30 inches—light brownish gray and yellowish brown silt loam fragipan
30 to 48 inches—yellowish brown silt loam fragipan
48 to 60 inches—strong brown, gray, and red clay loam

Inclusions

- Pickwick and Humphreys soils on similar landscapes

Figure 9.—No-till corn in an area of Paden silt loam, 2 to 5 percent slopes. Undulating stream terraces along the Buffalo River are well suited to row crops.

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Soil reaction: Moderately acid to very strongly acid, except where lime has been added
Flood hazard: None
High water table: Perched at a depth of about 2.0 to 2.5 feet from December to April
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- The seasonal wetness in winter and spring can restrict rooting depth and inhibit plant germination.

Suitable management practices:
- Planting crops later in the spring improves plant germination and early growth.

Capability subclass: 2e

Pasture and hayland

Suitability: Suited
General management considerations:
- Because of the seasonal wetness, only hay and pasture plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.
- A perched water table limits grazing for several days at a time during winter and early spring.

Suitable management practices:
- Grazing should be deferred until some time from late spring to early fall.
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, southern red oak, and white oak
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- A seasonally perched water table and restricted permeability in the subsoil are major limitations.

Suitable management practices:
- Using subsurface drains or open ditches lowers the water table around areas of septic tank filter fields and dwellings with basements.
- Increasing the size of the absorption field or adding suitable fill material on the surface helps to overcome the restricted permeability.
- Providing drainage and diverting runoff away from foundations reduce the wetness around small commercial buildings and dwellings.
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.

PkB—Pickwick silt loam, 2 to 5 percent slopes

Setting

Landscape position: Stream terraces along the Buffalo River
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 7 inches—yellowish brown silt loam

Subsoil:
7 to 20 inches—yellowish red silty clay loam
20 to 42 inches—red silty clay loam
42 to 60 inches—yellowish red silty clay

Inclusions

- Minvale and Paden soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Moderately acid or strongly acid, except where lime has been added
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited
General management considerations:
- Most locally adapted crops can be grown, and good yields can be attained.
- This soil is susceptible to erosion, which can result in the removal of valuable topsoil.

Suitable management practices:
- No-till planting, contour farming, and stripcropping help to control erosion and maintain productivity.

Capability subclass: 2e

Pasture and hayland

Suitability: Well suited
General management considerations:
- This soil has no significant limitations affecting forage production if erosion is controlled.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, loblolly pine, white oak, and southern red oak
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Well suited
General management considerations:
- Low strength is a limitation affecting local roads and streets.
- The permeability in the subsoil is a limitation affecting septic tank absorption fields.

Suitable management practices:
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.
- Increasing the size of the absorption field helps to overcome the restricted permeability.

PkC2—Pickwick silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Stream terraces along the Buffalo River
Shape of areas: Irregular
Size of areas: 5 to 20 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 7 inches—yellowish brown silt loam

Subsoil:
7 to 20 inches—yellowish red silty clay loam
20 to 42 inches—red silty clay loam
42 to 60 inches—yellowish red silty clay

Inclusions

- Minvale and Paden soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Slightly acid to strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- This soil is susceptible to erosion, which can result in the removal of valuable topsoil.

Suitable management practices:
- No-till planting, contour farming, and stripcropping help to control erosion and maintain productivity.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, loblolly pine, white oak, and southern red oak

General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Suited
General management considerations:
- Low strength is a limitation affecting local roads and streets.
- The permeability in the subsoil and the slope are limitations affecting septic tank absorption fields.
- The slope and shrink-swell potential are limitations affecting dwellings and commercial buildings.

Suitable management practices:
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.
- Increasing the size of the absorption field and placing filter lines on the contour help to overcome the restricted permeability and the slope.

PkC3—Pickwick silty clay loam, 5 to 12 percent slopes, severely eroded

Setting

Landscape position: Stream terraces along the Buffalo River
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 6 inches—yellowish brown silty clay loam

Subsoil:
6 to 32 inches—yellowish red silty clay loam
32 to 42 inches—red silty clay loam
42 to 80 inches—yellowish red silty clay

Inclusions

- Minvale soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Slightly acid to strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited

General management considerations:
- This soil should not be used continuously as cropland because of the slope and a high erosion potential.
- Accelerated erosion by water can remove valuable topsoil and adversely affect rooting depth.

Suitable management practices:
- Practices such as no-till planting and contour stripcropping reduce the hazards of water erosion and runoff.
- Using a cropping system that includes grasses, legumes, or grass-legume mixtures, rotating crops, using minimum tillage, and growing cover crops help to maintain or improve tilth.

Capability subclass: 4e

Pasture and hayland

Suitability: Well suited
General management considerations:
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Stocking rates should be adjusted to prevent overgrazing and erosion.
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, loblolly pine, white oak, and southern red oak
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, part I.

Residential and commercial uses

Suitability: Suited
General management considerations:
- Low strength is a limitation affecting local roads and streets.
- The permeability in the subsoil and the slope are limitations affecting septic tank absorption fields.
- The slope and shrink-swell potential are limitations affecting dwellings and commercial buildings.

Suitable management practices:
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.
- Increasing the size of the absorption field and placing filter lines on the contour help to overcome the restricted permeability and the slope.

Pt—Pits, gravel

Setting

Landscape position: Chert and gravel pits in the uplands; many areas have nearly vertical walls of exposed chert
Major uses: Most areas have been mined for sources of roadfill

Use and Management

Cropland, pasture, hayland, woodland, and residential and commercial uses

Suitability: Not suited
General management considerations:
- Areas of this map unit are extremely acid, are droughty, and have a restricted rooting depth.
- Other sites in the survey area should be considered for these uses.

Capability subclass: None assigned

Rb—Riverby gravelly sandy loam, frequently flooded

Setting

Landscape position: Flood plains throughout the county
Shape of areas: Irregular
Size of areas: 5 to 75 acres
Major uses: Pasture and hay

Typical Profile

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

Subsoil:
6 to 10 inches—brown gravelly sandy loam
10 to 20 inches—yellowish brown and dark yellowish brown extremely gravelly coarse sandy loam
20 to 31 inches—dark yellowish brown and pale brown extremely gravelly coarse sandy loam
31 to 39 inches—dark yellowish brown and pale brown extremely gravelly loamy coarse sand
39 to 48 inches—yellowish brown extremely gravelly coarse sandy loam
48 to 60 inches—dark yellowish brown extremely gravelly loamy coarse sand

Inclusions

- Trace, Lobelville, and Lee soils on similar landscapes

Important Soil Properties and Features

Drainage class: Excessively drained
Permeability: Moderately rapid
Available water capacity: Moderate
Soil reaction: Moderately acid to neutral
Flood hazard: Frequent
High water table: At a depth of 4 to 5 feet from December to April
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- The content of gravel in the surface layer may hinder the use of tillage equipment.

Capability subclass: 4s

Pasture and hayland

Suitability: Suited
General management considerations:
- Grazing when the soil is wet causes compaction and poor tilth.

Suitable management practices:
- The selection of drought-resistant grasses, proper weed control, and controlled grazing help to keep the pasture and soil in satisfactory condition.

Woodland

Suitability: Suited
Trees suitable for planting: Sweetgum, American sycamore, and yellow-poplar
General management considerations:
- The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability of log landings, the suitability of roads, the suitability of mechanical planting, and the suitability of mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- Flooding is a limitation affecting septic tank absorption fields, dwellings with and without basements, and local roads and streets.

ROF—Rock outcrop, very steep

This map unit consists of vertical rock bluffs along the Buffalo River and many of the major streams in the county. Slopes range from 60 to more than 100 percent. Most of this unit consists of siltstone and limestone bedrock with a few areas of talus on rock benches. A few areas have thin layers of loamy material less than 12 inches deep over hard bedrock. The majority of these areas are sparsely vegetated; eastern redcedar and shrubs grow in rock seams and along ledges where talus material has accumulated.

No capability class is assigned to this map unit.

SaD—Saffell gravelly silt loam, 12 to 20 percent slopes

Setting

Landscape position: Uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 40 acres
Major uses: Woodland

Typical Profile

Surface layer:
0 to 5 inches—brown gravelly silt loam

Subsoil:
5 to 12 inches—yellowish brown gravelly silt loam
12 to 28 inches—strong brown very gravelly clay loam
28 to 45 inches—yellowish red extremely gravelly sandy clay loam
45 to 60 inches—strong brown and yellowish red very gravelly sandy loam

Inclusions

- Ironcity and Biffle soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- The slope and a high erosion potential are major limitations affecting cropland.

Capability subclass: 6s

Pasture and hayland

Suitability: Suited
General management considerations:
- Because of the low amount of available water, the soil tends to be droughty and yields are reduced.
- If the plants are overgrazed or if plant stands are poor, the slope increases the hazard of erosion.

Suitable management practices:
- Forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, should be selected for planting.
- Stocking rates should be adjusted to prevent overgrazing and erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Chestnut oak, Virginia pine, mockernut hickory, white oak, and eastern redcedar
General management considerations:
- The main limitations for timber management are limitations affecting the suitability of log landings, a hazard of erosion on roads and trails, the suitability of roads, the suitability for mechanical planting, and the suitability for mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- The slope and the permeability of the subsoil are the main limitations affecting septic tank filter fields.

Suitable management practices:
- Planning and designing local roads and streets in the less sloping areas and placing them on the contour reduce construction costs and minimize the hazard of erosion.

SaE—Saffell gravelly silt loam, 20 to 40 percent slopes

Setting

Landscape position: Uplands in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Woodland

Typical Profile

Surface layer:
0 to 5 inches—brown gravelly silt loam

Subsoil:
5 to 12 inches—yellowish brown gravelly silt loam
12 to 28 inches—strong brown very gravelly clay loam
28 to 45 inches—yellowish red extremely gravelly sandy clay loam
45 to 60 inches—strong brown and yellowish red very gravelly sandy loam

Inclusions

- Biffle soils on similar landscapes

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Unsuited
General management considerations:
- The slope, a high erosion potential, and the high runoff rate are major limitations affecting cropland.

Capability subclass: 7s

Pasture and hayland

Suitability: Poorly suited
General management considerations:
- The slope, a high runoff rate, and the hazard of erosion are limitations affecting pasture management.
- The high runoff rate can cause a moisture deficit in late summer, and stands of less hardy plants may suffer from moisture stress.

Suitable management practices:
- Selecting forage plants that can tolerate droughty conditions, such as improved bermudagrass and sericea lespedeza, is recommended.
- Reseeding the pasture may be necessary if the plant cover does not provide an adequate stand of desirable species for forage production and erosion control.
- Stocking rates should be adjusted, especially in the steeper areas, to prevent overgrazing and erosion.

Woodland

Suitability: Suited
Trees suitable for planting: Chestnut oak, Virginia pine, mockernut hickory, white oak, and eastern redcedar
General management considerations:

- The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability of log landings, a hazard of erosion on roads and trails, the suitability of roads, the suitability for mechanical planting, and the suitability for mechanical site preparation. See table 8.

Residential and commercial uses

Suitability: Unsuited
General management considerations:

- Other sites in the survey area should be considered for residential and commercial uses.

SmC2—Sengtown-Mountview complex, 5 to 12 percent slopes, eroded

Setting

Landscape position: Ridgetops and hillsides in the northern part of the county
Shape of areas: Irregular
Size of areas: 15 to 25 acres
Major uses: Pasture and hayland

Composition

Sengtown soil and similar soils: 45 to 80 percent
Mountview soil and similar soils: 20 to 45 percent

Typical Profile

Sengtown

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

Subsoil:
2 to 10 inches—yellowish brown gravelly silt loam
10 to 18 inches—strong brown gravelly silty clay loam that has brownish and reddish mottles
18 to 29 inches—red gravelly silty clay that has yellowish mottles
29 to 65 inches—red gravelly clay that has brownish and grayish mottles

Mountview

Surface layer:
0 to 8 inches—yellowish brown silt loam

Subsoil:
8 to 24 inches—yellowish brown silt loam
24 to 31 inches—yellowish red silty clay loam that has reddish and brownish mottles
31 to 39 inches—red silty clay that has brownish and reddish mottles
39 to 65 inches—red clay that has brownish and reddish mottles

Inclusions

- Biffle and Lax soils on similar landscapes

Important Soil Properties and Features

Drainage class: Sengtown—well drained; Mountview—well drained or moderately well drained
Permeability: Moderate
Available water capacity: Sengtown—moderate; Mountview—high
Soil reaction: Sengtown—very strongly acid to moderately acid; Mountview—very strongly acid or strongly acid
Flood hazard: None
High water table: Deeper than 60 inches
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Moderately suited
General management considerations:
- Erosion is a major concern where cultivated crops are grown.
- Conservation practices are needed to minimize erosion and maintain soil productivity.

Suitable management practices:
- Minimum tillage, stripcropping, contour farming, and winter cover crops help to reduce runoff and control erosion.

Capability subclass: 3e

Pasture and hayland

Suitability: Well suited
General management considerations:
- Yields of pasture and hay are higher in areas of the Mountview soil than in areas of the Sengtown soil.

Suitable management practices:
- Deferred grazing, fertilization, and proper stocking rates help to keep the soils and forage in good condition.

Woodland

Suitability: Well suited
Trees suitable for planting: Shortleaf pine, southern red oak, and yellow-poplar
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Suited
General management considerations:
- The moderate shrink-swell potential and the slope are limitations affecting dwellings.
- The moderate permeability is a limitation affecting septic tank adsorption fields.
- Low strength is a limitation affecting local roads and streets.

Suitable management practices:
- Reinforcing footings and foundations helps to prevent the structural damage caused by shrinking and swelling.
- Increasing the size of the absorption field helps to overcome the restricted permeability.
- If the natural soils are to be used as base material, mixing them with sand and gravel improves soil strength and stability.

Ta—Taft silt loam

Setting

Landscape position: Upland flats, stream terraces, and depressions in the central part of the county
Shape of areas: Irregular
Size of areas: 5 to 50 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 12 inches—light yellowish brown silt loam
12 to 22 inches—light yellowish brown silt loam
22 to 26 inches—light brownish gray and grayish brown silt loam
26 to 45 inches—light yellowish brown silt loam fragipan that has grayish and brownish mottles
45 to 52 inches—light yellowish brown, gray, and yellowish brown silt loam fragipan
52 to 60 inches—red, brownish yellow, light brownish gray, and yellowish brown silty clay loam

Inclusions

- Dickson and Guthrie soils on similar landscapes

Important Soil Properties and Features

Drainage class: Somewhat poorly drained
Permeability: Slow
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid
Flood hazard: None
High water table: Perched above the fragipan at a depth of about 1.0 to 2.0 feet in winter and early in spring
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
- Seasonal wetness limits the production and harvest of some crops.

Suitable management practices:
- Because of the wetness early in spring, planting short-season annuals, such as soybeans and grain sorgham, is recommended.

Capability subclass: 3w

Pasture and hayland

Suitability: Well suited
General management considerations:
- A perched water table limits grazing for several weeks at a time during winter and early spring.

Suitable management practices:
- Plants that can tolerate short periods of wetness, such as fescue and white clover, should be selected for planting.
- Grazing should be deferred until some time from late spring to early fall.

Woodland

Suitability: Suited
Trees suitable for planting: Yellow-poplar, sweetgum, swamp white oak, and American sycamore
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- This map unit is poorly suited to most residential and commercial uses because of the seasonal wetness, the slow permeability of the subsoil, and the high shrink-swell potential.

TkC2—Tarklin gravelly silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Footslopes and stream terraces throughout the county
Shape of areas: Irregular
Size of areas: 5 to 10 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown gravelly silt loam

Subsoil:
5 to 22 inches—yellowish brown gravelly silt loam
22 to 60 inches—light brownish gray, light yellowish brown, and yellowish brown very gravelly silt loam fragipan

Inclusions

- Biffle soils on the steeper landscapes
- Humphreys soils on similar landscapes

Important Soil Properties and Features

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow in the fragipan
Available water capacity: Moderate
Soil reaction: Strongly acid or very strongly acid, except where lime has been added
Flood hazard: None
High water table: Perched above the fragipan at a depth of about 1.5 to 2.0 feet
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- Coarse fragments on or near the surface of the soil can hinder tillage and reduce the amount of moisture available to plants in dry years.

Suitable management practices:
- Practices that include no-till planting, contour cultivation, stripcropping, and growing cover crops increase soil moisture and minimize erosion.
- Using a cropping system that includes grasses, legumes, or grass-legume mixtures, rotating crops, and returning crop residue to the soil maintain or improve soil tilth.

Capability subclass: 3e

Pasture and hayland

Suitability: Suited
General management considerations:
- In dry years the low available water capacity can reduce hay yields for moisture-sensitive crops, such as alfalfa.

Suitable management practices:
- Rotating grazing areas, controlling weeds, and applying fertilizer annually maintain the quality and quantity of forage.

Woodland

Suitability: Well suited (fig. 10)
Trees suitable for planting: Chestnut oak, Virginia pine, white oak, and eastern redcedar
General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.
- Proper building designs and construction costs are the major considerations on sites that need to be excavated or filled for the construction of small commercial buildings or dwellings.

Suitable management practices:
- Increasing the size of the absorption field and placing filter lines on the contour help to overcome the restricted permeability and the slope.
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.

TmC2—Tarklin-Humphreys complex, 5 to 12 percent slopes, eroded

Setting

Landscape position: Footslopes and stream terraces throughout the county
Shape of areas: Irregular
Size of areas: 5 to 25 acres
Major uses: Pasture and hayland

Figure 10.—An area of Tarklin gravelly silt loam, 5 to 12 percent slopes, eroded. Trees are subject to windthrow during wet periods.

Composition

Tarklin soil: 40 percent
Humphreys soil: 50 percent
Minor soils: 10 percent

Typical Profile

Tarklin

Surface layer:
0 to 5 inches—dark grayish brown gravelly silt loam

Subsoil:
5 to 22 inches—yellowish brown gravelly silt loam
22 to 60 inches—light brownish gray, light yellowish brown, and yellowish brown very gravelly silt loam fragipan

Humphreys

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

Subsoil:
6 to 18 inches—dark yellowish brown gravelly silt loam
18 to 35 inches—brown gravelly silty clay loam
35 to 46 inches—yellowish brown very gravelly clay loam
46 to 60 inches—dark yellowish brown extremely gravelly clay loam

Inclusions

- Biffle soils on the higher landscapes
- Trace soils on similar landscapes
- Riverby soils on adjacent flood plains

Important Soil Properties and Features

Drainage class: Tarklin—moderately well drained; Humphreys—well drained
Permeability: Tarklin—moderate above the fragipan and slow in the fragipan; Humphreys—moderately rapid
Available water capacity: Moderate
Soil reaction: Moderately acid to very strongly acid, except where lime has been added
Flood hazard: None
High water table: Tarklin—perched above the fragipan at a depth of about 1.5 to 2.0 feet; Humphreys—seasonal, at a depth of 5.0 to 6.0 feet in seep areas in winter and early spring
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
General management considerations:
- Coarse fragments on or near the surface of the soil can hinder tillage and reduce the amount of moisture available to plants in dry years.

Suitable management practices:
- No-till planting, contour cultivation, stripcropping, and growing cover crops increase soil moisture and minimize erosion.
- Using a cropping system that includes grasses, legumes, or grass-legume mixtures, rotating crops, and returning crop residue to the soil maintain or improve tilth.

Capability subclass: 3e

Pasture and hayland

Suitability: Suited
General management considerations:
- In dry years the low available water capacity can reduce yields for moisture-sensitive hay crops, such as alfalfa.

Suitable management practices:
- Rotating grazing areas, controlling weeds, and applying fertilizer annually maintain the quality and quantity of forage.

Woodland

Suitability: Well suited
Trees suitable for planting: Chestnut oak, Virginia pine, white oak, and eastern redcedar

General management considerations:
- The main limitations affecting timber management are a hazard of soil rutting and a hazard of erosion on roads and trails. See table 8, parts I and II.

Residential and commercial uses

Suitability: Poorly suited
General management considerations:
- Other sites in the survey area should be considered for residential and commercial uses.
- Proper building designs and construction costs are the major considerations on sites that need to be excavated or filled for the construction of small commercial buildings or dwellings.

Suitable management practices:
- Increasing the size of the absorption field and placing filter lines on the contour help to overcome the restricted permeability and the slope.
- If the soils are to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase soil strength and stability.

TrA—Trace silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landscape position: Stream terraces along the Buffalo River and along tributaries throughout the county
Shape of areas: Irregular
Size of areas: 20 to 150 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 9 inches—dark yellowish brown silt loam
9 to 24 inches—brown silt loam
24 to 35 inches—brown silty clay loam
35 to 38 inches—dark yellowish brown very gravelly silt loam
38 to 80 inches—yellowish brown extremely gravelly loam

Inclusions

- Humphreys, Riverby, and Lobelville soils on similar landscapes
- Areas of soils that have loam subsoils

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate in the solum and rapid or very rapid in the substratum
Available water capacity: Moderate
Soil reaction: Moderately acid or strongly acid, except where lime has been added
Flood hazard: Occasional
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Suited
General management considerations:
• The seasonal wetness and flooding limit the production and harvest of some crops.
Suitable management practices:
• Because of the wetness and the hazard of flooding early in spring, planting short-season annuals, such as soybeans and grain sorghum, is recommended.
Capability subclass: 2w

Pasture and hayland

Suitability: Suited
General management considerations:
• Hay and pasture plants that can tolerate periodic inundation and seasonal wetness, such as fescue and white clover, should be selected for planting.

Woodland

Suitability: Suited
Trees suitable for planting: Yellow-poplar, sweetgum, loblolly pine, black walnut, and cherrybark oak
General management considerations:
• The main limitations for timber management are limitations affecting the construction of haul roads and log landings, the suitability of log landings, a hazard of soil rutting, and the suitability of roads. See table 8, parts I and II.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
• This soil is unsuited to residential and commercial uses because of the flooding, the very slow permeability, and the seasonal wetness.

TrB—Trace silt loam, 2 to 5 percent slopes, rarely flooded

Setting

Landscape position: Stream terraces along the Buffalo River and tributaries throughout the county
Shape of areas: Irregular
Size of areas: 15 to 100 acres
Major uses: Pasture and hayland

Typical Profile

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 9 inches—dark yellowish brown silt loam
9 to 24 inches—brown silt loam
24 to 35 inches—brown silty clay loam
35 to 38 inches—dark yellowish brown very gravelly silt loam
38 to 80 inches—yellowish brown extremely gravelly loam

Inclusions

- Humphreys, Riverby, and Lobelville soils on similar landscapes
- Areas of soils that have loam subsoils

Important Soil Properties and Features

Drainage class: Well drained
Permeability: Moderate in the upper part and rapid or very rapid in the lower part
Available water capacity: High
Soil reaction: Moderately acid or strongly acid, except where lime has been added
Flood hazard: Rare
High water table: None
Depth to bedrock: More than 60 inches

Use and Management

Cropland

Suitability: Well suited
General management considerations:
- This soil has no significant limitations affecting cropland.

Suitable management practices:
- No-till planting, contour cultivation, and stripcropping help to control erosion and maintain productivity.

Capability subclass: 2e

Pasture and hayland

Suitability: Well suited
General management considerations:
- This soil has no significant limitations affecting forage production.

Suitable management practices:
- The quality and quantity of forage can be maintained by rotating grazing areas, controlling weeds, and applying fertilizer annually.

Woodland

Suitability: Well suited
Trees suitable for planting: Yellow-poplar, sweetgum, loblolly pine, black walnut, and cherrybark oak
General management considerations:
- The main limitation affecting timber management is a hazard of soil rutting. See table 8, part I.

Residential and commercial uses

Suitability: Well suited
General management considerations:
- Low strength is a limitation affecting local roads and streets.

Suitable management practices:
- If the soil is to be used as a base for roads and streets, mixing the upper part with coarser textured material helps to increase the soil's strength and stability.

Ud—Udarents, abandoned

Setting

Landscape position: Unreclaimed phosphate mines, iron mines, and chert pits throughout the county

Shape of areas: Irregular
Size of areas: 5 to 20 acres
Major uses: Idle land

Important Soil Properties and Features

Drainage class: Well drained to somewhat excessively drained
Permeability: Moderate or moderately slow
Available water capacity: Low
Soil reaction: Moderately acid to very strongly acid, except where lime has been added
Flood hazard: None
High water table: None
Depth to bedrock: 2 to more than 5 feet

Use and Management

Cropland, pasture, and hayland

Suitability: Not suited
General management considerations:
- This map unit is unsuited to these uses because it is extremely acid and droughty and has a restricted rooting depth.

Capability subclass: None assigned

Woodland

Suitability: Poorly suited
Trees suitable for planting: Virginia pine, eastern redcedar, and chestnut oak
General management considerations:
- The soils are variable; onsite investigation is required before planning any timber management.

Residential and commercial uses

Suitability: Unsuited
General management considerations:
- The soils are extremely variable; onsite investigation is required before planning any residential or commercial uses.

Ur—Urban land

This map unit is in the city of Hohenwald and its surrounding perimeter. Streets, parking lots, sidewalks, buildings, and other structures cover 85 percent or more of the soil surface. There are some small open areas not covered by concrete, asphalt, or buildings. The soils in these areas, however, have been altered by the process of urbanization, and many are fill material from an unknown source. Onsite investigation is needed to determine any specific interpretations for these sites.

No capability class is assigned to this map unit.

W—Water

This map unit consists of areas inundated by water all year. It generally includes rivers, lakes, and ponds.

No capability class is assigned to this map unit.

Use and Management of the Soils

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

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

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; 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, slightly limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately well 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

Figure 11.—Hay production is an important enterprise in Lewis County. The quality and quantity of forage can be maintained by following a good pasture management system.

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

Gregory L. Brann, Grazing Land Specialist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, 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.

Pasture and hayland are the major uses of the cleared land in Lewis County (fig. 11). Approximately 1,000 acres are used for row crop production. The primary row crops are corn, soybeans, tobacco, and small grains. Row crops make up approximately one-third of the farm income.

The soils in the county are better suited to pasture than row crops because areas are too small and sloping for intensive cropping. Crop acreage could be increased by applying a system of erosion control and using the best management practices.

Additions of lime and fertilizer for all cropland, hayland, and pasture should be applied according to University of Tennessee soil test recommendations and desired production.

The main pasture and hay grasses are tall fescue and orchardgrass. The most common legumes are ladino clover, red clover, annual lespedeza, and sericea lespedeza. It is recommended that cool-season grasses be seeded in the fall with legumes.

Approximately two-thirds of all farm income is derived from livestock production. The most important practice needed on pasture is management of grazing height. Grazing height is most effectively managed through rotational grazing. Combinations of cool-season grasses, such as tall fescue or orchardgrass, and legumes, such as ladino and red clover, benefit from pasture that is maintained at a height of 3 to 8 inches. Maintaining a minimum of 3 inches of vegetation allows the plant to most effectively convert solar energy into forage. Overgrazing reduces leaf area and plant vigor and ultimately reduces forage production. Other practices that benefit pasture include removing livestock in the fall, weed control, applying nutrients according to soil tests, and renovating pastureland by introducing legume-grass mixtures when the grass stand is not adequate. Legumes are best maintained in a stand by maintaining proper soil fertility and managing forage so that legumes are not shaded. Weeds can be controlled in pastures by rotational grazing, mowing, and proper use of herbicides (all pesticides should be applied according to directions on the label). Well managed pastures that have a good stand of grasses and legumes contain fewer weeds.

Forage systems can benefit by managing or establishing approximately 25 percent of the acreage in warm-season vegetation. Many pastures presently have bermudagrass, crab grass, Dallis grass, Johnson grass, and annual lespedeza or sericea lespedeza. These forages could be managed for higher production by maintaining adequate leaf area for regrowth and delaying fertilization until late spring. Hybrid sorghum crosses, pearl millet, and sudangrass make good summer pasture or hay; however, the high cost of annual establishment may offset benefits. Small grains and annual ryegrass may be double cropped with summer forages. Winter annuals provide good grazing in late fall and early spring.

If improving wildlife habitat and increasing forage production are goals, native warm-season grasses, such as switchgrass, eastern gamagrass, big bluestem, little bluestem, and indiangrass, can greatly benefit the forage-wildlife system. The native grasses, which have the most potential for forage production, are eastern gamagrass and switchgrass. Delaying mowing of any forage until after August 15 provides some wildlife benefits. The minimum mowing height for native grasses is 6 inches. In addition, 5-acre or larger plantings of the native grasses highly benefit ground-nesting birds.

Pasture use could also be improved by increasing the availability of quality water for livestock. Ideally, beef cattle should not have to travel more than 800 feet to water. The best water supply for animal well-being and overall water quality is water from a trough. Although ponds can provide water to livestock, the water quality is questionable, disease can be spread, and livestock can drown in a pond (by falling through ice, when calving, or when ill with a severe fever). Streams can also be used for livestock water; however, due to possible detriments to water quality, cattle should be allowed only limited access through a rock armored area or, by using rotational grazing, be in contact with the stream for only a short period of time.

Presently 5,000 acres in Lewis County are used for hay production. Most of the hay harvested is surplus growth of grass-legume pastures. Rotational grazing allows more efficient use of pastureland and leaves more land for hay production. Grass hay crops should be cut at the boot to early head stage; legumes should be harvested in the bud stage, which is just prior to blooming. Hay that is cut late, after seed heads mature, is less palatable and lower in protein and energy. Cutting perennial hay crops too short causes premature loss of the stand.

The most important management concern on cropland in the county is soil erosion. Soils with more than 2 percent slopes have an erosion hazard when crops are grown using conventional tillage. Soil loss through erosion reduces productivity due to the loss of organic matter, a decreased rooting depth, and a reduced available water-holding capacity. Soil crusting is also a great problem and can reduce plant emergence. Most of the plant nutrients and crop protection chemicals are in the soil's surface layer and can easily be lost through erosion. Erosion control reduces the pollution of streams by sediment, fertilizer, and pesticides. Water quality for recreational uses, fish, and wildlife is improved when erosion is controlled. In addition, erosion control helps to maintain drainageways, culverts, and pumps.

A resource management system that provides a protective surface cover, reduces runoff, and increases infiltration rates helps to reduce erosion losses. On livestock farms, grasses and legumes reduce runoff and erosion and improve soil-moisture-air relationships. Legumes take nitrogen from the air, thus reducing the amount of nitrogen fertilizer needed.

Conservation tillage is one way to reduce erosion on sloping cropland. It provides a more protective surface cover for longer periods, which reduces runoff and increases infiltration rates. It also increases the amount of organic material added to the soil, minimizes soil compaction, and reduces the amount of needed work time and fuel. Crop residue management, field borders, the inclusion of grasses and legumes in the crop rotation, and grass waterways also help to control erosion.

Yields per Acre

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

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

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

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

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

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops *(13)*. 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 forestland or for engineering purposes.

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

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, 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, 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, forestland, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Prime Farmland

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

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

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

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading “Detailed Soil Map Units.”

Forest Productivity and Management

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 7, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available at the local office 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 table 8, parts I through IV, 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 well 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 table indicate the 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 specified forest management practice (1.00) and the point at which the soil feature is not a limitation (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 at the local office of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil 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 well 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 well 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 well 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

The soils of the survey area are rated in table 9, parts I and II, 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. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and 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 0.00 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 table 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 table 9 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

Prepared by Michael E. Zeman, State Biologist, Natural Resources Conservation Service.

Wildlife is an important natural resource in Lewis County. It is a source of revenues through sport hunting and recreational opportunities, such as photography and fishing. Popular game species include bobwhite quail, cottontail rabbit, whitetail deer, mourning dove, gray squirrel, and fox squirrel. Whitetail deer is the most popular game animal in the county. Deer populations are moderate and have grown considerably over the past 30 years. Harvest records from the Tennessee Wildlife Resources Agency (TWRA) indicate that approximately 80 deer were harvested in 1967, while nearly 2,000 were harvested in 1996. The eastern wild turkey was eliminated from the county by the 1950's but has since been reintroduced. Turkey numbers are low overall, but parts of the county now have good populations due to the TWRA restoration program and management of the habitat. Bobwhite quail numbers are low in the county.

Much of the county is forested or in pastures of tame grass, such as fescue and hay crops, which have lower quality habitat. The highest wildlife populations occur in areas where cropland fields are adjacent to cover areas of low, brushy fencerows and in idle areas of native warm-season grasses. Mourning dove populations are typically low in the county. Fall migrants of this game bird typically utilize crop fields, such as corn, grain sorghum, or soybean fields, or fields recently planted to wheat. The county is low in production of grain crops.

Cottontail rabbit populations are also low in the county. The highest numbers occur where agricultural lands are intermixed with low, brushy cover and native grasses provide suitable escape cover near food sources.

The county has three species of squirrels, and all occur in good numbers. Both the gray squirrel and the primarily nocturnal southern flying squirrel occur in good to excellent numbers throughout the hardwood forests. The fox squirrel typically occurs in lower numbers. It generally inhabits areas along woodland edges and woody fencerows near agricultural lands utilized for crop production. Squirrel populations are highly variable from year to year, depending on the production of hard mast (acorns, hickory, and beech nuts).

Waterfowl numbers are low in the county. The most common species migrating through the county include the wood duck, mallard, gadwall, and Canada goose. The highest numbers typically occur along the Buffalo River in the southwestern corner of the county and along the main creek channels associated with wetland habitat. Upland farm ponds and small lakes are often used for resting and roosting.

Several species of furbearers occur in the county. Wetland furbearers include mink, muskrat, and beaver. Upland furbearers are common and abundant throughout the county. Species include bobcat, opossum, raccoon, gray fox, striped skunk, and coyote.

Many nongame species occur in abundance throughout the county. Different species of songbirds, both resident and migratory, are associated with different plant communities. Woodland birds include the Carolina chickadee, tufted titmouse, pileated woodpecker, and warblers. Openland birds include robins, meadowlarks, and various sparrows. Common birds of prey include the red-tailed hawk, sparrow hawk, barred owl, and screech owl. Common reptiles and amphibians include the eastern box turtle, hognose snake, copperhead snake, bullfrog, and dusky salamander.

State and federally listed threatened or endangered wildlife species that may occur in the county include the spotfin chub, pale lilliput pearly mussel, coppercheek darter, longhead darter, Tennessee yellow-eyed grass, Bachman's sparrow, and Bewick's wren. Species that may migrate through the county include the bald eagle, peregrine falcon, osprey, sharp-shinned hawk, and Cooper's hawk.

Lewis County has a total of approximately 216 miles of warm-water streams according to a TWRA stream survey. Major streams in the county include the Buffalo River, Trace Creek, Cane Creek, Rockhouse Creek, and Big Swan Creek, which is a tributary of the Duck River. These and other streams provide approximately 1,600 acres of aquatic habitat and support populations of largemouth bass, smallmouth bass, rock bass, bluegill sunfish, green sunfish, channel catfish, and several species of minnows and darters. Most of the streams are moderately productive with fair populations of warm-water fish.

Lewis County has several acres of natural wetlands, excluding artificial wetlands such as upland farm ponds. Most of the natural wetlands occur along stream courses in the county that have native plant communities consisting of bottomland hardwoods. Wetlands of bottomland hardwood provide some of the most productive wildlife habitat in the county. In addition, bottomland hardwoods improve the water quality of streams by removing nutrients and trapping sediment from upland runoff, lowering water temperatures by providing shade, and providing leaf litter that serves as the foundation for aquatic food chains.

Conservation practices can provide or improve quality wildlife habitat. On cropland, planned crop rotations and the use of crop residue can provide food and needed winter cover for many species of wildlife. On grasslands, deferred grazing by livestock and fencing can protect food plots and nesting cover and even protect fish habitat by providing streambank protection. Field borders and filter strips along streams can protect the water quality and provide food, cover, and travel lanes for many species of wildlife, especially when native, tall warm-season grasses are used. Selective thinning of woodlands can be done so that den and quality mast-producing trees are protected. Other practices that can improve wildlife habitat include wildlife upland habitat management, wildlife wetland habitat management, fishpond management, pasture and hay management, livestock exclusion, and woodland improvement.

Some practices are harmful to wildlife. The most common are indiscriminate burning and use of pesticides, heavy grazing, complete clean mowing in the growing (nesting) season, clean fall plowing, extensive clearcutting of timber, draining and clearing of wetlands, and removal of den and all mast-producing trees.

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

In table 10, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

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

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

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

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 tall fescue, orchardgrass, annual lespedeza, 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, panicum, carpetgrass, switchgrass, and greenbrier.

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, hawthorn, dogwood, hickory, and blackberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are shrub lespedeza, 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 and eastern redcedar.

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, 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. Examples of shallow water plants are coontail, common duckweed, spatterdock, cattail, water lily, arrowhead, and water milfoil.

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.

Figure 12.—An area of Lee gravelly silt loam, frequently flooded. This soil is well suited to wetland wildlife habitat.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas (fig. 12).

Hydric Soils

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

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology *(3, 8, 9, 10)*. Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part *(4)*. These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established *(5)*. These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” *(12)* and “Keys to Soil Taxonomy” *(11)* and in the “Soil Survey Manual” *(14)*.

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” *(6)*.

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

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site *(6, 8)*.

Gu Guthrie silt loam, ponded
Le Lee gravelly silt loam, frequently flooded

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

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

Ta Taft silt loam

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 estimated data and test data in the “Soil Properties” section.

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. Table 11, parts I and II, 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 table 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. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and 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 0.00 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

Table 12, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and 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 0.00 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.

Figure 13.—Biffle soils are a good source of gravel for use in road construction.

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 13, parts I and II, give 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 (fig. 13). They are used in many kinds of construction. Specifications for each use vary widely. In table 13, only the probability 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 lowest layer of the soil contains sand or gravel, the soil is rated as a probable 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.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

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. 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.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, a cemented pan, or other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

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 15 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 *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

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 Properties

Table 16 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 16, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The 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.

Saturated hydraulic conductivity 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 micrometers per second (um/sec), 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.

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 table 16, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 16 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of coarse fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Water Features

Table 18 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 18 indicates, by month, depth to the top *(upper limit)* and base *(lower limit)* of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 18 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 19 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, 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.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(11, 12)*. 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 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, semiactive, thermic Typic Hapludults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

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” *(14)*. Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” *(12)* and in “Keys to Soil Taxonomy” *(11)*. 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.

Armour Series

The Armour series consists of very deep, well drained soils. These soils formed in old alluvium or in alluvium and the underlying clayey residuum of limestone. They are on stream terraces and footslopes along the Buffalo River and secondary streams throughout the county. Slopes range from 2 to 12 percent.

Typical pedon of Armour silt loam, 2 to 5 percent slopes; from Hohenwald, 2 miles southwest on Tennessee Highway 48, about 6.5 miles south on Rockhouse Road, 0.5 mile southeast on Allen Creek Road, 50 feet west in a field; Riverside Quadrangle; lat. 35 degrees 26 minutes 48 seconds N. and long. 87 degrees 36 minutes 06 seconds W.

Ap—0 to 8 inches; dark yellowish brown (10YR 3/4) silt loam; moderate medium granular structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

BA—8 to 16 inches; dark brown (7.5YR 3/4) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; few fine black (10YR 2/1) and dark brown (10YR 3/3) soft manganese and iron accumulations throughout; moderately acid; clear smooth boundary.

Bt1—16 to 24 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; moderately acid; clear smooth boundary.

Bt2—24 to 47 inches; dark yellowish brown (10YR 4/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; approximately 5 percent subangular and subrounded gravel; moderately acid; gradual wavy boundary.

BC—47 to 65 inches; strong brown (7.5YR 4/6) silty clay loam; common medium distinct strong brown (7.5YR 5/8) and pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; firm; common prominent brown (7.5YR 4/4) clay films on faces of peds; approximately 10 percent subangular and subrounded gravel; strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 0 to 10 percent in the upper 40 inches of the profile and from 0 to 35 percent below a depth of 40 inches. Reaction is moderately acid or strongly acid throughout the profile.

The Ap horizon has hue of 10YR and value and chroma of 3 or 4. Texture is silt loam.

The BA horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 4 or 6. Texture is silt loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6. It has few or common mottles in shades of brown. Texture is silt loam or silty clay loam.

The BC horizon has the same colors and textures as the Bt horizon. It has few or common mottles in shades of brown, yellow, and red. Texture is silty clay loam or, rarely, loam.

The 2Bt horizon and C horizon, where they occur, have hue of 2.5Y to 5YR, value of 4 or 5, and chroma of 4 to 8. They have few or common mottles in shades of brown, yellow, and red. In some pedons they have a few redoximorphic depletions in shades of gray below a depth of 40 inches. Texture of the fine-earth fraction is silty clay loam, silt loam, loam, or silty clay.

Biffle Series

The Biffle series consists of moderately deep, somewhat excessively drained, gravelly soils. These soils formed in residuum from cherty limestone. They are on upland ridges and hillsides throughout the county. Slopes range from 5 to 60 percent.

Typical pedon of Biffle gravelly silt loam, 15 to 30 percent slopes; from Hohenwald, 4.5 miles north on Tennessee Highway 48, about 4 miles west on Cane Creek Road, 2.75 miles northeast on Farmers Exchange Road, 0.25 mile east on Tennessee Highway 100, about 0.5 mile north on Nacome Road, on the west side of the road; Beaverdam Springs Quadrangle; lat. 35 degrees 39 minutes 52 seconds N. and long. 87 degrees 35 minutes 24 seconds W.

A—0 to 2 inches; brown (10YR 5/3) gravelly silt loam; moderate fine granular structure; very friable; many very fine and fine and few medium roots; approximately 15 percent angular and subangular fragments of chert; very strongly acid; abrupt wavy boundary.

E—2 to 11 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak fine granular structure; very friable; common very fine, fine, and medium and few coarse roots; approximately 15 percent angular and subangular fragments of chert; very strongly acid; clear wavy boundary.

Bt—11 to 32 inches; yellowish brown (10YR 5/6) gravelly silty clay loam; moderate medium subangular blocky structure; friable; common fine, medium, and coarse roots; common distinct yellowish brown (10YR 5/4) clay films on faces of peds and on fragments of chert; approximately 20 percent angular and subangular fragments of chert; very strongly acid; clear wavy boundary.

Cr—32 to 60 inches; dense, horizontally bedded, highly weathered granular tripolitic chert that has red, brown, and yellow stains on fragments and clay films coating fragments.

Depth to hard bedrock is greater than 60 inches. Depth to a paralithic contact ranges from 20 to 40 inches. The content of angular fragments of chert ranges from 15 to 35 percent throughout the profile. Reaction ranges from moderately acid to extremely acid throughout the profile.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. The Ap horizon, where it occurs, is 4 to 10 inches thick and has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Texture of the fine-earth fraction is silt loam.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Texture of the fine-earth fraction is silt loam.

The Bt horizon has hue of 10YR, 7.5YR, and, rarely, 5YR, value of 4 to 6, and chroma of 4 to 8. It has few or common mottles in shades of brown, yellow, and red. Texture of the fine-earth fraction is silty clay loam or silt loam.

Transitional horizons occur in some pedons. They are similar in color and texture to the Bt horizon.

The Cr horizon is comprised of dense, horizontally bedded granular tripolitic chert. Colors are in shades of red, brown, yellow, and white. In some pedons the horizon has thin diagonal seams that are more than 4 inches apart and commonly contain fine roots and clayey soil material.

Dellrose Series

The Dellrose series consists of very deep, well drained, gravelly soils. These soils formed in cherty colluvium underlain by limestone. They are on footslopes and hillsides in the northeastern part of the county. Slopes range from 12 to 40 percent.

Typical pedon of Dellrose gravelly silt loam, 12 to 20 percent slopes; from

Hohenwald, 9.5 miles east on U.S. Highway 412, about 7 miles northeast on Catheys Creek Road, 500 feet north in a field; Greenfield Bend Quadrangle; lat. 35 degrees 38 minutes 25 seconds N. and long. 87 degrees 20 minutes 12 seconds W.

Ap—0 to 5 inches; dark grayish brown (10YR 3/4) gravelly silt loam; moderate medium granular structure; very friable; common fine and medium roots; approximately 15 percent angular and subangular fragments of chert; slightly acid; clear wavy boundary.

BA—5 to 18 inches; dark brown (7.5YR 4/4) gravelly silt loam; weak medium subangular blocky structure; friable; common fine roots; common medium black (10YR 2/1) and dark brown (10YR 3/3) soft accumulations and spherical concretions of manganese and iron throughout; approximately 20 percent angular and subangular fragments of chert; strongly acid; gradual wavy boundary.

Bt1—18 to 31 inches; strong brown (7.5YR 5/6) gravelly silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; many fine and medium black (10YR 2/1) and dark brown (10YR 3/3) irregular soft accumulations and spherical concretions of manganese and iron throughout; approximately 25 percent angular and subangular fragments of chert; very strongly acid; gradual wavy boundary.

Bt2—31 to 42 inches; strong brown (7.5YR 5/8) gravelly silty clay loam; common fine prominent light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; firm; few fine roots; many fine and medium black (10YR 2/1) and dark brown (10YR 3/3) irregular soft accumulations and spherical concretions throughout; approximately 20 percent angular and subangular fragments of chert; very strongly acid; gradual smooth boundary.

2Bt3—42 to 65 inches; yellowish brown (10YR 5/8) silty clay; common fine distinct yellowish red (5YR 5/8) and common medium distinct light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; firm; few distinct yellowish brown (10YR 5/6) clay films on faces of peds; common medium black (10YR 2/1) and dark brown (10YR 3/3) irregular soft accumulations and spherical concretions throughout; strongly acid.

Depth to bedrock is greater than 60 inches. The content of rock fragments ranges from 10 to 35 percent above the discontinuity and from 0 to 15 percent in the horizons below the discontinuity. Reaction ranges from slightly acid to very strongly acid throughout the profile.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is silt loam or gravelly silt loam.

The BA horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 or 4. Texture of the fine-earth fraction is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8. Texture of the fine-earth fraction is silt loam or silty clay loam.

The 2Bt horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8. It has mottles in shades of brown and yellow. In some pedons it has redoximorphic depletions in shades of gray below a depth of 40 inches. Texture is silty clay loam, silty clay, or clay.

Dickson Series

The Dickson series consists of very deep, moderately well drained soils that have a fragipan in the subsoil. These soils formed in a silty mantle and the underlying residuum of limestone. They are on undulating uplands in the central part of the county. Slopes range from 2 to 8 percent.

Typical pedon of Dickson silt loam, 2 to 5 percent slopes, eroded; from Hohenwald, 4 miles south on Tennessee Highway 48, about 0.25 mile south on Fire Tower Road, and 50 feet west in a field; Hohenwald Quadrangle; lat. 35 degrees 31 minutes 14 seconds N. and long. 87 degrees 36 minutes 08 seconds W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

E—5 to 10 inches; light yellowish brown (2.5Y 6/4) silt loam; moderate medium granular structure; very friable; many fine and medium roots; strongly acid; gradual smooth boundary.

B/E—10 to 14 inches; 60 percent yellowish brown (10YR 5/6) silt loam (B part) and 40 percent light yellowish brown (10YR 6/4) silt loam (E part); weak medium subangular blocky structure; very friable; common fine roots; few fine black (10YR 2/1) and dark brown (10YR 3/3) soft accumulations and spherical concretions of manganese and iron throughout; strongly acid; gradual smooth boundary.

Bt—14 to 20 inches; yellowish brown (10YR 5/6) silt loam; few medium distinct strong brown (7.5YR 5/8) and light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; few fine roots; few fine black (10YR 2/1) and dark brown (10YR 3/3) soft accumulations and spherical concretions throughout; strongly acid; clear smooth boundary.

E/B—20 to 24 inches; 70 percent light grayish brown (10YR 6/2) and light gray (10YR 7/2) silt loam (E part) and 30 percent yellowish brown (10YR 5/4) silt loam (B part); weak fine and medium subangular blocky structure (E part); moderate medium prismatic structure parting to moderate medium subangular blocky (B part); very friable in the E part and firm in the B part; few fine roots; common fine and medium black (10YR 2/1) and dark brown (10YR 3/3) soft accumulations and spherical concretions of manganese and iron; brittle in approximately 40 percent of the mass; strongly acid; gradual smooth boundary.

Btx—24 to 39 inches; 40 percent light yellowish brown (10YR 6/4), 20 percent yellowish brown (10YR 5/8), 20 percent light gray (10YR 7/2), and 20 percent dark yellowish brown (10YR 4/4) silty clay loam; weak very coarse to extremely coarse prismatic structure parting to moderate medium subangular blocky; firm; common fine vessicular pores; common distinct yellowish brown (10YR 5/4) clay films on faces of prisms and in vertical seams; common coarse light brownish gray (10YR 6/2) and light gray (10YR 7/1) silt loam coatings as vertical seams between prisms; common medium black (10YR 2/1) and dark brown (10YR 3/3) spherical manganese and iron concretions and soft irregular accumulations throughout; approximately 5 percent angular fragments of chert; brittle in approximately 75 percent of the mass; strongly acid; gradual wavy boundary.

2Bt—39 to 60 inches; 25 percent red (2.5YR 4/8), 25 percent yellowish red (5YR 4/6), 25 percent light yellowish brown (10YR 6/4), and 25 percent light gray (10YR 7/2) clay; moderate medium subangular blocky structure; firm; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; approximately 5 percent angular fragments of chert; strongly acid.

Depth to bedrock is greater than 60 inches. Depth to the fragipan ranges from 18 to 36 inches. The content of rock fragments ranges from 0 to 10 percent in the lower part of the Btx horizon and from 5 to 35 percent in the 2Bt horizon. Reaction is strongly acid or very strongly acid throughout the profile.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam.

The E horizon has hue of 2.5Y or 10YR, value of 4 to 6, and chroma of 3 or 4. Texture is silt loam.

Some pedons have transitional horizons similar in color and texture to the E and Bt horizon.

The Bt horizon has hue of 10YR, value of 4 or 5, and chroma of 4 or 6. It has few or common mottles in shades of brown or yellow. Texture is silt loam or silty clay loam.

The E part of the E/B horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or 3. The B part has hue of 10YR, value of 4 or 5, and chroma of 4 or 6. Texture is silt loam.

The Btx horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. It has few or common redoximorphic features in shades of brown, yellow, red, and gray. Texture is silt loam or silty clay loam.

The 2Bt horizon has hue of 7.5YR to 2.5YR, value of 3 to 5, and chroma of 4 to 8. In some pedons it has hue of 2.5Y, value of 4 to 6, and chroma of 4 to 8. It has mottles and redoximorphic features in shades of yellow, red, brown, and gray. Texture of the fine-earth fraction is silty clay loam or silty clay.

Guthrie Series

The Guthrie series consists of very deep, poorly drained soils that have a fragipan in the subsoil. These soils formed in a silty mantle of loess or ancient alluvium or a mixture of these materials. They are on upland flats and in depressions in the central part of the county. Slopes range from 0 to 2 percent.

Typical pedon of Guthrie silt loam, ponded; from Hohenwald, 2.75 miles southeast on Tennessee Highway 20, about 0.5 mile south in a field; Hohenwald Quadrangle; lat. 35 degrees 31 minutes 24 seconds N. and long. 87 degrees 30 minutes 59 seconds W.

Ap—0 to 7 inches; brown (10YR 5/3) silt loam; weak fine granular structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary.

Eg—7 to 15 inches; light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; very friable; common fine and medium roots; common fine prominent yellowish brown (10YR 5/6) iron concentrations; very strongly acid; clear smooth boundary.

Bg—15 to 24 inches; gray (10YR 6/1) silt loam; weak medium subangular blocky structure; friable; few fine roots; few medium black (10YR 2/1) and dark brown (10YR 3/3) spherical manganese and iron concretions throughout; common fine prominent brownish yellow (10YR 6/8) and yellowish brown (10YR 5/8) soft masses as iron concentrations; very strongly acid; clear smooth boundary.

Btx1—24 to 35 inches; light brownish gray (10YR 6/2) silt loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; firm; few faint gray (10YR 6/1) clay films on faces of prisms; common coarse light brownish gray (10YR 6/2) and light gray (10YR 7/1) silt loam coatings as iron and clay depletions in vertical seams between prisms; few medium black (10YR 2/1) and dark brown (10YR 3/3) spherical manganese and iron concretions throughout; approximately 5 percent subangular fragments of chert; brittle in 60 percent of the mass; very strongly acid; clear smooth boundary.

Btx2—35 to 45 inches; light brownish gray (10YR 6/2) silt loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; firm; few fine irregular pores; common distinct gray (10YR 5/1) clay films on faces of prisms and in pores; common coarse light brownish gray (10YR 6/2) and light gray (10YR 7/1) silt loam coatings as iron and clay depletions in vertical seams between prisms; few medium black (10YR 2/1) and dark brown (10YR 3/3) spherical manganese and iron concretions throughout; common medium prominent red (2.5YR 5/8) and strong brown (7.5YR 5/8) iron concentrations; approximately 5 percent subangular fragments of chert; brittle in 60 percent of the mass; very strongly acid; clear smooth boundary.

Btx3—45 to 60 inches; light brownish gray (10YR 6/2) silty clay loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few fine and medium irregular pores; common distinct gray (10YR 5/1) clay films on faces of peds and in pores; common coarse light brownish gray (10YR 6/2) and light gray (10YR 7/1) silt loam coatings as iron and clay depletions in vertical seams between prisms; few medium black (10YR 2/1) and dark brown (10YR 3/3) spherical manganese and iron concretions throughout; common medium distinct yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) iron concentrations; approximately 2 percent subangular fragments of chert; brittle in 60 percent of the mass; very strongly acid.

Depth to bedrock is greater than 60 inches. Depth to the fragipan ranges from 20 to 40 inches. The content of rock fragments ranges from 0 to 3 percent above the fragipan and from 0 to 15 percent in the fragipan. Reaction ranges from strongly acid to extremely acid throughout the profile.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. Texture is silt loam.

The Eg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 or less. Texture is silt loam.

The Bg horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 or less. It has few to many redoximorphic features in shades of yellow and brown. Texture is silt loam.

The Btx horizon has hue of 10YR or 2.5Y, value of 5 or 7, and chroma of 2 or less. It has few to many redoximorphic features in shades of yellow, red, and brown. In some pedons the horizon has an evenly mottled pattern in shades of yellow, gray, and brown. Texture is silt loam or silty clay loam.

Humphreys Series

The Humphreys series consists of very deep, well drained soils. These soils formed in colluvium and alluvium from cherty limestone. They are on footslopes, alluvial fans, and stream terraces along the Buffalo River and throughout the county. Slopes range from 2 to 12 percent.

Typical pedon of Humphreys gravelly silt loam, 2 to 5 percent slopes; from Hohenwald, 11 miles east on Tennessee Highway 99, about 6 miles north on Catheys Creek Road, 250 feet north in a field; Greenfield Bend Quadrangle; lat. 35 degrees 38 minutes 06 seconds N. and long. 87 degrees 20 minutes 57 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) gravelly silt loam; moderate medium granular structure; very friable; many fine and medium roots; approximately 20 percent angular, subangular, and subrounded gravel; moderately acid; gradual wavy boundary.

Bt1—6 to 18 inches; dark yellowish brown (10YR 4/4) gravelly silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; approximately 25 percent angular, subangular, and subrounded gravel; moderately acid; gradual smooth boundary.

Bt2—18 to 35 inches; brown (7.5YR 5/4) gravelly silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; approximately 25 percent angular, subangular, and subrounded gravel; moderately acid; gradual smooth boundary.

BC—35 to 46 inches; yellowish brown (10YR 5/6) very gravelly clay loam; weak medium subangular blocky structure; friable; approximately 36 percent angular, subangular, and subrounded gravel; strongly acid; gradual smooth boundary.

C—46 to 60 inches; dark yellowish brown (10YR 4/4) extremely gravelly clay loam; massive; friable; approximately 75 percent angular, subangular, and subrounded gravel; strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 15 to 35 percent in the Ap and Bt horizons and from 15 to 80 percent in the C horizon. Reaction ranges from strongly acid to neutral throughout the profile.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture of the fine-earth fraction is silt loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6. It has none to common mottles in shades of brown and yellow. Texture of the fine-earth fraction is silt loam, silty clay loam, or clay loam.

The BC and C horizons have colors similar to those of the Bt horizon. They have few or common mottles in shades of brown and yellow and none to common redoximorphic depletions in shades of gray. Texture of the fine-earth fraction is silty clay loam, clay loam, silt loam, loam, or sandy loam.

Ironcity Series

The Ironcity series consists of very deep, well drained soils. These soils formed in a silty mantle containing gravel, over residuum from cherty limestone. They are on uplands throughout the county. Slopes range from 5 to 20 percent.

Typical pedon of Ironcity gravelly silt loam, 5 to 12 percent slopes; from Hohenwald, 12.25 miles east on U.S. Highway 412, about 3.75 miles south on Big Swan Creek Road, 1 mile east on West Fork Road, 0.5 mile north on Overhead Bridge Road, 250 feet east on Anderson Road, and 50 feet due north in a field; Mount Joy Quadrangle; lat. 35 degrees 30 minutes 25 seconds N. and long. 87 degrees 20 minutes 39 seconds W.

Ap—0 to 2 inches; dark grayish brown (10YR 4/2) gravelly silt loam; weak fine granular structure; very friable; common fine and medium roots; approximately 15 percent angular and subangular gravel; moderately acid; abrupt smooth boundary.

E—2 to 6 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak medium granular structure; very friable; many fine and medium roots; approximately 15 percent angular and subangular gravel; strongly acid; gradual wavy boundary.

Bt1—6 to 22 inches; yellowish brown (10YR 5/6) gravelly silty clay loam; weak and moderate medium subangular blocky structure; friable; common fine and medium roots; common fine irregular pores; few distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; approximately 15 percent angular and subangular gravel; strongly acid; clear smooth boundary.

Bt2—22 to 30 inches; strong brown (7.5YR 4/6) gravelly silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common fine irregular pores; approximately 20 percent light yellowish brown (10YR 6/4) slightly brittle pockets of silty clay loam surrounding fragments; common distinct brown (7.5YR 4/4) clay films on faces of peds; approximately 18 percent angular and subangular gravel; very strongly acid; gradual wavy boundary.

2Bt3—30 to 48 inches; yellowish red (5YR 5/6) gravelly silty clay; common medium prominent yellowish brown (10YR 5/6) and few medium prominent pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; few fine roots; few fine irregular pores; common distinct reddish brown (5YR 5/4) clay films on faces of peds; approximately 20 percent angular and subangular gravel; very strongly acid; gradual wavy boundary.

2Bt4—48 to 65 inches; 34 percent yellowish brown (10YR 5/6), 33 percent strong brown (7.5YR 5/8), and 33 percent red (2.5YR 4/6) gravelly silty clay; weak medium subangular blocky structure; friable; few fine roots; few fine and medium irregular pores; few distinct reddish brown (5YR 5/4) clay films on faces of peds; approximately 30 percent angular and subangular gravel; very strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 15 to 25 percent in the Ap and E horizons, from 15 to 35 percent in the Bt horizon, and from 15 to 50 percent in the 2Bt horizon. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. Texture of the fine-earth fraction is silt loam.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Texture of the fine-earth fraction is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8. In many pedons there are pockets of soil material that are slightly brittle in 20 to 40 percent of the horizon, near the base of the horizon. Texture of the fine-earth fraction is silt loam or silty clay loam.

The 2Bt horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 or 8, or it has an evenly mottled pattern in shades of brown and red. Texture of the fine-earth fraction is silty clay loam, silty clay, or clay.

Lax Series

The Lax series consists of very deep, moderately well drained soils that have a fragipan in the subsoil. These soils formed in a silty mantle over gravelly alluvium and residuum of limestone. They are on uplands in the central part of the county. Slopes range from 2 to 12 percent.

Typical pedon of Lax silt loam, 2 to 5 percent slopes; from Hohenwald, 4.5 miles southwest on Tennessee Highway 48, about 1 mile south on Fire Tower Road, 50 feet west in a field; Hohenwald Quadrangle; lat. 35 degrees 30 minutes 25 seconds N. and long. 87 degrees 36 minutes 14 seconds W.

Ap—0 to 6 inches; dark brown (10YR 4/3) silt loam; moderate medium granular structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

Bt1—6 to 16 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; moderately acid; gradual smooth boundary.

Bt2—16 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; few medium distinct strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; few fine roots; few distinct yellowish brown clay films on faces of peds; strongly acid; gradual smooth boundary.

2Btx—22 to 42 inches; 34 percent yellowish brown (10YR 5/6), 33 percent strong brown (7.5YR 5/8), and 33 percent light brownish gray (10YR 6/2) extremely gravelly silty clay loam; weak very coarse prismatic structure parting to moderate coarse and medium subangular blocky; extremely firm; many distinct brown (7.5YR 5/4) clay films on prism faces and in vertical and horizontal seams; few prominent light brownish gray (10YR 6/2) silt coatings on prism faces and in vertical and horizontal seams; approximately 70 percent angular and subangular gravel; brittle in 90 percent of the mass; very strongly acid; gradual wavy boundary.

3Bt—42 to 60 inches; 34 percent yellowish red (5YR 5/8), 33 percent light brownish gray (10YR 6/2), and 33 percent yellowish brown (10YR 5/6) very gravelly silty clay; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 5/4) clay films on faces of peds; approximately 50 percent angular and subangular gravel; very strongly acid.

Depth to bedrock is greater than 60 inches. Depth to the fragipan ranges from 18 to 28 inches. The content of gravel ranges from 0 to 15 percent in the Ap and Bt horizons and from 15 to 80 percent in the 2Btx and 3Bt horizons. Depth to the fragipan ranges from 18 to 30 inches. Reaction ranges from slightly acid to very strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6. It has none to common mottles in shades of yellow and brown. Texture is silt loam or silty clay loam.

The 2Btx horizon has hue of 10YR, value of 5 or 6, and chroma of 4 or 6. It has few to many mottles in shades of yellow, brown, and red and few or common redoximorphic depletions in shades of gray. In many pedons the horizon has an evenly mottled pattern without a dominant matrix color. Texture of the fine-earth fraction is silt loam or silty clay loam.

The 3Bt horizon and the 2Cx horizon, where it occurs, have hue of 7.5YR, 5YR, or 2.5YR, value of 4 or 5, and chroma of 4 to 8. They have few or common mottles and redoximorphic features in shades of gray, yellow, brown, and red. In some horizons they have an evenly mottled pattern without a dominant matrix color. Texture of the fine-earth fraction is silty clay or clay.

Lee Series

The Lee series consists of very deep, poorly drained soils. These soils formed in loamy alluvium. They are on flood plains throughout the county. Slopes range from 0 to 2 percent.

Typical pedon of Lee gravelly silt loam, frequently flooded; from Hohenwald, 11.75 miles east on U.S. Highway 412, about 1.25 miles south on Big Swan Creek Road, 100 feet north into a field; Mount Joy Quadrangle; lat. 35 degrees 33 minutes 10 seconds N. and long. 87 degrees 22 minutes 09 seconds W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) gravelly silt loam; weak fine granular structure; very friable; common fine and medium roots; approximately 15 percent rounded and subrounded gravel; moderately acid; clear smooth boundary.

Bg1—6 to 20 inches; dark gray (2.5Y 4/1) gravelly silt loam; weak fine subangular blocky structure; friable; common fine roots; few fine prominent reddish brown (5YR 4/4) iron concentrations; approximately 20 percent rounded and subrounded gravel; strongly acid; gradual smooth boundary.

Bg2—20 to 35 inches; dark gray (5Y 4/1) gravelly silt loam; few fine distinct gray (5Y 6/1) mottles; weak medium subangular blocky structure; friable; few fine roots; few fine prominent reddish brown (5YR 4/4) iron concentrations; approximately 20 percent rounded and subrounded gravel; strongly acid; gradual smooth boundary.

Cg—35 to 60 inches; dark gray (5Y 4/1) gravelly silt loam; common fine distinct gray (5Y 6/1) mottles; massive; friable; few fine black (10YR 2/1) and dark brown (10YR 3/3) manganese and iron concretions and nodules throughout; common medium prominent yellowish red (5YR 4/6) iron concentrations; approximately 25 percent rounded and subrounded gravel; strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 10 to 25 percent in the upper 20 inches of the profile and from 15 to 60 percent below a depth of 20 inches. Reaction ranges from moderately acid to very strongly acid throughout the profile.

The Ap horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2. Texture of the fine-earth fraction is silt loam or loam.

The Bg horizon has hue of 10YR, 2.5Y, or 5Y, value of 4 to 6, and chroma of 1 or 2. It has few to many redoximorphic features in shades of yellow, brown, and red. Texture of the fine-earth fraction is silt loam or loam.

The Cg horizon has colors and textures similar to those of the Bg horizon.

Lobelville Series

The Lobelville series consists of very deep, moderately well drained soils. These soils formed in loamy alluvium. They are on flood plains throughout the county. Slopes range from 0 to 2 percent.

Typical pedon of Lobelville silt loam, occasionally flooded; from Hohenwald, 9 miles east on U.S. Highway 431, about 150 feet north of the road in a field; Gordonsburg Quadrangle; lat. 35 degrees 34 minutes 20 seconds N. and long. 87 degrees 25 minutes 30 seconds W.

Ap—0 to 8 inches; yellowish brown (10YR 5/4) silt loam; moderate medium granular structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

Bw1—8 to 15 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; few fine black (10YR 2/1) and dark brown (10YR 3/3) manganese and iron concretions and nodules throughout; moderately acid; gradual smooth boundary.

Bw2—15 to 34 inches; brown (10YR 5/3) gravelly silt loam; few medium faint pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; common fine roots; common fine black (10YR 3/1) and dark brown (10YR 3/3) manganese and iron concretions and nodules; few distinct light brownish gray (10YR 6/2) iron depletions on faces of peds; approximately 15 percent rounded and subrounded gravel; strongly acid; gradual smooth boundary.

Bg—34 to 45 inches; light brownish gray (10YR 6/2) gravelly silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine black (10YR 3/1) and dark brown (10YR 3/3) manganese and iron concretions and nodules throughout; approximately 25 percent rounded and subrounded gravel; strongly acid; gradual smooth boundary.

Cg—45 to 60 inches; grayish brown (10YR 5/2) very gravelly loam; massive; very friable; common fine black (10YR 3/1) and dark brown (10YR 3/3) manganese and iron concretions and nodules throughout; approximately 50 percent rounded and subrounded gravel; strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 5 to 25 percent in the Ap and Bw horizons, from 15 to 30 percent in the Bg horizon, and from 35 to 70 percent in the C horizon. Reaction ranges from strongly acid to moderately acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture of the fine-earth fraction is silt loam or loam.

The Bw horizon has hue of 10YR, value of 4 to 6, and chroma of 3 to 6. It has few or common redoximorphic features in shades of gray. Texture of the fine-earth fraction is silt loam, silty clay loam, or clay loam.

The Bg horizon has hue of 10YR or 2.5YR, value of 5 or 6, and chroma of 1 or 2. Texture of the fine-earth fraction is silt loam, silty clay loam, loam, or clay loam.

The Cg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. Texture of the fine-earth fraction is silt loam, loam, clay loam, or sandy loam.

Minvale Series

The Minvale series consists of very deep, well drained soils. These soils formed in colluvium and the underlying residuum from cherty limestone. They are on footslopes and benches along the Buffalo River. Slopes range from 12 to 20 percent.

Typical pedon of Minvale gravelly silt loam, 12 to 20 percent slopes; from Hohenwald, 10 miles southwest on Buffalo Road, 150 feet south into a field; Riverside

Quadrangle; lat. 35 degrees 26 minutes 26 seconds N. and long. 87 degrees 33 minutes 60 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) gravelly silt loam; moderate medium granular structure; very friable; many fine and medium roots; approximately 20 percent subrounded and subangular gravel; moderately acid; clear smooth boundary.

Bt1—5 to 12 inches; strong brown (7.5YR 4/6) gravelly silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; approximately 20 percent subrounded and subangular gravel; moderately acid; gradual smooth boundary.

Bt2—12 to 32 inches; red (2.5YR 4/6) gravelly silty clay loam; few medium distinct strong brown (7.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; common fine roots; common distinct reddish brown (2.5YR 4/4) clay films on faces of peds; approximately 30 percent subrounded and subangular gravel; strongly acid; gradual smooth boundary.

Bt3—32 to 65 inches; red (2.5YR 4/8) gravelly silty clay loam; common medium prominent strong brown (7.5YR 5/6) and few fine prominent brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; common distinct reddish brown (2.5YR 4/4) clay films on faces of peds; approximately 35 percent subrounded and subangular gravel; very strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel and cobbles ranges from 15 to 35 percent throughout the profile. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4. Texture of the fine-earth fraction is silt loam or loam.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 4 to 8. It has few or common mottles in shades of brown, yellow, and red. Texture of the fine-earth fraction is silty clay loam, clay loam, or loam.

Mountview Series

The Mountview series consists of very deep, well drained and moderately well drained soils. These soils formed in a silty mantle and residuum from limestone. They are on uplands in the central part of the county. Slopes range from 2 to 12 percent.

Typical pedon of Mountview silt loam, 2 to 5 percent slopes; from Hohenwald, 0.5 mile south on Tennessee Highway 48, about 13 miles southeast on Tennessee Highway 20, about 0.5 mile west on Paul Spears Road, 100 feet due south of the road; Henryville Quadrangle; lat. 35 degrees 28 minutes 16 seconds N. and long. 87 degrees 22 minutes 43 seconds W.

Ap—0 to 8 inches; yellowish brown (10YR 5/4) silt loam; moderate medium granular structure; very friable; common fine roots; few fine and medium black (10YR 2/1) and dark brown (10YR 3/3) manganese and iron concretions and nodules throughout; moderately acid; clear smooth boundary.

Bt1—8 to 24 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; strongly acid; clear smooth boundary.

B/E—24 to 31 inches; 65 percent yellowish red (5YR 4/6) silty clay loam (B part) and 35 percent pale brown (10YR 6/3) silt loam (E part); common medium distinct red (2.5YR 4/6) and common medium prominent yellowish brown (10YR 5/6) mottles in the B part; weak medium subangular blocky structure; firm in the B part and friable in the E part; few fine roots; many distinct brown (7.5YR 5/4) clay films on faces of peds in the B part; common medium prominent grayish brown (10YR 5/2) iron depletions on faces of peds; approximately 5 percent fragments of chert; strongly acid; clear smooth boundary.

2Bt2—31 to 39 inches; red (2.5YR 4/6) silty clay; common medium prominent strong brown (7.5YR 5/6) and common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm; many distinct reddish brown (5YR 4/4) clay films on faces of peds; few fine prominent pinkish gray (7.5YR 6/2) iron depletions on faces of peds; approximately 10 percent fragments of chert; very strongly acid; clear smooth boundary.

2Bt3—39 to 65 inches; red (2.5YR 4/6) clay; few fine prominent pale brown (10YR 6/3) and common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm; many distinct clay films on faces of peds; approximately 10 percent fragments of chert; very strongly acid.

Depth to bedrock is greater than 60 inches. The content of fragments of chert ranges from 0 to 5 percent in the Ap and Bt horizons and from 5 to 35 percent in the B/E and 2Bt horizons. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. Texture is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8. Texture is silty clay loam or silt loam.

The B part of the B/E horizon has hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8. It has few or common mottles in shades of brown, yellow, and red. The E part has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It has none to common redoximorphic depletions in shades of gray and brown. In many pedons there are gravelly strata intermixed with soil material in the B/E horizon. The B/E horizon is silty clay loam or silty loam or their gravelly analogs.

The 2Bt horizon has hue of 7.5YR to 2.5YR, value of 4 or 5, and chroma of 4 to 8. It has few or common mottles in shades of brown, yellow, and red. Texture of fine-earth fraction is silty clay loam, silty clay, or clay.

Paden Series

The Paden series consists of very deep, moderately well drained soils that have a fragipan in the subsoil. These soils formed in silty material over alluvium. They are on stream terraces along the Buffalo River and tributaries throughout the county. Slopes range from 2 to 5 percent.

Typical pedon of Paden silt loam, 2 to 5 percent slopes; from Hohenwald, 2 miles southwest on Tennessee Highway 48, about 6.25 miles south on Rockhouse Road, 0.25 mile south on Allen Creek Road, 0.5 mile east on Oak Grove Road, 500 feet north in a field; Riverside Quadrangle; lat. 35 degrees 27 minutes 02 seconds N. and long. 87 degrees 35 minutes 45 seconds W.

Ap—0 to 6 inches; brown (10YR 5/3) silt loam; moderate medium granular structure; very friable; many fine and medium roots; few black (10YR 2/1) and dark brown (10YR 3/3) manganese and iron stains and concentrations; moderately acid; clear smooth boundary.

Bt1—6 to 15 inches; yellowish brown (10YR 5/8) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; few fine black (10YR 2/1) and dark brown (10YR 3/3) manganese and iron concretions throughout; strongly acid; clear wavy boundary.

Bt2—15 to 21 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few distinct yellowish brown (10YR 5/4) clay films on faces of peds; few fine black (10YR 2/1) and dark brown (10YR 3/3) spherical concentrations throughout the matrix; common medium distinct pale brown (10YR 6/3) iron depletions; few medium prominent strong brown (7.5YR 5/8) iron concentrations; very strongly acid; clear smooth boundary.

E/B—21 to 30 inches; 60 percent light brownish gray (10YR 6/2) silt loam (E part) and 40 percent yellowish brown (10YR 5/4) silt loam (B part); weak medium subangular blocky structure (E part) and weak medium prismatic structure (B part); friable in the E part and firm in the B part; few fine tubular pores (E part) and few fine irregular pores (B part); few very fine roots (E part); few fine prominent strong brown (7.5YR 5/8) iron concentrations as soft masses (E part); few faint brown (10YR 5/3) clay films on faces of prisms; brittle in 40 percent of the mass; very strongly acid; clear wavy boundary.

Btx—30 to 48 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure parting to weak medium subangular blocky; firm; few irregular pores; few distinct brown (10YR 5/3) clay films on faces of prisms and in vertical seams; common medium and coarse prominent gray (10YR 6/1) silt coatings as vertical seams between prisms; common medium prominent strong brown (7.5YR 5/8) iron concentrations in vertical seams; brittle in about 60 percent of the mass; very strongly acid; clear smooth boundary.

2Bt—48 to 60 inches; 34 percent strong brown (7.5YR 5/8), 33 percent gray (10YR 6/1), and 33 percent red (2.5YR 4/6) clay loam; moderate medium subangular blocky structure; firm; common distinct brown (10YR 5/3) and grayish brown (10YR 5/2) clay films on faces of peds; common black (10YR 2/1) and dark brown (10YR 3/3) manganese stains and concretions throughout; 10 percent rounded gravel; very strongly acid.

Depth to bedrock is greater than 60 inches. Depth to the fragipan ranges from about 18 to 36 inches. The content of gravel ranges from 0 to 10 percent in the Ap, Bt, and B/E horizons and from 0 to 35 percent in the 2Bt horizon. Depth to the fragipan ranges from 18 to 36 inches. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8. Texture is silt loam or silty clay loam.

The E part of the E/B horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 3. It has common or many redoximorphic features in shades of gray and brown. The B part has the same colors and textures as the Btx horizon. The E/B horizon is silt loam.

The Btx horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 or 6. It has few to many redoximorphic features in shades of brown, red, and gray. Texture is silt loam or silty clay loam.

The 2Bt horizon has hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 6 or 8. It has few to many redoximorphic features in shades of gray, brown, and yellow. In some pedons the horizon has an evenly mottled pattern with no distinct matrix color. Texture is clay loam or clay.

Pickwick Series

The Pickwick series consists of very deep, well drained soils. These soils formed in old alluvium. They are on stream terraces along the Buffalo River. Slopes range from 2 to 12 percent.

Typical pedon of Pickwick silt loam, 5 to 12 percent slopes, eroded; from Hohenwald, 15 miles southwest on Tennessee Highway 99, about 50 feet south in a field; Riverside Quadrangle; lat. 35 degrees 26 minutes 33 seconds N. and long. 87 degrees 34 minutes 16 seconds W.

Ap—0 to 7 inches; yellowish brown (10YR 5/4) silt loam; moderate medium granular structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

Bt1—7 to 20 inches; yellowish red (5YR 4/6) silty clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; moderately acid; clear smooth boundary.

Bt2—20 to 42 inches; red (2.5YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; common fine and medium roots; common distinct reddish brown (2.5YR 4/4) clay films on faces of peds; few fine black (10YR 2/1) and dark brown (10YR 3/3) manganese and iron stains and nodules throughout; approximately 2 percent gravel; strongly acid; gradual smooth boundary.

Bt3—42 to 60 inches; yellowish red (5YR 5/8) silty clay; moderate medium subangular blocky structure; firm; few fine roots; few distinct yellowish red (5YR 5/6) clay films on faces of peds; few fine black (10YR 2/1) and dark brown (10YR 3/3) manganese and iron stains and nodules throughout; approximately 10 percent gravel; strongly acid.

Depth to bedrock is greater than 60 inches. The content of rounded gravel ranges from 0 to 5 percent in the Ap, Bt1, and Bt2 horizons and from 5 to 25 percent in the Bt3 horizon. Some pedons have very gravelly layers below a depth of 60 inches. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 4 or 6. Texture is silt loam.

The Bt horizon has hue of 7.5YR to 2.5YR, value of 4 or 5, and chroma of 4 to 8. It has none to common mottles in shades of brown, yellow, and red. Texture is silty clay loam, clay loam, or clay.

Riverby Series

The Riverby series consists of very deep, excessively drained soils. These soils formed in coarse textured alluvium. They are on flood plains throughout the county. Slopes range from 0 to 2 percent.

Typical pedon of Riverby gravelly sandy loam, frequently flooded; from Hohenwald, 4.5 miles north on Tennessee Highway 48, about 4.0 miles west on Cane Creek Road, 2.75 miles northeast on Farmers Exchange Road, 6 miles northeast on U.S. Highway 100, about 11 miles north on East Beaverdam Road, 2.5 miles north on Lowes Bend Road, 1.5 miles southeast on Capshaw Hollow Road, 1 mile north on Taylor Creek Road, 50 feet west in a field; Whitfield Quadrangle; lat. 35 degrees 44 minutes 27 seconds N. and long. 87 degrees 44 minutes 28 seconds W.

A1—0 to 6 inches; dark brown (10YR 3/3) gravelly sandy loam; moderate medium granular structure; very friable; many very fine and fine and common medium and coarse roots; approximately 34 percent gravel; neutral; clear smooth boundary.

A2—6 to 10 inches; brown (10YR 4/3) gravelly sandy loam; moderate medium granular structure; friable; common very fine, fine, and medium and few coarse roots; approximately 15 percent fine gravel and 15 percent medium and coarse gravel; neutral; abrupt smooth boundary.

C1—10 to 20 inches; yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) extremely gravelly coarse sandy loam; single grained; loose; common very fine, fine, and medium roots; few fine distinct brown (7.5YR 4/4) iron coatings on sand and gravel; approximately 75 percent medium and coarse gravel; neutral; clear wavy boundary.

C2—20 to 31 inches; 70 percent dark yellowish brown (10YR 4/4) and 30 percent pale brown (10YR 6/3) extremely gravelly coarse sandy loam; single grained; loose; common very fine and fine roots; few fine prominent strong brown (7.5YR 5/6) iron coatings on sand and gravel; 80 percent medium and coarse gravel; neutral; clear wavy boundary.

C3—31 to 39 inches; 60 percent dark yellowish brown (10YR 4/4) and 40 percent pale brown (10YR 6/3) extremely gravelly loamy coarse sand; single grained; loose; common very fine and fine roots; few fine and medium prominent strong brown (7.5YR 5/6) iron coatings on sand and gravel; 80 percent medium and coarse gravel; neutral; clear wavy boundary.

C4—39 to 48 inches; yellowish brown (10YR 5/4) extremely gravelly coarse sandy loam; single grained; loose; common very fine and fine roots; few fine prominent strong brown (7.5YR 5/6) iron coatings on sand and gravel; 80 percent medium and coarse gravel; clear wavy boundary.

C5—48 to 60 inches; dark yellowish brown (10YR 4/6) extremely gravelly loamy coarse sand; single grained; loose; 90 percent medium and coarse gravel and 5 percent cobbles; neutral.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 10 to 60 percent in the A horizon and from 35 to 95 percent in the C horizon. In some pedons there are thin strata of sandy material with no rock fragments. Reaction ranges from moderately acid to neutral throughout the profile.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. Texture of the fine-earth fraction is loam or sandy loam.

The C horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. In some pedons it has thin strata with value and chroma of 3. Texture of the fine-earth fraction is coarse sandy loam or loamy coarse sand.

Saffell Series

The Saffell series consists of very deep, well drained soils. These soils formed in loamy and gravelly sediments. They are on uplands in the central part of the county. Slopes range from 12 to 40 percent.

Typical pedon of Saffell gravelly silt loam, 12 to 20 percent slopes; from Hohenwald, 0.5 mile northeast on U.S. Highway 412, about 0.25 mile east on Piney Creek Road, 75 feet south in woods; Hohenwald Quadrangle; lat. 35 degrees 32 minutes 54 seconds N. and long. 87 degrees 32 minutes 33 seconds W.

A—0 to 5 inches; brown (10YR 4/3) gravelly silt loam; weak fine granular structure; very friable; many fine and medium roots; approximately 15 percent gravel; strongly acid; clear smooth boundary.

E—5 to 12 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak medium granular structure; very friable; many fine and medium roots; approximately 25 percent gravel; strongly acid; gradual smooth boundary.

Bt1—12 to 28 inches; strong brown (7.5YR 5/6) very gravelly clay loam; weak medium subangular blocky structure; friable; common medium and fine roots; few faint brown (7.5YR 5/4) clay films on faces of peds; approximately 50 percent gravel; very strongly acid; gradual smooth boundary.

Bt2—28 to 45 inches; yellowish red (5YR 5/8) extremely gravelly sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common distinct strong brown (7.5YR 5/6) clay films on faces of peds; approximately 75 percent gravel; very strongly acid; gradual smooth boundary.

C—45 to 60 inches; 50 percent strong brown (7.5YR 5/6) and 50 percent yellowish red (5YR 5/8) very gravelly sandy loam; massive; friable; approximately 50 percent medium and coarse gravel; very strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 10 to 60 percent in the A and E horizons and from 35 to 75 percent in the Bt and C horizons. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. Texture of the fine-earth fraction is silt loam or fine sandy loam.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 or 4. Texture of the fine-earth fraction is silt loam or fine sandy loam.

The Bt horizon has hue of 7.5YR to 2.5YR, value of 4 or 5, and chroma of 4 to 8. It has none to common mottles in shades of brown, yellow, and red. Texture of the fine-earth fraction is sandy clay loam, loam, clay loam, or fine sandy loam.

The C horizon has hue of 7.5YR to 2.5YR, value of 4 to 6, and chroma of 4 to 8. It has none to common mottles in shades of brown, yellow, and red. Texture of the fine-earth fraction is fine sandy loam, sandy loam, loam, or loamy sand.

Sengtown Series

The Sengtown series consists of very deep, well drained soils. These soils formed in residuum from limestone. They are on ridgetops and hillsides in the northern part of the county. Slopes range from 5 to 60 percent.

Typical pedon of Sengtown gravelly silt loam, 20 to 60 percent slopes; Hickman County, Tennessee; from Bon Aqua, 0.5 mile southwest on Big Spring Creek Road, 0.5 mile southwest of the intersection of Big Spring Creek Road and Goose Branch Road, 50 feet south of Goose Branch Road, in woods; Lyles Quadrangle; lat. 35 degrees 56 minutes 07 seconds N. and long. 87 degrees 20 minutes 34 seconds W.

A—0 to 2 inches; brown (10YR 4/3) gravelly silt loam; weak fine granular structure; very friable; many fine, common medium, and few coarse roots; approximately 15 percent angular and subangular gravel; very strongly acid; abrupt wavy boundary.

E—2 to 10 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak fine subangular blocky structure parting to weak fine granular; very friable; many fine, common medium, and few coarse roots; many fine tubular pores; approximately 15 percent angular and subangular gravel; very strongly acid; clear wavy boundary.

Bt1—10 to 18 inches; strong brown (7.5 YR 5/6) gravelly silty clay loam; few medium distinct yellowish brown (10YR 5/4) and yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; many fine, common medium, and few coarse roots; many fine and medium tubular pores; few faint brown (7.5YR 5/4) clay films on faces of peds; approximately 20 percent angular and subangular gravel; very strongly acid; clear wavy boundary.

Bt2—18 to 29 inches; red (2.5YR 4/6) gravelly silty clay; common fine distinct reddish yellow (7.5YR 6/6) mottles; moderate medium subangular blocky structure; firm; common fine and medium tubular pores; many distinct yellowish red (5YR 4/6) clay films on faces of peds; approximately 30 percent angular and subangular gravel; very strongly acid; clear wavy boundary.

Bt3—29 to 65 inches; red (2.5YR 4/6) gravelly clay; common medium prominent light yellowish brown (10YR 6/4) and few medium prominent light gray (10YR 7/2) mottles; moderate coarse subangular blocky structure; firm; few fine and medium roots; few fine and medium tubular pores; many distinct yellowish red (5YR 4/6) clay films on faces of peds; approximately 25 percent angular and subangular gravel; very strongly acid.

Depth to bedrock is greater than 60 inches. The content of gravel ranges from 15 to 35 percent throughout the profile. Reaction ranges from moderately acid to very strongly acid throughout the profile.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4. Texture of the fine-earth fraction is silt loam.

Some pedons have an Ap horizon. This horizon has colors and textures similar to those of the A horizon.

The E horizon has hue of 10YR or 7.5YR, value of 5, and chroma of 4 or 6. Texture of the fine-earth fraction is silt loam.

The Bt1 horizon has hue of 7.5YR to 5YR, value of 4 or 5, and chroma of 4 or 6. It has none to common mottles in shades of brown and red. Texture of the fine-earth fraction is silty clay loam.

The Bt2 and Bt3 horizons have hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 or 8. They have none to common mottles in shades of red, brown, yellow, and gray. Texture of the fine-earth fraction is silty clay or clay.

Sulphura Series

The Sulphura series consists of moderately deep, somewhat excessively drained soils. These soils formed in a thin layer of gravelly colluvium over residuum from siltstone and shale. They are on convex hillsides. Slopes range from 20 to 75 percent.

Typical pedon of Sulphura soil in an area of Biffle, Hawthorne, and Sulphura soils, very steep, rocky; from Linden, 7.0 miles north on Highway 13 to Highway 50, about 6.0 miles east to Depriest-Lagoon Road, 3.5 miles northwest, 20 feet north of the road in woods; Pleasantville Quadrangle; lat. 35 degrees 44 minutes 34.62 seconds N. and long. 87 degrees 44 minutes 44.27 seconds W.

A—0 to 5 inches; yellowish brown (10YR 5/4) very gravelly silt loam; moderate fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 50 percent angular fragments of chert; strongly acid; clear wavy boundary.

Bw1—5 to 11 inches; light yellowish brown (10YR 6/4) very gravelly silt loam; weak fine subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; many fine tubular pores; 50 percent angular fragments of chert; strongly acid; abrupt wavy boundary.

Bw2—11 to 25 inches; yellowish brown (10YR 5/6) very gravelly silt loam; moderate medium subangular blocky structure; friable; common fine and coarse roots; many very fine and fine tubular pores; 35 percent angular fragments of chert and 30 percent channers of siltstone; moderately acid; abrupt wavy boundary.

R—25 to 79 inches; hard gray siltstone that is interlayered with shale and chert.

Depth to hard bedrock ranges from 20 to 40 inches. Reaction ranges from strongly acid to moderately acid in the upper part of the profile and from strongly acid to slightly acid in the lower part. The content of rock fragments ranges from 10 to 60 percent in the A horizon and from 35 to 60 percent in the Bw horizon.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. Texture of the fine-earth fraction is silt loam.

The Bw horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 4 or 6. Texture of the fine-earth fraction is silt loam or silty clay loam.

Some pedons have a thin Cr horizon. This horizon is weathered siltstone.

The R layer is hard, gray, horizontally bedded siltstone bedrock that is interlayered with shale and chert.

Taft Series

The Taft series consists of very deep, somewhat poorly drained soils that have a fragipan in the subsoil. These soils formed in silty material. They are on upland flats and in depressions in the central part of the county. Slopes range from 0 to 2 percent.

Typical pedon of Taft silt loam; from Hohenwald, 6.25 miles southeast on Tennessee Highway 20, about 200 feet southwest in a field; Gordonsburg Quadrangle; lat. 35 degrees 30 minutes 21 seconds N. and long. 87 degrees 27 minutes 51 seconds W.

Ap—0 to 6 inches; brown (10YR 5/3) silt loam; moderate medium granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.

E—6 to 12 inches; light yellowish brown (2.5Y 6/4) silt loam; weak fine granular structure; very friable; common fine and medium roots; common medium black (10YR 3/1) and dark brown (10YR 3/3) manganese and iron concretions throughout; very strongly acid; clear smooth boundary.

Bw—12 to 22 inches; light yellowish brown (2.5Y 6/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; common medium distinct olive yellow (2.5Y 6/6) iron concentrations; common medium distinct light brownish gray (2.5Y 6/2) iron depletions; very strongly acid; clear smooth boundary.

E/B—22 to 26 inches; 60 percent light brownish gray (2.5Y 6/2) silt loam (E part) and 40 percent grayish brown (2.5Y 5/2) silt loam (B part); weak medium prismatic structure parting to moderate medium subangular blocky; very friable in the E part and friable in the B part; few fine roots in the E part; common medium black (10YR 3/1) and dark brown (10YR 3/3) manganese and iron concretions throughout; brittle in 40 percent of the mass; very strongly acid; clear wavy boundary.

Btx1—26 to 45 inches; light yellowish brown (2.5Y 6/4) silt loam; common medium prominent gray (10YR 6/1) and common medium distinct light olive brown (2.5Y 5/6) mottles; weak very coarse prismatic structure parting to moderate medium subangular; firm; common medium prominent grayish brown (10YR 6/1) clay films on faces of prisms in vertical seams; common medium distinct light brownish gray (2.5Y 6/2) silt coatings as vertical seams; common medium distinct light olive brown (2.5Y 5/6) iron concentrations as soft masses in vertical seams and on prism faces; common medium black (10YR 3/1) and dark brown (10YR 3/3) manganese and iron concretions throughout; approximately 2 percent subangular gravel; brittle in 60 percent of the mass; very strongly acid; gradual wavy boundary.

Btx2—45 to 52 inches; 34 percent light yellowish brown (2.5Y 6/4), 33 percent gray (10YR 6/1), and 33 percent yellowish brown (10YR 5/8) silt loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; firm; common distinct gray (2.5Y 6/1) clay films on faces of prisms in vertical seams; common fine distinct light brownish gray (2.5Y 6/2) silt coatings as vertical seams; common medium black (10YR 3/1) and dark brown (10YR 3/3) manganese and iron concretions throughout; approximately 2 percent subangular gravel; brittle in 60 percent of the mass; very strongly acid; clear smooth boundary.

2Bt—52 to 60 inches; 25 percent red (2.5YR 4/8), 25 percent brownish yellow (10YR 6/8), 25 percent light brownish gray (10YR 6/2), and 25 percent yellowish brown (10YR 5/8) silty clay loam; moderate medium subangular blocky structure; firm; few distinct yellowish brown (10YR 5/4) clay films on faces of peds; approximately 5 percent subangular gravel; very strongly acid.

Depth to bedrock is greater than 60 inches. The content of chert fragments ranges from 0 to 3 percent in the Ap, Bw, E/B, and Btx horizons and from 0 to 15 percent in the 2Bt horizon. Depth to the fragipan ranges from 20 to 30 inches. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam.

The E horizon and the E part of the E/B horizon have hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 4. Texture is silt loam.

The B part of the E/B horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4. Texture is silt loam.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4. It has few or common redoximorphic features in shades of gray and brown. Texture is silt loam or silty clay loam.

The Btx horizon has hue of 10YR or 2.5YR, value of 5 or 6, and chroma of 3 or 4, or it has an evenly mottled pattern without a dominant matrix color. It has few to many redoximorphic features in shades of brown, yellow, and gray. Texture is silt loam or silty clay loam.

The 2Bt horizon has hue of 10YR to 2.5YR, value of 4 or 5, and chroma of 4 to 8, or it has an evenly mottled pattern without a dominant matrix color. It has few to many redoximorphic features in shades of yellow, brown, red, and gray. Texture is silty clay loam or silty clay.

Tarklin Series

The Tarklin series consists of very deep, moderately well drained soils that have a very dense fragipan in the subsoil. These soils formed in colluvium or alluvium from cherty limestone. They are on footslopes and stream terraces throughout the county. Slopes range from 5 to 12 percent.

Typical pedon of Tarklin gravelly silt loam, 5 to 15 percent slopes; from Hohenwald, 9.0 miles southwest on Buffalo Road, 50 feet north in a field; Riverside Quadrangle; lat. 35 degrees 26 minutes 28 seconds N. and long. 87 degrees 32 minutes 55 seconds W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly silt loam; moderate medium granular structure; very friable; many fine and medium roots; approximately 30 percent subangular and subrounded gravel; moderately acid; gradual smooth boundary.

Bt—5 to 22 inches; yellowish brown (10YR 5/4) gravelly silt loam; common medium faint brown (10YR 5/3) mottles; weak medium subangular blocky structure; friable; common fine and medium roots; approximately 30 percent subangular and subrounded gravel; moderately acid; clear smooth boundary.

Btx—22 to 60 inches; 34 percent light brownish gray (10YR 6/2), 33 percent light yellowish brown (10YR 6/4), and 33 percent yellowish brown (10YR 5/6) very gravelly silt loam; weak very coarse to extremely coarse prismatic structure parting to moderate coarse and medium subangular blocky; extremely firm; few fine light brownish gray (10YR 6/2) clay flows as vertical and horizontal seams; approximately 35 percent subangular and subrounded gravel; brittle in 95 percent of the mass; very strongly acid.

Depth to bedrock is greater than 60 inches. Depth to the fragipan ranges from 18 to 24 inches. The content of rounded and subrounded chert fragments ranges from 15 to 35 percent in the Ap and Bt horizons and from 25 to 75 percent in the Btx horizon. Reaction is strongly acid or very strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. Texture of the fine-earth fraction is silt loam.

The Bt horizon has hue of 10YR or 7.5YR and value and chroma of 4 or 6. It has none or few mottles in shades of brown. Texture of the fine-earth fraction is silt loam.

The Btx horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6. It has few or common redoximorphic features in shades of gray and brown. Texture of the fine-earth fraction is silt loam or silty clay loam.

The Tarklin soils in Lewis County are considered taxadjuncts to the series because their range in temperature differs from that defined for the series. This difference, however, does not significantly affect the use and management of the soils.

Trace Series

The Trace series consists of very deep, well drained soils. These soils formed in silty alluvium underlain by gravelly alluvium. They are on stream terraces along the Buffalo River and tributaries throughout the county. Slopes range from 0 to 5 percent.

Typical pedon of Trace silt loam, 0 to 2 percent slopes; from Hohenwald, 12.25 miles east on U.S. Highway 412, about 4.5 miles south on Big Swan Creek Road, 50 feet west in a field; Mount Joy Quadrangle; lat. 35 degrees 31 minutes 09 seconds N. and long. 87 degrees 20 minutes 57 seconds W.

Ap—0 to 3 inches; brown (10YR 4/3) silt loam; weak fine and medium granular structure; very friable; many very fine and fine roots; approximately 1 percent rounded gravel; moderately acid; abrupt smooth boundary.

BA—3 to 9 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; common fine irregular pores; common medium faint brown (10YR 4/3) soil material filling old root channels; approximately 2 percent rounded gravel; moderately acid; clear smooth boundary.

Bt1—9 to 24 inches; brown (7.5YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; common fine pores; few faint clay films; 2 percent rounded gravel; moderately acid; clear wavy boundary.

Bt2—24 to 35 inches; brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; few fine pores; few fine faint strong brown (7.5YR 4/6) clay films on faces of peds; approximately 2 percent rounded gravel; moderately acid; clear wavy boundary.

2BC—35 to 38 inches; dark yellowish brown (10YR 4/4) very gravelly silt loam; weak medium subangular blocky structure; friable; common fine roots; approximately 45 percent rounded gravel; strongly acid; clear wavy boundary.

2C—38 to 80 inches; yellowish brown (10YR 5/4) extremely gravelly loam; single grained; loose; few fine roots; approximately 65 percent rounded gravel; strongly acid.

Depth to bedrock is more than 60 inches. Depth to gravelly layers ranges from 30 to 60 inches. The content of rounded gravel ranges from 0 to 10 percent in the Ap and Bt horizons, from 15 to 60 percent in the 2BC horizon, and from 60 to 90 percent in the 2C horizon. Reaction is moderately acid or strongly acid throughout the profile, except where lime has been added.

The Ap horizon has hue of 10YR or 7.5YR and value and chroma of 3 or 4. Texture is silt loam.

The BA horizon has hue of 10YR or 7.5YR, value of 4, and chroma of 3 to 6. Texture is silt loam.

The Bt horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6. Texture is silt loam or silty clay loam.

The 2BC horizon, where it occurs, has colors similar to the Bt horizon. Texture of the fine-earth fraction is silt loam, loam, or clay loam.

The 2C horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6. Texture of the fine-earth fraction is loam, silt loam, or sandy loam.

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Glossary

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.
Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.
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.
Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.
Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
Bottom land. The normal flood plain of a stream, subject to flooding.
Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.
Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.
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.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

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.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

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, roughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

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.

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.

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.

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.

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.

Fine textured soil. Sandy clay, silty clay, or clay.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

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).

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

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 has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

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.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

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.

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.

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.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

K_{sat}. 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.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

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).

Munsell notation. A designation of color by degrees of three simple variables: hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Parent material. The unconsolidated organic and mineral material in which soil forms.

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.

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.)

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.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

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.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

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.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

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.

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.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 2 percent
Nearly level	0 to 3 percent
Gently sloping	2 to 5 percent
Strongly sloping	5 to 12 percent
Moderately steep	12 to 20 percent
Steep	20 to 60 percent
Very steep	45 percent and higher

Classes for complex slopes are as follows:

Level	0 to 2 percent
Nearly level	0 to 3 percent
Undulating	2 to 5 percent
Rolling	5 to 12 percent
Hilly	12 to 20 percent
Steep	20 to 60 percent
Very steep	45 percent and higher

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

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.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded 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.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1961-90 at Columbia, Tennessee)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temp. higher than--	2 years in 10 will have-- Minimum temp. lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	46.7	24.9	35.8	71	-3	17	4.16	2.03	6.00	7	3.1
February-	51.8	28.6	40.2	76	5	32	4.33	2.49	5.96	7	1.3
March----	61.3	36.4	48.8	83	15	107	5.77	3.30	7.97	7	0.1
April----	71.8	45.2	58.5	88	25	272	4.88	2.86	6.68	7	0.0
May------	78.7	53.6	66.2	91	34	498	5.59	3.14	7.77	7	0.0
June-----	86.2	61.4	73.8	97	45	700	3.66	1.79	5.29	5	0.0
July-----	89.3	65.9	77.6	99	53	845	4.77	3.04	6.34	7	0.0
August---	88.5	64.8	76.6	98	51	815	3.65	2.00	5.10	5	0.0
September	82.5	58.0	70.2	95	38	598	3.50	1.50	5.20	5	0.0
October--	72.5	44.7	58.6	88	26	280	3.43	1.78	5.09	4	0.0
November-	61.5	36.9	49.2	81	16	105	4.48	2.56	6.18	6	0.3
December-	51.2	29.2	40.2	73	4	34	5.03	2.63	7.14	7	0.9
Yearly:											
Average-	70.2	45.8	58.0	---	---	---	---	---	---	---	---
Extreme-	105	-20	---	100	-5	---	---	---	---	---	---
Total---	---	---	---	---	---	4,304	53.25	44.60	58.20	74	5.6

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Columbia, Tennessee)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 8	Apr. 15	Apr. 27
2 years in 10 later than--	Apr. 2	Apr. 10	Apr. 22
5 years in 10 later than--	Mar. 21	Mar. 31	Apr. 11
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 30	Oct. 23	Oct. 4
2 years in 10 earlier than--	Nov. 4	Oct. 28	Oct. 9
5 years in 10 earlier than--	Nov. 14	Nov. 5	Oct. 18

Table 3.—Growing Season

(Recorded in the period 1961-90 at Columbia, Tennessee)

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	209	197	173
8 years in 10	219	204	178
5 years in 10	237	218	190
2 years in 10	256	231	201
1 year in 10	266	238	207

Table 4.—Acreage and Proportional Extent of the Soils

Map symbol	Soil name	Acres	Percent
AmB	Armour silt loam, 2 to 5 percent slopes	20	*
AmC2	Armour silt loam, 5 to 12 percent slopes, eroded	54	*
BbC	Biffle gravelly silt loam, 5 to 15 percent slopes	12,030	6.7
BbD	Biffle gravelly silt loam, 15 to 30 percent slopes	10,668	5.9
BbF	Biffle gravelly silt loam, 30 to 60 percent slopes	7,084	3.9
BOF	Biffle-Sulphura-Rock outcrop association, very steep	79,302	43.8
DeD	Dellrose gravelly silt loam, 12 to 20 percent slopes	314	0.2
DeE	Dellrose gravelly silt loam, 20 to 40 percent slopes	136	*
DkB2	Dickson silt loam, 2 to 5 percent slopes, eroded	7,112	3.9
DkC2	Dickson silt loam, 5 to 8 percent slopes, eroded	202	0.1
Dm	Dumps, mine	15	*
Gu	Guthrie silt loam, ponded	348	0.2
HuB	Humphreys gravelly silt loam, 2 to 5 percent slopes	1,955	1.1
HuC	Humphreys gravelly silt loam, 5 to 12 percent slopes	1,745	1.0
IrC	Ironcity gravelly silt loam, 5 to 12 percent slopes	10,901	6.0
IrD	Ironcity gravelly silt loam, 12 to 20 percent slopes	306	0.2
LaC	Lax-Ironcity complex, 5 to 12 percent slopes	19,236	10.7
LbB	Lax silt loam, 2 to 5 percent slopes	1,399	0.8
LbC	Lax silt loam, 5 to 12 percent slopes	712	0.4
Le	Lee gravelly silt loam, frequently flooded	1,045	0.6
Lo	Lobelville silt loam, occasionally flooded	1,536	0.9
MnD	Minvale gravelly silt loam, 12 to 20 percent slopes	724	0.4
MtB	Mountview silt loam, 2 to 5 percent slopes	629	0.3
MtC2	Mountview silt loam, 5 to 12 percent slopes, eroded	460	0.3
PaB	Paden silt loam, 2 to 5 percent slopes	1,335	0.7
PkB	Pickwick silt loam, 2 to 5 percent slopes	147	0.1
PkC2	Pickwick silt loam, 5 to 12 percent slopes, eroded	635	0.4
PkC3	Pickwick silty clay loam, 5 to 12 percent slopes, severely eroded	141	*
Pt	Pits, gravel	32	*
Rb	Riverby gravelly sandy loam, frequently flooded	8,660	4.8
ROF	Rock outcrop, very steep	1,819	1.0
SaD	Saffell gravelly silt loam, 12 to 20 percent slopes	378	0.2
SaE	Saffell gravelly silt loam, 20 to 40 percent slopes	74	*
SmC2	Sengtown-Mountview complex, 5 to 12 percent slopes, eroded	138	*
Ta	Taft silt loam	754	0.4
TkC2	Tarklin gravelly silt loam, 5 to 12 percent slopes, eroded	1,183	0.7
TmC2	Tarklin-Humphreys complex, 5 to 12 percent slopes, eroded	3,181	1.8
TrA	Trace silt loam, 0 to 2 percent slopes, occasionally flooded	1,760	1.0
TrB	Trace silt loam, 2 to 5 percent slopes, rarely flooded	816	0.5
Ud	Udarents, abandoned	310	0.2
Ur	Urban land	1,164	0.6
W	Water	337	0.2
	Total	180,800	100.0

* Less than 0.1 percent.

Table 5.—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	Alfalfa hay	Corn	Soybeans	Tall fescue-ladino	Wheat
		Tons	Bu	Bu	AUM*	Bu
AmB---------------------- Armour	2e	4.00	120	43	8.00	55
AmC2--------------------- Biffle	3e	3.50	100	38	7.50	50
BbC---------------------- Biffle	4s	---	---	---	4.00	---
BbD---------------------- Biffle	6s	---	---	---	3.00	---
BbF---------------------- Biffle	7s	---	---	---	---	---
BOF----------------------		---	---	---	---	---
Biffle------------------	7s					
Sulphura----------------	7s					
Rock outcrop------------	---					
DeD---------------------- Dellrose	4e	2.20	75	25	5.50	30
DeE---------------------- Dellrose	6e	---	---	---	4.00	---
DkB2--------------------- Dickson	2e	---	85	35	7.00	50
DkC2--------------------- Dickson	3e	---	80	30	6.00	45
Dm. Dumps, mine						
Gu----------------------- Guthrie	5w	---	---	---	---	---
HuB---------------------- Humphreys	2e	3.20	90	35	7.50	50
HuC---------------------- Humphreys	3e	3.00	85	32	7.00	45
IrC---------------------- Ironcity	3e	2.00	75	30	6.50	40
IrD---------------------- Ironcity	4e	2.00	65	25	6.00	30
LaC---------------------- Lax-Ironcity	3e	---	75	25	5.50	35

* See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Soybeans	Tall fescue-ladino	Wheat
		Tons	Bu	Bu	AUM*	Bu
LbB----------------------- Lax	2e	---	80	30	6.50	40
LbC----------------------- Lax	3e	---	75	25	5.50	35
Le------------------------ Lee	4w	---	---	---	6.00	---
Lo------------------------ Lobelville	2w	---	85	36	7.50	40
MnD----------------------- Minvale	4e	2.50	65	25	6.50	30
MtB----------------------- Mountview	2e	4.00	95	38	8.00	52
MtC2---------------------- Mountview	3e	3.50	85	35	7.50	50
PaB----------------------- Paden	2e	---	85	35	7.00	50
PkB----------------------- Pickwick	2e	4.00	100	40	8.00	55
PkC2---------------------- Pickwick	3e	3.80	95	35	7.50	50
PkC3---------------------- Pickwick	4e	3.00	85	30	7.00	45
Pt. Pits, gravel						
Rb------------------------ Riverby	4s	---	---	---	4.00	---
ROF. Rock outcrop						
SaD----------------------- Saffell	6s	---	---	---	3.50	---
SaE----------------------- Saffell	7s	---	---	---	---	---
SmC2---------------------- Sengtown-Mountview	3e	3.00	90	35	7.50	42
Ta------------------------ Taft	3w	---	70	30	6.50	---
TkC2---------------------- Tarklin	3e	---	70	35	6.00	35
TmC2---------------------- Tarklin-Humphreys	3e	---	70	35	6.00	35

* See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Soybeans	Tall fescue-ladino	Wheat
		Tons	Bu	Bu	AUM*	Bu
TrA----------------------- Trace	2w	---	120	50	9.00	40
TrB----------------------- Trace	2e	4.00	110	45	8.50	45
Ud------------------------ Udarents	---	---	---	---	4.00	---
Ur. Urban land						
W. Water						

* Animal unit month: The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland)

Map symbol	Soil name
AmB	Armour silt loam, 2 to 5 percent slopes
DkB2	Dickson silt loam, 2 to 5 percent slopes, eroded
HuB	Humphreys gravelly silt loam, 2 to 5 percent slopes
LbB	Lax silt loam, 2 to 5 percent slopes
Lo	Lobelville silt loam, occasionally flooded
MtB	Mountview silt loam, 2 to 5 percent slopes
PaB	Paden silt loam, 2 to 5 percent slopes
PkB	Pickwick silt loam, 2 to 5 percent slopes
TrA	Trace silt loam, 0 to 2 percent slopes, occasionally flooded
TrB	Trace silt loam, 2 to 5 percent slopes, rarely flooded

Table 7.—Forest Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
AmB, AmC2:				
Armour------------------	yellow-poplar-------	100	107	yellow-poplar,
	loblolly pine-------	90	144	loblolly pine,
	black walnut--------	85	75	black walnut,
	southern red oak----	80	62	southern red oak,
	white oak-----------	80	62	white oak
BbC, BbD:				
Biffle------------------	shortleaf pine------	65	113	shortleaf pine,
	Virginia pine-------	70	92	Virginia pine,
	chestnut oak--------	55	52	chestnut oak,
	eastern redcedar----	40	35	eastern redcedar
BbF:				
Biffle------------------	Virginia pine-------	60	75	Virginia pine,
	eastern redcedar----	40	35	eastern redcedar
BOF:				
Biffle------------------	Virginia pine-------	60	75	Virginia pine,
	eastern redcedar----	40	35	eastern redcedar
Sulphura----------------	Virginia pine-------	50	41	Virginia pine,
	eastern redcedar----	30	40	eastern redcedar
Rock outcrop.				
DeD, DeE:				
Dellrose----------------	yellow-poplar-------	100	100	yellow-poplar,
	shortleaf pine------	80	114	shortleaf pine,
	southern red oak----	75	57	southern red oak,
	black walnut--------	75	75	black walnut
DkB2, DkC2:				
Dickson-----------------	yellow-poplar-------	90	90	yellow-poplar,
	southern red oak----	75	57	southern red oak,
	white oak-----------	70	57	white oak
Dm:				
Dumps, mine-------------	Virginia pine-------	50	60	Virginia pine,
	eastern redcedar----	35	30	eastern redcedar
Gu:				
Guthrie-----------------	sweetgum------------	90	98	sweetgum, swamp
	swamp white oak-----	80	43	white oak,
	cherrybark oak------	80	43	cherrybark oak,
	American sycamore---	76	43	American sycamore
HuB, HuC:				
Humphreys---------------	yellow-poplar-------	100	107	yellow-poplar,
	sweetgum------------	75	86	sweetgum, American
	American sycamore---	75	81	sycamore, black
	black walnut--------	85	75	walnut, white ash
	white ash-----------	80	75	
IrC, IrD:				
Ironcity----------------	loblolly pine-------	80	123	loblolly pine,
	Virginia pine-------	70	92	Virginia pine,
	chestnut oak--------	70	57	chestnut oak,
	southern red oak----	70	52	southern red oak

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
LaC:				
Lax	chestnut oak	70	57	chestnut oak,
	Virginia pine	70	92	Virginia pine,
	white oak	70	51	white oak, eastern
	eastern redcedar	40	40	redcedar
Ironcity	chestnut oak	70	57	chestnut oak,
	Virginia pine	70	92	Virginia pine,
	white oak	70	51	white oak, eastern
	eastern redcedar	40	40	redcedar
LbB, LbC:				
Lax	chestnut oak	70	57	chestnut oak,
	Virginia pine	70	92	Virginia pine,
	white oak	70	51	white oak, eastern
	eastern redcedar	40	40	redcedar
Le:				
Lee	sweetgum	95	93	sweetgum, American
	American sycamore	100	85	sycamore, yellow-
	yellow-poplar	70	85	poplar, swamp
	swamp white oak	70	62	white oak
Lo:				
Lobelville	yellow-poplar	100	107	yellow-poplar,
	eastern cottonwood	95	98	eastern
	sweetgum	90	98	cottonwood,
	American sycamore	90	85	sweetgum, American
	swamp white oak	85	62	sycamore, swamp
				white oak
MnD:				
Minvale	yellow-poplar	95	98	yellow-poplar,
	shortleaf pine	85	123	shortleaf pine,
	black walnut	80	62	black walnut,
	southern red oak	75	57	southern red oak
MtB, MtC2:				
Mountview	shortleaf pine	65	113	shortleaf pine,
	yellow-poplar	75	90	yellow-poplar,
	southern red oak	70	57	southern red oak,
	white oak	70	52	white oak
PaB:				
Paden	yellow-poplar	90	90	yellow-poplar,
	southern red oak	75	57	southern red oak,
	white oak	70	57	white oak
PkB, PkC2, PkC3:				
Pickwick	yellow-poplar	95	98	yellow-poplar,
	loblolly pine	85	144	loblolly pine,
	white oak	75	57	white oak,
	southern red oak	75	57	southern red oak
Pt.				
Pits, gravel				

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Rb:				
Riverby	sweetgum	90	85	sweetgum, American sycamore, yellow-poplar
	American sycamore	85	80	
	yellow-poplar	80	80	
ROF.				
Rock outcrop				
SaD, SaE:				
Saffell	chestnut oak	85	62	chestnut oak, Virginia pine, mockernut hickory, white oak, eastern redcedar
	Virginia pine	75	70	
	mockernut hickory	75	57	
	white oak	70	57	
	eastern redcedar	45	45	
SmC2:				
Sengtown	shortleaf pine	70	114	shortleaf pine, southern red oak, yellow-poplar
	southern red oak	70	57	
	yellow-poplar	90	86	
Mountview	shortleaf pine	65	100	shortleaf pine, southern red oak, yellow-poplar
	southern red oak	70	57	
	yellow-poplar	90	86	
Ta:				
Taft	yellow-poplar	95	98	yellow-poplar, sweetgum, swamp white oak, American sycamore
	sweetgum	95	93	
	swamp white oak	85	63	
	American sycamore	80	75	
TkC2:				
Tarklin	chestnut oak	80	57	chestnut oak, Virginia pine, white oak, eastern redcedar
	Virginia pine	70	85	
	white oak	65	57	
	eastern redcedar	40	40	
TmC2:				
Tarklin	chestnut oak	80	57	chestnut oak, Virginia pine, white oak, eastern redcedar
	Virginia pine	70	85	
	white oak	65	57	
	eastern redcedar	40	40	
Humphreys	chestnut oak	80	57	chestnut oak, Virginia pine, white oak, eastern redcedar
	Virginia pine	70	85	
	white oak	65	57	
	eastern redcedar	40	40	
TrA, TrB:				
Trace	yellow-poplar	100	95	yellow-poplar, sweetgum, loblolly pine, black walnut, cherrybark oak
	sweetgum	85	107	
	loblolly pine	90	144	
	black walnut	85	63	
	cherrybark oak	80	62	
Ud:				
Udarents	Virginia pine	70	93	Virginia pine, eastern redcedar, chestnut oak
	eastern redcedar	50	40	
	chestnut oak	50	52	

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
Ur. Urban land				
W. Water				

Table 8.—Forestland Management (Part I)

(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
AmB:							
Armour	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
AmC2:							
Armour	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
BbC:							
Biffle	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
		Landslides	0.10	Slope	0.50		
				Landslides	0.10		
BbD:							
Biffle	100	Severe:		Poorly suited:		Severe:	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	0.50	Landslides	1.00		
		Strength	0.50	Strength	0.50		
BbF:							
Biffle	100	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		
BOF:							
Biffle	45	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		
Sulphura	30	Severe:		Poorly suited:		Severe:	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	1.00	Landslides	1.00		
				Strength	0.50		
Rock outcrop	25	Not rated		Not rated		Not rated	
DeD:							
Dellrose	100	Severe:		Poorly suited:		Severe:	
		Landslides	1.00	Landslides	1.00	Strength	1.00
		Slope	0.50	Slope	1.00		
		Strength	0.50	Strength	0.50		
DeE:							
Dellrose	100	Severe:		Poorly suited:		Severe:	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	0.50	Landslides	1.00		
		Strength	0.50	Strength	0.50		

Table 8.—Forestland Management (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DkB2:							
Dickson	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
DkC2:							
Dickson	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		
Dm:							
Dumps, mine	100	Not rated		Not rated		Not rated	
Gu:							
Guthrie	100	Moderate:		Poorly suited:		Severe:	
		Strength	0.50	Ponding	1.00	Strength	1.00
				Wetness	1.00		
				Strength	0.50		
HuB:							
Humphreys	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
HuC:							
Humphreys	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
IrC:							
Ironcity	100	Moderate:		Moderately suited:		Slight	
		Strength	0.50	Slope	0.50		
IrD:							
Ironcity	100	Moderate:		Poorly suited:		Slight	
		Landslides	0.50	Slope	1.00		
		Slope	0.50	Landslides	0.50		
		Strength	0.50				
LaC:							
Lax	60	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		
Ironcity	40	Moderate:		Moderately suited:		Slight	
		Strength	0.50	Slope	0.50		
LbB:							
Lax	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
LbC:							
Lax	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		

Table 8.—Forestland Management (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Le:							
Lee	100	Severe:		Poorly suited:		Severe:	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Wetness	1.00		
				Strength	0.50		
Lo:							
Lobelville	100	Moderate:		Moderately suited:		Severe:	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
MnD:							
Minvale	100	Moderate:		Poorly suited:		Severe:	
		Landslides	0.50	Slope	1.00	Strength	1.00
		Slope	0.50	Strength	0.50		
		Strength	0.50	Landslides	0.50		
MtB:							
Mountview	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
MtC2:							
Mountview	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		
PaB:							
Paden	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
PkB:							
Pickwick	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
PkC2, PkC3:							
Pickwick	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	100	Severe:		Poorly suited:		Slight:	
		Flooding	1.00	Flooding	1.00	Strength	0.10
ROF:							
Rock outcrop	100	Not rated		Not rated		Not rated	
SaD:							
Saffell	100	Moderate:		Poorly suited:		Slight	
		Landslides	0.50	Slope	1.00		
		Slope	0.50	Landslides	0.50		

Table 8.—Forestland Management (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SaE:							
Saffell-------------	100	Severe:		Poorly suited:		Slight	
		Landslides	1.00	Slope	1.00		
		Slope	0.50	Landslides	1.00		
SmC2:							
Sengtown------------	70	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
Mountview-----------	30	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		
Ta:							
Taft----------------	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
TkC2:							
Tarklin-------------	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		
TmC2:							
Tarklin-------------	70	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		
Humphreys-----------	30	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
TrA:							
Trace---------------	100	Severe:		Poorly suited:		Severe:	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
TrB:							
Trace---------------	100	Moderate:		Moderately suited:		Severe:	
		Strength	0.50	Strength	0.50	Strength	1.00
Ud:							
Udarents------------	100	Not rated		Not rated		Not rated	
Ur:							
Urban land----------	100	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 8.—Forestland Management (Part II)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
AmC2:							
Armour	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
BbC:							
Biffle	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
						Landslides	0.10
BbD:							
Biffle	100	Moderate:		Severe:		Poorly suited:	
		Slope/erodibility	0.45	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50
BbF:							
Biffle	100	Severe:		Severe:		Poorly suited:	
		Slope/erodibility	0.88	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50
BOF:							
Biffle	45	Very severe		Severe:		Poorly suited:	
		Slope/erodibility	0.98	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50
Sulphura	30	Very severe		Severe:		Poorly suited:	
		Slope/erodibility	0.98	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
DeD:							
Dellrose	100	Moderate:		Severe:		Poorly suited:	
		Slope/erodibility	0.31	Slope/erodibility	1.00	Landslides	1.00
						Slope	1.00
						Strength	0.50
DeE:							
Dellrose	100	Moderate:		Severe:		Poorly suited:	
		Slope/erodibility	0.59	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
						Strength	0.50

Table 8.—Forestland Management (Part II)—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
DkB2:							
Dickson	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
						Wetness	0.50
DkC2:							
Dickson	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.17	Slope/erodibility	0.78	Strength	0.50
						Slope	0.50
						Wetness	0.50
Dm:							
Dumps, mine	100	Not rated		Not rated		Not rated	
Gu:							
Guthrie	100	Slight:		Slight:		Poorly suited:	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Ponding	1.00
						Wetness	1.00
						Strength	0.50
HuB:							
Humphreys	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.08	Slope/erodibility	0.44	Strength	0.50
HuC:							
Humphreys	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
IrC:							
Ironcity	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Slope	0.50
IrD:							
Ironcity	100	Moderate:		Severe:		Poorly suited:	
		Slope/erodibility	0.31	Slope/erodibility	1.00	Slope	1.00
						Landslides	0.50
LaC:							
Lax	60	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
						Wetness	0.50
Ironcity	40	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Slope	0.50
LbB:							
Lax	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
						Wetness	0.50
LbC:							
Lax	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
						Wetness	0.50

Table 8.—Forestland Management (Part II)—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
Le:							
Lee	100	Slight:		Slight:		Poorly suited:	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Wetness	1.00
						Strength	0.50
Lo:							
Lobelville	100	Slight:		Slight:		Moderately suited:	
		Slope/erodibility	0.04	Slope/erodibility	0.22	Flooding	0.50
						Strength	0.50
MnD:							
Minvale	100	Moderate:		Severe:		Poorly suited:	
		Slope/erodibility	0.31	Slope/erodibility	1.00	Slope	1.00
						Strength	0.50
						Landslides	0.50
MtB:							
Mountview	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
						Wetness	0.50
MtC2:							
Mountview	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
						Wetness	0.50
PaB:							
Paden	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
PkB:							
Pickwick	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
PkC2, PkC3:							
Pickwick	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	100	Slight:		Slight:		Poorly suited:	
		Slope/erodibility	0.02	Slope/erodibility	0.06	Flooding	1.00
ROF:							
Rock outcrop	100	Not rated		Not rated		Not rated	
SaD:							
Saffell	100	Moderate:		Severe:		Poorly suited:	
		Slope/erodibility	0.31	Slope/erodibility	1.00	Slope	1.00
						Landslides	0.50

Table 8.—Forestland Management (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SaE:							
Saffell-------------	100	Moderate:		Severe:		Poorly suited:	
		Slope/erodibility	0.59	Slope/erodibility	1.00	Slope	1.00
						Landslides	1.00
SmC2:							
Sengtown------------	70	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
Mountview-----------	30	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.22	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
						Wetness	0.50
Ta:							
Taft----------------	100	Slight:		Slight:		Moderately suited:	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Strength	0.50
						Wetness	0.50
TkC2:							
Tarklin-------------	100	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
						Wetness	0.50
TmC2:							
Tarklin-------------	70	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
						Wetness	0.50
Humphreys-----------	30	Slight:		Severe:		Moderately suited:	
		Slope/erodibility	0.18	Slope/erodibility	1.00	Strength	0.50
						Slope	0.50
TrA:							
Trace---------------	100	Slight:		Slight:		Poorly suited:	
		Slope/erodibility	0.02	Slope/erodibility	0.11	Flooding	1.00
						Strength	0.50
TrB:							
Trace---------------	100	Slight:		Moderate:		Moderately suited:	
		Slope/erodibility	0.10	Slope/erodibility	0.44	Strength	0.50
Ud:							
Udarents------------	100	Not rated		Not rated		Not rated	
Ur:							
Urban land----------	100	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 8.—Forestland Management (Part III)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
AmC2:							
Armour	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
BbC:							
Biffle	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
BbD:							
Biffle	100	Well suited		Poorly suited:		Moderately suited:	
				Slope	0.75	Strength	0.50
				Rock fragments	0.50	Slope	0.50
BbF:							
Biffle	100	Moderately suited:		Unsuited:		Poorly suited:	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Strength	0.50
BOF:							
Biffle	45	Moderately suited:		Unsuited:		Poorly suited:	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Strength	0.50
Sulphura	30	Moderately suited:		Unsuited:		Poorly suited:	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Strength	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
DeD:							
Dellrose	100	Well suited		Poorly suited:		Moderately suited:	
				Slope	0.75	Strength	0.50
				Rock fragments	0.50		
DeE:							
Dellrose	100	Well suited		Unsuited:		Moderately suited:	
				Slope	1.00	Slope	0.50
				Rock fragments	0.50	Strength	0.50
DkB2:							
Dickson	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
DkC2:							
Dickson	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50

Table 8.—Forestland Management (Part III)—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
Dm:							
Dumps, mine	100	Not rated		Not rated		Not rated	
Gu:							
Guthrie	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
HuB:							
Humphreys	100	Well suited		Moderately suited:		Moderately suited:	
				Rock fragments	0.50	Strength	0.50
HuC:							
Humphreys	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
IrC:							
Ironcity	100	Well suited		Moderately suited:		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
IrD:							
Ironcity	100	Well suited		Poorly suited:		Well suited	
				Slope	0.75		
				Rock fragments	0.50		
LaC:							
Lax	60	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
Ironcity	40	Well suited		Moderately suited:		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
LbB:							
Lax	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
LbC:							
Lax	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
Le:							
Lee	100	Well suited		Moderately suited:		Moderately suited:	
				Rock fragments	0.50	Strength	0.50
Lo:							
Lobelville	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
MnD:							
Minvale	100	Well suited		Poorly suited:		Moderately suited:	
				Slope	0.75	Strength	0.50
				Rock fragments	0.50		
MtB:							
Mountview	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50

Table 8.—Forestland Management (Part III)—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
MtC2:							
Mountview	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
PaB:							
Paden	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
PkB:							
Pickwick	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
PkC2, PkC3:							
Pickwick	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	100	Well suited		Moderately suited:		Well suited	
				Rock fragments	0.50		
ROF:							
Rock outcrop	100	Not rated		Not rated		Not rated	
SaD:							
Saffell	100	Well suited		Poorly suited:		Well suited	
				Slope	0.75		
				Rock fragments	0.50		
SaE:							
Saffell	100	Well suited		Unsuited:		Moderately suited:	
				Slope	1.00	Slope	0.50
				Rock fragments	0.50		
SmC2:							
Sengtown	70	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
Mountview	30	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
Ta:							
Taft	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
TkC2:							
Tarklin	100	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
TmC2:							
Tarklin	70	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		

Table 8.—Forestland Management (Part III)—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
TmC2:							
Humphreys-----------	30	Well suited		Moderately suited:		Moderately suited:	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
TrA, TrB:							
Trace---------------	100	Well suited		Well suited		Moderately suited:	
						Strength	0.50
Ud:							
Udarents------------	100	Not rated		Not rated		Not rated	
Ur:							
Urban land----------	100	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 8.—Forestland Management (Part IV)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AmB, AmC2:					
Armour	100	Well suited		Well suited	
BbC:					
Biffle	100	Well suited		Well suited	
BbD:					
Biffle	100	Poorly suited:		Poorly suited:	
		Slope	0.50	Slope	0.50
BbF:					
Biffle	100	Unsuited:		Unsuited:	
		Slope	1.00	Slope	1.00
BOF:					
Biffle	45	Unsuited:		Unsuited:	
		Slope	1.00	Slope	1.00
Sulphura	30	Unsuited:		Unsuited:	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
Rock outcrop	25	Not rated		Not rated	
DeD, DeE:					
Dellrose	100	Poorly suited:		Poorly suited:	
		Slope	0.50	Slope	0.50
DkB2, DkC2:					
Dickson	100	Well suited		Well suited	
Dm:					
Dumps, mine	100	Not rated		Not rated	
Gu:					
Guthrie	100	Well suited		Well suited	
HuB, HuC:					
Humphreys	100	Well suited		Well suited	
IrC:					
Ironcity	100	Well suited		Well suited	
IrD:					
Ironcity	100	Poorly suited:		Poorly suited:	
		Slope	0.50	Slope	0.50
LaC:					
Lax	60	Well suited		Well suited	
Ironcity	40	Well suited		Well suited	

Table 8.—Forestland Management (Part IV)—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
LbB, LbC:					
Lax	100	Well suited		Well suited	
Le:					
Lee	100	Well suited		Well suited	
Lo:					
Lobelville	100	Well suited		Well suited	
MnD:					
Minvale	100	Poorly suited:		Poorly suited:	
		Slope	0.50	Slope	0.50
MtB, MtC2:					
Mountview	100	Well suited		Well suited	
PaB:					
Paden	100	Well suited		Well suited	
PkB, PkC2, PkC3:					
Pickwick	100	Well suited		Well suited	
Pt:					
Pits, gravel	100	Not rated		Not rated	
Rb:					
Riverby	100	Well suited		Well suited	
ROF:					
Rock outcrop	100	Not rated		Not rated	
SaD, SaE:					
Saffell	100	Poorly suited:		Poorly suited:	
		Slope	0.50	Slope	0.50
SmC2:					
Sengtown	70	Well suited		Well suited	
Mountview	30	Well suited		Well suited	
Ta:					
Taft	100	Well suited		Well suited	
TkC2:					
Tarklin	100	Well suited		Well suited	
TmC2:					
Tarklin	70	Well suited		Well suited	
Humphreys	30	Well suited		Well suited	
TrA, TrB:					
Trace	100	Well suited		Well suited	
Ud:					
Udarents	100	Not rated		Not rated	

Table 8.—Forestland Management (Part IV)—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ur:					
Urban land----------	100	Not rated		Not rated	
W:					
Water---------------	100	Not rated		Not rated	

Table 9.—Recreation (Part I)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
AmB:							
Armour	100	Not limited		Not limited		Somewhat limited:	
						Slope	0.48
AmC2:							
Armour	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Slope	0.04	Slope	1.00
BbC:							
Biffle	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Gravel content	0.59	Gravel content	0.59	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
						Depth to bedrock	0.42
BbD, BbF:							
Biffle	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.59	Gravel content	0.59	Gravel content	1.00
						Depth to bedrock	0.42
BOF:							
Biffle	45	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.59	Gravel content	0.59	Gravel content	1.00
		Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
						Depth to bedrock	0.42
Sulphura	30	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.42
						Content of large stones	0.08
Rock outcrop	25	Not rated		Not rated		Not rated	
DeD, DeE:							
Dellrose	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Content of large stones	0.01
DkB2:							
Dickson	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.92	Depth to saturated zone	0.56	Depth to cemented pan	1.00
						Depth to saturated zone	0.92
						Slope	0.48

Table 9.—Recreation (Part I)—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
DkC2:							
Dickson	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Depth to saturated zone	0.92	Depth to saturated zone	0.56	Slope	1.00
						Depth to cemented pan	1.00
						Depth to saturated zone	0.92
Dm:							
Dumps, mine	100	Not rated		Not rated		Not rated	
Gu:							
Guthrie	100	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
HuB:							
Humphreys	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
						Slope	0.48
HuC:							
Humphreys	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
IrC:							
Ironcity	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Gravel content	0.11	Gravel content	0.11	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
						Content of large stones	0.01
IrD:							
Ironcity	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.11	Gravel content	0.11	Gravel content	1.00
						Content of large stones	0.01
LaC:							
Lax	60	Somewhat limited:		Somewhat limited:		Very limited:	
		Depth to saturated zone	0.73	Depth to saturated zone	0.35	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to cemented pan	0.97
						Depth to saturated zone	0.73
						Gravel content	0.06
Ironcity	40	Somewhat limited:		Somewhat limited:		Very limited:	
		Gravel content	0.11	Gravel content	0.11	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
						Content of large stones	0.01

Table 9.—Recreation (Part I)—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
LbB:							
Lax	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.73	Depth to saturated zone	0.35	Depth to cemented pan	0.97
						Depth to saturated zone	0.73
						Slope	0.48
						Gravel content	0.06
LbC:							
Lax	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Depth to saturated zone	0.73	Depth to saturated zone	0.35	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to cemented pan	0.97
						Depth to saturated zone	0.73
						Gravel content	0.06
Le:							
Lee	100	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
Lo:							
Lobelville	100	Very limited:		Somewhat limited:		Very limited:	
		Flooding	1.00	Gravel content	0.14	Gravel content	1.00
		Gravel content	0.14			Flooding	0.60
						Slope	0.05
MnD:							
Minvale	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.43
MtB:							
Mountview	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.73	Depth to saturated zone	0.35	Depth to saturated zone	0.73
						Slope	0.48
MtC2:							
Mountview	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Depth to saturated zone	0.73	Depth to saturated zone	0.35	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.73
PaB:							
Paden	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.08	Depth to saturated zone	0.03	Slope	0.48
						Depth to cemented pan	0.46
						Depth to saturated zone	0.08
PkB:							
Pickwick	100	Not limited		Not limited		Somewhat limited:	
						Slope	0.48

Table 9.—Recreation (Part I)—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
PkC2, PkC3:							
Pickwick	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Slope	0.04	Slope	1.00
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	100	Very limited:		Somewhat limited:		Very limited:	
		Flooding	1.00	Gravel content	0.62	Flooding	1.00
		Gravel content	0.62	Flooding	0.40	Gravel content	1.00
						Content of large stones	0.03
ROF:							
Rock outcrop	100	Not rated		Not rated		Not rated	
SaD, SaE:							
Saffell	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.41	Gravel content	0.41	Gravel content	1.00
SmC2:							
Sengtown	70	Somewhat limited:		Somewhat limited:		Very limited:	
		Gravel content	0.12	Gravel content	0.12	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
Mountview	30	Somewhat limited:		Somewhat limited:		Very limited:	
		Depth to saturated zone	0.73	Depth to saturated zone	0.35	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.73
Ta:							
Taft	100	Very limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	1.00
TkC2:							
Tarklin	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Depth to saturated zone	0.82	Depth to saturated zone	0.43	Gravel content	1.00
		Gravel content	0.22	Gravel content	0.22	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to cemented pan	0.97
						Depth to saturated zone	0.82
						Content of large stones	0.01
TmC2:							
Tarklin	70	Somewhat limited:		Somewhat limited:		Very limited:	
		Depth to saturated zone	0.82	Depth to saturated zone	0.43	Gravel content	1.00
		Gravel content	0.22	Gravel content	0.22	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to cemented pan	0.97
						Depth to saturated zone	0.82
						Content of large stones	0.01

Table 9.—Recreation (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TmC2:							
Humphreys-----------	30	Somewhat limited:		Somewhat limited:		Very limited:	
		Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
TrA:							
Trace---------------	100	Very limited:		Not limited		Somewhat limited:	
		Flooding	1.00			Flooding	0.60
TrB:							
Trace---------------	100	Very limited:		Not limited		Somewhat limited:	
		Flooding	1.00			Slope	0.48
Ud:							
Udarents------------	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
Ur:							
Urban land----------	100	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 9.—Recreation (Part II)

(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
AmB:							
Armour	100	Not limited		Not limited		Not limited	
AmC2:							
Armour	100	Not limited		Not limited		Somewhat limited:	
						Slope	0.04
BbC:							
Biffle	100	Not limited		Not limited		Somewhat limited:	
						Gravel content	0.59
						Depth to bedrock	0.42
						Droughty	0.08
						Slope	0.04
BbD:							
Biffle	100	Somewhat limited:		Not limited		Very limited:	
		Slope	0.92			Slope	1.00
						Gravel content	0.59
						Depth to bedrock	0.42
						Droughty	0.08
BbF:							
Biffle	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.59
						Depth to bedrock	0.42
						Droughty	0.08
BOF:							
Biffle	45	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.59
						Depth to bedrock	0.42
						Droughty	0.14
Sulphura	30	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.42
						Droughty	0.38
						Content of large stones	0.08
						Gravel content	0.06
Rock outcrop	25	Not rated		Not rated		Not rated	
DeD:							
Dellrose	100	Somewhat limited:		Not limited		Very limited:	
		Slope	0.02			Slope	1.00
						Gravel content	0.04
						Content of large stones	0.01

Table 9.—Recreation (Part II)—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
DeE:							
Dellrose	100	Very limited:		Somewhat limited:		Very limited:	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.04
						Content of large stones	0.01
DkB2:							
Dickson	100	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
						Droughty	0.01
DkC2:							
Dickson	100	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
Dm:							
Dumps, mine	100	Not rated		Not rated		Not rated	
Gu:							
Guthrie	100	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
						Depth to cemented pan	0.90
HuB:							
Humphreys	100	Not limited		Not limited		Somewhat limited:	
						Gravel content	0.25
HuC:							
Humphreys	100	Not limited		Not limited		Somewhat limited:	
						Gravel content	0.25
						Slope	0.04
IrC:							
Ironcity	100	Not limited		Not limited		Somewhat limited:	
						Gravel content	0.11
						Slope	0.04
						Content of large stones	0.01
IrD:							
Ironcity	100	Somewhat limited:		Not limited		Very limited:	
		Slope	0.02			Slope	1.00
						Gravel content	0.11
						Content of large stones	0.01

Table 9.—Recreation (Part II)—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
LaC:							
Lax	60	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to cemented pan	0.97
						Depth to saturated zone	0.35
						Slope	0.04
Ironcity	40	Not limited		Not limited		Somewhat limited:	
						Gravel content	0.11
						Slope	0.04
						Content of large stones	0.01
LbB:							
Lax	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to cemented pan	0.97
						Depth to saturated zone	0.35
LbC:							
Lax	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to cemented pan	0.97
						Depth to saturated zone	0.35
						Slope	0.04
Le:							
Lee	100	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
						Gravel content	0.06
Lo:							
Lobelville	100	Not limited		Not limited		Somewhat limited:	
						Flooding	0.60
						Gravel content	0.14
MnD:							
Minvale	100	Somewhat limited:		Not limited		Very limited:	
		Slope	0.02			Slope	1.00
MtB:							
Mountview	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to saturated zone	0.35
MtC2:							
Mountview	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to saturated zone	0.35
						Slope	0.04

Table 9.—Recreation (Part II)—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
PaB:							
Paden	100	Not limited		Not limited		Somewhat limited:	
						Depth to cemented pan	0.46
						Depth to saturated zone	0.03
PkB:							
Pickwick	100	Not limited		Not limited		Not limited	
PkC2, PkC3:							
Pickwick	100	Not limited		Not limited		Somewhat limited:	
						Slope	0.04
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	100	Somewhat limited:		Somewhat limited:		Very limited:	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Droughty	0.88
						Gravel content	0.62
						Content of large stones	0.03
ROF:							
Rock outcrop	100	Not rated		Not rated		Not rated	
SaD:							
Saffell	100	Somewhat limited:		Not limited		Very limited:	
		Slope	0.02			Slope	1.00
						Gravel content	0.41
						Droughty	0.01
SaE:							
Saffell	100	Very limited:		Somewhat limited:		Very limited:	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.41
						Droughty	0.01
SmC2:							
Sengtown	70	Not limited		Not limited		Somewhat limited:	
						Gravel content	0.12
						Slope	0.04
Mountview	30	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to saturated zone	0.35
						Slope	0.04
Ta:							
Taft	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to cemented pan	0.79
						Depth to saturated zone	0.75

Table 9.—Recreation (Part II)—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
TkC2:							
Tarklin	100	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to cemented pan	0.97
						Depth to saturated zone	0.43
						Gravel content	0.22
						Droughty	0.10
						Slope	0.04
TmC2:							
Tarklin	70	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to cemented pan	0.97
						Depth to saturated zone	0.43
						Gravel content	0.22
						Droughty	0.10
						Slope	0.04
Humphreys	30	Not limited		Not limited		Somewhat limited:	
						Gravel content	0.25
						Slope	0.04
TrA:							
Trace	100	Not limited		Not limited		Somewhat limited:	
						Flooding	0.60
TrB:							
Trace	100	Not limited		Not limited		Not limited	
Ud:							
Udarents	100	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.22		
Ur:							
Urban land	100	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 10.—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
AmB:										
Armour	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
AmC2:										
Armour	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
BbC:										
Biffle	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
BbD:										
Biffle	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
BbF:										
Biffle	Very poor	Poor	Poor	Fair	Fair	Very poor	Very poor	Poor	Poor	Very poor
BOF:										
Biffle	Very poor	Poor	Poor	Fair	Fair	Very poor	Very poor	Poor	Poor	Very poor
Sulphura	Very poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Rock outcrop.										
DeD:										
Dellrose	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DeE:										
Dellrose	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
DkB2:										
Dickson	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
DkC2:										
Dickson	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Dm. Dumps, mine										
Gu:										
Guthrie	Poor	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good

Table 10.—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
HuB: Humphreys	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
HuC: Humphreys	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
IrC, IrD: Ironcity	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
LaC: Lax	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Ironcity	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
LbB: Lax	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
LbC: Lax	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Le: Lee	Poor	Fair	Fair	Fair	Fair	Good	Fair	Poor	Fair	Good
Lo: Lobelville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
MnD: Minvale	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
MtB: Mountview	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
MtC2: Mountview	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
PaB: Paden	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
PkB, PkC2: Pickwick	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
PkC3: Pickwick	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Pt. Pits, gravel										

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Rb:										
Riverby	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
ROF.										
Rock outcrop										
SaD:										
Saffell	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
SaE:										
Saffell	Very poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
SmC2:										
Sengtown	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Mountview	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
Ta:										
Taft	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
TkC2:										
Tarklin	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
TmC2:										
Tarklin	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Humphreys	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
TrA, TrB:										
Trace	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Ud.										
Udarents										
Ur.										
Urban land										
W.										
Water										

Table 11.—Building Site Development (Part I)

(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
AmB:							
Armour	90	Not limited		Not limited		Not limited	
AmC2:							
Armour	85	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Slope	0.04	Slope	1.00
BbC:							
Biffle	85	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Depth to soft bedrock	0.42	Slope	1.00
				Slope	0.04		
BbD, BbF:							
Biffle	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.42		
BOF:							
Biffle	45	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.42		
Sulphura	30	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.42	Depth to hard bedrock	1.00	Depth to hard bedrock	0.42
Rock outcrop	25	Not rated		Not rated		Not rated	
DeD, DeE:							
Dellrose	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
DkB2:							
Dickson	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 thin cemented pan	1.00		
DkC2:							
Dickson	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
						Slope	0.88
Dm:							
Dumps, mine	90	Not rated		Not rated		Not rated	

Table 11.—Building Site Development (Part I)—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
Gu:							
Guthrie	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
HuB:							
Humphreys	85	Not limited		Somewhat limited:		Not limited	
				Depth to saturated zone	0.03		
HuC:							
Humphreys	85	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Slope	0.04	Slope	1.00
				Depth to saturated zone	0.03		
IrC:							
Ironcity	90	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Shrink-swell	0.50	Slope	1.00
				Slope	0.04		
IrD:							
Ironcity	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
				Shrink-swell	0.50		
LaC:							
Lax	60	Somewhat limited:		Very limited:		Very limited:	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.67
Ironcity	40	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Shrink-swell	0.50	Slope	1.00
				Slope	0.04		
LbB:							
Lax	85	Somewhat limited:		Very limited:		Somewhat limited:	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Depth to saturated zone	0.67
LbC:							
Lax	85	Somewhat limited:		Very limited:		Very limited:	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.67
Le:							
Lee	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
Lo:							
Lobelville	85	Very limited:		Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.98		

Table 11.—Building Site Development (Part I)—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
MnD:							
Minvale	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
MtB:							
Mountview	85	Somewhat limited:		Very limited:		Somewhat limited:	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Depth to saturated zone	0.67
				Shrink-swell	0.50		
MtC2:							
Mountview	85	Somewhat limited:		Very limited:		Very limited:	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.67
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
PaB:							
Paden	85	Somewhat limited:		Very limited:		Somewhat limited:	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
PkB:							
Pickwick	85	Not limited		Not limited		Not limited	
PkC2, PkC3:							
Pickwick	85	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Slope	0.04	Slope	1.00
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	95	Very limited:		Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35		
ROF:							
Rock outcrop	95	Not rated		Not rated		Not rated	
SaD, SaE:							
Saffell	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
SmC2:							
Sengtown	70	Somewhat limited:		Somewhat limited:		Very limited:	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Mountview	30	Somewhat limited:		Very limited:		Very limited:	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.67
		Slope	0.04	Slope	0.04	Shrink-swell	0.50

Table 11.—Building Site Development (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ta:							
Taft	85	Somewhat limited:		Very limited:		Somewhat limited:	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
TkC2:							
Tarklin	85	Somewhat limited:		Very limited:		Very limited:	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.77
TmC3:							
Tarklin	70	Somewhat limited:		Very limited:		Very limited:	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.77
Humphreys	30	Somewhat limited:		Somewhat limited:		Very limited:	
		Slope	0.04	Slope	0.04	Slope	1.00
				Depth to saturated zone	0.03		
TrA, TrB:							
Trace	90	Very limited:		Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Ud:							
Udarents	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	75	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 11.—Building Site Development (Part II)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour--------------	90	Very limited:		Somewhat limited:		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
AmC2:							
Armour--------------	85	Very limited:		Somewhat limited:		Somewhat limited:	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
BbC:							
Biffle--------------	85	Somewhat limited:		Very limited:		Somewhat limited:	
		Slope	0.04	Cutbanks cave	1.00	Gravel content	0.59
				Depth to soft bedrock	0.42	Depth to bedrock	0.42
						Droughty	0.08
				Slope	0.04	Slope	0.04
BbD, BbF:							
Biffle--------------	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Gravel content	0.59
				Depth to soft bedrock	0.42	Depth to bedrock	0.42
						Droughty	0.08
BOF:							
Biffle--------------	45	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Gravel content	0.59
				Depth to soft bedrock	0.42	Depth to bedrock	0.42
						Droughty	0.14
Sulphura------------	30	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.42			Depth to bedrock	0.42
				Slope	1.00	Droughty	0.38
				Cutbanks cave	0.10	Content of large stones	0.08
						Gravel content	0.06
Rock outcrop--------	25	Not rated		Not rated		Not rated	
DeD:							
Dellrose------------	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Gravel content	0.04
				Too clayey	0.28	Content of large stones	0.01

Table 11.—Building Site Development (Part II)—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
DeE:							
Dellrose	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Gravel content	0.04
				Too clayey	0.28	Content of large stones	0.01
DkB2:							
Dickson	85	Very limited:		Very limited:		Very limited:	
		Low strength	1.00	Depth to saturated zone	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	Droughty	0.01
				Too clayey	0.03		
DkC2:							
Dickson	85	Very limited:		Very limited:		Very limited:	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	0.56	Cutbanks cave	0.10	Depth to saturated zone	0.56
				Too clayey	0.03		
Dm:							
Dumps, mine	90	Not rated		Not rated		Not rated	
Gu:							
Guthrie	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	Depth to cemented pan	0.90
HuB:							
Humphreys	85	Not limited		Very limited:		Somewhat limited:	
				Cutbanks cave	1.00	Gravel content	0.25
				Depth to saturated zone	0.03		
HuC:							
Humphreys	85	Somewhat limited:		Very limited:		Somewhat limited:	
		Slope	0.04	Cutbanks cave	1.00	Gravel content	0.25
				Slope	0.04	Slope	0.04
				Depth to saturated zone	0.03		
IrC:							
Ironcity	90	Somewhat limited:		Very limited:		Somewhat limited:	
		Slope	0.04	Cutbanks cave	1.00	Gravel content	0.11
				Slope	0.04	Slope	0.04
				Too clayey	0.03	Content of large stones	0.01
IrD:							
Ironcity	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Gravel content	0.11
				Too clayey	0.03	Content of large stones	0.01

Table 11.—Building Site Development (Part II)—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
LaC:							
Lax	60	Very limited:		Very limited:		Somewhat limited:	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to cemented pan	0.97
		Depth to saturated zone	0.35	Cutbanks cave	1.00	Depth to saturated zone	0.35
		Slope	0.04	Slope	0.04	Slope	0.04
Ironcity	40	Somewhat limited:		Very limited:		Somewhat limited:	
		Slope	0.04	Cutbanks cave	1.00	Gravel content	0.11
				Slope	0.04	Slope	0.04
				Too clayey	0.03	Content of large stones	0.01
LbB:							
Lax	85	Very limited:		Very limited:		Somewhat limited:	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to cemented pan	0.97
		Depth to saturated zone	0.35	Cutbanks cave	1.00	Depth to saturated zone	0.35
LbC:							
Lax	85	Somewhat limited:		Very limited:		Somewhat limited:	
		Depth to saturated zone	0.35	Depth to saturated zone	1.00	Depth to cemented pan	0.97
		Slope	0.04	Cutbanks cave	1.00	Depth to saturated zone	0.35
				Slope	0.04	Slope	0.04
Le:							
Lee	85	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
				Flooding	0.80	Gravel content	0.06
Lo:							
Lobelville	85	Very limited:		Very limited:		Somewhat limited:	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Depth to saturated zone	0.98	Gravel content	0.14
				Flooding	0.60		
MnD:							
Minvale	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00		
MtB:							
Mountview	85	Very limited:		Very limited:		Somewhat limited:	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.35
		Depth to saturated zone	0.35	Too clayey	0.12		
				Cutbanks cave	0.10		

Table 11.—Building Site Development (Part II)—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
MtC2:							
Mountview-----------	85	Very limited:		Very limited:		Somewhat limited:	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.35
		Shrink-swell	0.50	Too clayey	0.12	Slope	0.04
		Depth to saturated zone	0.35	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
PaB:							
Paden---------------	85	Very limited:		Very limited:		Somewhat limited:	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to cemented pan	0.46
		Depth to saturated zone	0.03	Cutbanks cave	0.10	Depth to saturated zone	0.03
PkB:							
Pickwick------------	85	Very limited:		Somewhat limited:		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
PkC2, PkC3:							
Pickwick------------	85	Very limited:		Somewhat limited:		Somewhat limited:	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Pt:							
Pits, gravel--------	100	Not rated		Not rated		Not rated	
Rb:							
Riverby-------------	95	Very limited:		Very limited:		Very limited:	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	0.88
				Depth to saturated zone	0.35	Gravel content	0.62
						Content of large stones	0.03
ROF:							
Rock outcrop--------	95	Not rated		Not rated		Not rated	
SaD:							
Saffell-------------	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Gravel content	0.41
						Droughty	0.01
SaE:							
Saffell-------------	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Gravel content	0.41
						Droughty	0.01
SmC2:							
Sengtown------------	70	Somewhat limited:		Very limited:		Somewhat limited:	
		Low strength	1.00	Cutbanks cave	1.00	Gravel content	0.12
		Shrink-swell	0.50	Too clayey	0.50	Slope	0.04
		Slope	0.04	Slope	0.04		

Table 11.—Building Site Development (Part II)—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
SmC2:							
Mountview	30	Very limited: Low strength Shrink-swell Depth to saturated zone Slope	 1.00 0.50 0.35 0.04	Very limited: Depth to saturated zone Too clayey Cutbanks cave Slope	 1.00 0.12 0.10 0.04	Somewhat limited: Depth to saturated zone Slope	 0.35 0.04
Ta:							
Taft	85	Very limited: Low strength Depth to saturated zone	 1.00 0.75	Very limited: Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited: Depth to cemented pan Depth to saturated zone	 0.79 0.75
TkC2:							
Tarklin	85	Somewhat limited: Depth to saturated zone Slope	 0.43 0.04	Very limited: Depth to saturated zone Cutbanks cave Slope	 1.00 1.00 0.04	Somewhat limited: Depth to cemented pan Depth to saturated zone Gravel content Droughty Slope	 0.97 0.43 0.22 0.10 0.04
TmC2:							
Tarklin	70	Somewhat limited: Depth to saturated zone Slope	 0.43 0.04	Very limited: Depth to saturated zone Cutbanks cave Slope	 1.00 1.00 0.04	Somewhat limited: Depth to cemented pan Depth to saturated zone Gravel content Droughty Slope	 0.97 0.43 0.22 0.10 0.04
Humphreys	30	Somewhat limited: Slope	 0.04	Very limited: Cutbanks cave Slope Depth to saturated zone	 1.00 0.04 0.03	Somewhat limited: Gravel content Slope	 0.25 0.04
TrA:							
Trace	90	Very limited: Flooding Low strength	 1.00 0.78	Very limited: Cutbanks cave Flooding	 1.00 0.60	Somewhat limited: Flooding	 0.60
TrB:							
Trace	90	Somewhat limited: Low strength Flooding	 0.78 0.40	Very limited: Cutbanks cave	 1.00	Not limited	
Ud:							
Udarents	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	75	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities (Part I)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:					
Armour	90	Somewhat limited:		Somewhat limited:	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.32
AmC2:					
Armour	85	Somewhat limited:		Very limited:	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
BbC:					
Biffle	85	Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	0.04	Depth to soft bedrock	1.00
				Slope	1.00
BbD, BbF:					
Biffle	85	Very limited:		Very limited:	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
BOF:					
Biffle	45	Very limited:		Very limited:	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Sulphura	30	Very limited:		Very limited:	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Seepage	0.53
Rock outcrop	25	Not rated		Not rated	
DeD, DeE:					
Dellrose	85	Very limited:		Very limited:	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	1.00

Table 12.—Sanitary Facilities (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DkB2:					
Dickson-------------	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00
		Depth to cemented pan	1.00	Seepage	0.53
				Slope	0.32
				Depth to saturated zone	0.04
DkC2:					
Dickson-------------	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00
		Depth to cemented pan	1.00	Slope	1.00
				Seepage	0.53
				Depth to saturated zone	0.04
Dm:					
Dumps, mine---------	90	Not rated		Not rated	
Gu:					
Guthrie-------------	90	Very limited:		Very limited:	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Restricted permeability	0.46	Seepage	0.53
HuB:					
Humphreys-----------	85	Somewhat limited:		Very limited:	
		Depth to saturated zone	0.08	Seepage	1.00
				Slope	0.32
HuC:					
Humphreys-----------	85	Somewhat limited:		Very limited:	
		Depth to saturated zone	0.08	Seepage	1.00
		Slope	0.04	Slope	1.00
IrC:					
Ironcity------------	90	Somewhat limited:		Very limited:	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
IrD:					
Ironcity------------	85	Very limited:		Very limited:	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53

Table 12.—Sanitary Facilities (Part I)—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
LaC:					
Lax	60	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.04	Seepage	0.53
				Depth to saturated zone	0.12
Ironcity	40	Somewhat limited:		Very limited:	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
LbB:					
Lax	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00
		Depth to cemented pan	1.00	Seepage	0.53
				Slope	0.32
				Depth to saturated zone	0.12
LbC:					
Lax	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.04	Seepage	0.53
				Depth to saturated zone	0.12
Le:					
Lee	85	Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
Lo:					
Lobelville	85	Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
MnD:					
Minvale	85	Very limited:		Very limited:	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
MtB:					
Mountview	85	Very limited:		Somewhat limited:	
		Depth to saturated zone	1.00	Seepage	0.53
		Restricted permeability	0.46	Slope	0.32
				Depth to saturated zone	0.12

Table 12.—Sanitary Facilities (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MtC2:					
Mountview-----------	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
		Slope	0.04	Depth to saturated zone	0.12
PaB:					
Paden---------------	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00
		Depth to cemented pan	1.00	Depth to saturated zone	0.56
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.32
PkB:					
Pickwick------------	85	Somewhat limited:		Somewhat limited:	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.32
PkC2, PkC3:					
Pickwick------------	85	Somewhat limited:		Very limited:	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
Pt:					
Pits, gravel--------	100	Not rated		Not rated	
Rb:					
Riverby-------------	95	Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	0.84	Depth to saturated zone	0.17
ROF:					
Rock outcrop--------	95	Not rated		Not rated	
SaD, SaE:					
Saffell-------------	85	Very limited:		Very limited:	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	1.00
SmC2:					
Sengtown------------	70	Somewhat limited:		Very limited:	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
Mountview-----------	30	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
		Slope	0.04	Depth to saturated zone	0.12

Table 12.—Sanitary Facilities (Part I)—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
Ta:					
Taft	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00
		Depth to cemented pan	1.00	Seepage	0.53
		Restricted permeability	0.46	Depth to saturated zone	0.01
TkC2:					
Tarklin	85	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to cemented pan	1.00	Seepage	1.00
		Slope	0.04	Depth to cemented pan	1.00
				Depth to saturated zone	0.08
TmC2:					
Tarklin	70	Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to cemented pan	1.00	Seepage	1.00
		Slope	0.04	Depth to cemented pan	1.00
				Depth to saturated zone	0.08
Humphreys	30	Somewhat limited:		Very limited:	
		Depth to saturated zone	0.08	Seepage	1.00
		Slope	0.04	Slope	1.00
TrA:					
Trace	90	Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.46		
TrB:					
Trace	90	Very limited:		Very limited:	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.46	Flooding	0.40
		Flooding	0.40	Slope	0.32
Ud:					
Udarents	85	Not rated		Not rated	
Ur:					
Urban land	75	Not rated		Not rated	
W:					
Water	100	Not rated		Not rated	

Table 12.—Sanitary Facilities (Part II)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	90	Not limited		Not limited		Not limited	
AmC2:							
Armour	85	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Slope	0.04	Slope	0.04	Slope	0.04
BbC:							
Biffle	85	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
		Slope	0.04	Slope	0.04	Gravel content	0.49
						Slope	0.04
BbD, BbF:							
Biffle	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
						Gravel content	0.49
BOF:							
Biffle	45	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
						Gravel content	0.38
Sulphura	30	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Gravel content	0.18
Rock outcrop	25	Not rated		Not rated		Not rated	
DeD:							
Dellrose	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Seepage	1.00	Slope	1.00
		Too clayey	0.50	Slope	1.00	Seepage	0.52
						Too clayey	0.50
DeE:							
Dellrose	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50	Seepage	1.00	Seepage	0.52
						Too clayey	0.50

Table 12.—Sanitary Facilities (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
DkB2:							
Dickson	85	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to thin cemented pan	0.50	Depth to saturated zone	0.96	Depth to saturated zone	0.98
DkC2:							
Dickson	85	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
				Depth to saturated zone	0.96	Depth to saturated zone	0.98
Dm:							
Dumps, mine	90	Not rated		Not rated		Not rated	
Gu:							
Guthrie	90	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	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 cemented pan	1.00	Depth to cemented pan	1.00
HuB:							
Humphreys	85	Very limited:		Very limited:		Somewhat limited:	
		Seepage	1.00	Seepage	1.00	Seepage	0.52
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50			Gravel content	0.46
HuC:							
Humphreys	85	Very limited:		Very limited:		Somewhat limited:	
		Seepage	1.00	Seepage	1.00	Seepage	0.52
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50	Slope	0.04	Gravel content	0.46
		Slope	0.04			Slope	0.04
IrC:							
Ironcity	90	Very limited:		Somewhat limited:		Very limited:	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Gravel content	0.27
						Slope	0.04
IrD:							
Ironcity	85	Very limited:		Very limited:		Very limited:	
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Slope	1.00
						Gravel content	0.27

Table 12.—Sanitary Facilities (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
LaC:							
Lax	60	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.04	Depth to saturated zone	0.88	Depth to saturated zone	0.93
				Slope	0.04	Slope	0.04
Ironcity	40	Very limited:		Somewhat limited:		Very limited:	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Gravel content	0.27
						Slope	0.04
LbB:							
Lax	85	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
				Depth to saturated zone	0.88	Depth to saturated zone	0.93
LbC:							
Lax	85	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.04	Depth to saturated zone	0.88	Depth to saturated zone	0.93
				Slope	0.04	Slope	0.04
Le:							
Lee	85	Very limited:		Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.57
Lo:							
Lobelville	85	Very limited:		Very limited:		Somewhat limited:	
		Flooding	1.00	Flooding	1.00	Gravel content	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.20
MnD:							
Minvale	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.30
MtB:							
Mountview	85	Very limited:		Somewhat limited:		Very limited:	
		Too clayey	1.00	Depth to saturated zone	0.88	Too clayey	1.00
		Depth to saturated zone	1.00			Depth to saturated zone	0.93
MtC2:							
Mountview	85	Very limited:		Somewhat limited:		Very limited:	
		Too clayey	1.00	Depth to saturated zone	0.88	Too clayey	1.00
		Depth to saturated zone	1.00	Slope	0.04	Depth to saturated zone	0.93
		Slope	0.04			Slope	0.04

Table 12.—Sanitary Facilities (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
PaB:							
Paden	85	Somewhat limited:		Very limited:		Very limited:	
		Depth to saturated zone	0.95	Depth to cemented pan	1.00	Depth to cemented pan	1.00
				Depth to saturated zone	0.44	Depth to saturated zone	0.68
PkB:							
Pickwick	85	Somewhat limited:		Not limited		Somewhat limited:	
		Too clayey	0.50			Too clayey	0.50
PkC2, PkC3:							
Pickwick	85	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	95	Very limited:		Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.32
		Seepage	1.00	Seepage	1.00		
ROF:							
Rock outcrop	95	Not rated		Not rated		Not rated	
SaD, SaE:							
Saffell	85	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
		Too clayey	0.50			Too clayey	0.50
SmC2:							
Sengtown	70	Very limited:		Somewhat limited:		Very limited:	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Gravel content	0.53
						Slope	0.04
Mountview	30	Very limited:		Somewhat limited:		Very limited:	
		Too clayey	1.00	Depth to saturated zone	0.88	Too clayey	1.00
		Depth to saturated zone	1.00	Slope	0.04	Depth to saturated zone	0.93
		Slope	0.04			Slope	0.04
Ta:							
Taft	85	Very limited:		Very limited:		Very limited:	
		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 saturated zone	1.00

Table 12.—Sanitary Facilities (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
TkC2:							
Tarklin	85	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Seepage	1.00	Depth to cemented pan	1.00
		Slope	0.04	Depth to cemented pan	1.00	Depth to saturated zone	0.95
				Depth to saturated zone	0.92	Seepage	0.22
				Slope	0.04	Gravel content	0.22
						Slope	0.04
TmC2:							
Tarklin	70	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Seepage	1.00	Depth to cemented pan	1.00
		Slope	0.04	Depth to cemented pan	1.00	Depth to saturated zone	0.95
				Depth to saturated zone	0.92	Seepage	0.22
				Slope	0.04	Gravel content	0.22
						Slope	0.04
Humphreys	30	Very limited:		Very limited:		Somewhat limited:	
		Seepage	1.00	Seepage	1.00	Seepage	0.52
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50	Slope	0.04	Gravel content	0.46
		Slope	0.04			Slope	0.04
TrA:							
Trace	90	Very limited:		Very limited:		Very limited:	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.23
TrB:							
Trace	90	Very limited:		Very limited:		Very limited:	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Flooding	0.40	Flooding	0.40	Gravel content	0.23
Ud:							
Udarents	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	75	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 13.—Construction Materials (Part I)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
AmB:					
Armour	90	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AmC2:					
Armour	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BbC, BbD, BbF:					
Biffle	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BOF:					
Biffle	45	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sulphura	30	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	25	Not rated		Not rated	
DeD, DeE:					
Dellrose	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DkB2, DkC2:					
Dickson	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dm:					
Dumps, mine	90	Not rated		Not rated	
Gu:					
Guthrie	90	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HuB, HuC:					
Humphreys	85	Poor:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
IrC:					
Ironcity------------	90	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
IrD:					
Ironcity------------	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
LaC:					
Lax-----------------	60	Poor:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Ironcity------------	40	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
LbB, LbC:					
Lax-----------------	85	Poor:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Le:					
Lee-----------------	85	Poor:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Lo:					
Lobelville----------	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MnD:					
Minvale-------------	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MtB, MtC2:					
Mountview-----------	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PaB:					
Paden---------------	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PkB, PkC2, PkC3:					
Pickwick------------	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pt:					
Pits, gravel--------	100	Not rated		Not rated	

Table 13.—Construction Materials (Part I)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
Rb:					
Riverby-------------	95	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.09
ROF:					
Rock outcrop--------	95	Not rated		Not rated	
SaD, SaE:					
Saffell-------------	85	Fair:		Fair:	
		Bottom layer	0.06	Thickest layer	0.00
		Thickest layer	0.25	Bottom layer	0.09
SmC2:					
Sengtown------------	70	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mountview-----------	30	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ta:					
Taft----------------	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TkC2:					
Tarklin-------------	85	Poor:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
TmC2:					
Tarklin-------------	70	Poor:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Humphreys-----------	30	Poor:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
TrA, TrB:					
Trace---------------	90	Fair:		Poor:	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.44	Thickest layer	0.00
Ud:					
Udarents------------	85	Not rated		Not rated	
Ur:					
Urban land----------	75	Not rated		Not rated	
W:					
Water---------------	100	Not rated		Not rated	

Table 13.—Construction Materials (Part II)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
AmB:							
Armour	90	Fair:		Poor:		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Too acid	0.74				
		Water erosion	0.90				
AmC2:							
Armour	85	Fair:		Poor:		Fair:	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.96
		Too acid	0.74				
		Water erosion	0.90				
BbC:							
Biffle	85	Fair:		Poor:		Poor:	
		Droughty	0.09	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.12			Too acid	0.32
		Too acid	0.50			Depth to bedrock	0.58
		Depth to bedrock	0.58			Slope	0.96
BbD:							
Biffle	85	Fair:		Poor:		Poor:	
		Droughty	0.09	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.08	Rock fragments	0.00
		Too acid	0.50			Too acid	0.32
		Depth to bedrock	0.58			Depth to bedrock	0.58
BbF:							
Biffle	85	Fair:		Poor:		Poor:	
		Droughty	0.09	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.32
		Depth to bedrock	0.58			Depth to bedrock	0.58
BOF:							
Biffle	45	Fair:		Poor:		Poor:	
		Droughty	0.05	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.32
		Depth to bedrock	0.58			Depth to bedrock	0.58
Sulphura	30	Poor:		Poor:		Poor:	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.58			Depth to bedrock	0.58
		Too acid	0.74				
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 13.—Construction Materials (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
DeD:							
Dellrose------------	85	Poor:		Fair:		Poor:	
		Low content of organic matter	0.00	Slope	0.98	Slope	0.00
		Too acid	0.54			Rock fragments	0.03
						Too acid	0.98
DeE:							
Dellrose------------	85	Poor:		Poor:		Poor:	
		Low content of organic matter	0.00	Slope	0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.03
						Too acid	0.98
DkB2:							
Dickson-------------	85	Poor:		Poor:		Poor:	
		Depth to cemented pan	0.00	Depth to cemented pan	0.00	Depth to cemented pan	0.00
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.24
		Droughty	0.21	Depth to saturated zone	0.24	Too acid	0.88
		Too acid	0.50				
		Water erosion	0.90				
DkC2:							
Dickson-------------	85	Poor:		Poor:		Poor:	
		Depth to cemented pan	0.00	Depth to cemented pan	0.00	Depth to cemented pan	0.00
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.24
		Droughty	0.31	Depth to saturated zone	0.24	Too acid	0.88
		Too acid	0.50				
		Water erosion	0.90				
Dm:							
Dumps, mine---------	90	Not rated		Not rated		Not rated	
Gu:							
Guthrie-------------	90	Fair:		Poor:		Poor:	
		Depth to cemented pan	0.10	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.12	Depth to cemented pan	0.00	Depth to cemented pan	0.10
		Low content of organic matter	0.12	Low strength	0.00	Too acid	0.59
		Droughty	0.67				
		Water erosion	0.90				
HuB:							
Humphreys-----------	85	Fair:		Good		Poor:	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim	0.18
						Too acid	0.98
HuC:							
Humphreys-----------	85	Fair:		Good		Poor:	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim	0.18
						Slope	0.96
						Too acid	0.98

Table 13.—Construction Materials (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
IrC:							
Ironcity	90	Fair:		Poor:		Poor:	
		Low content of organic matter	0.12	Low strength	0.00	Rock fragments	0.00
		Too acid	0.50	Shrink-swell	0.99	Hard to reclaim	0.18
						Too acid	0.88
						Slope	0.96
IrD:							
Ironcity	85	Fair:		Poor:		Poor:	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.00
		Too acid	0.50	Slope	0.98	Rock fragments	0.00
				Shrink-swell	0.99	Hard to reclaim	0.18
						Too acid	0.88
LaC:							
Lax	60	Fair:		Poor:		Fair:	
		Depth to cemented pan	0.03	Depth to cemented pan	0.00	Depth to cemented pan	0.03
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.38
		Droughty	0.29	Depth to saturated zone	0.38	Too acid	0.88
		Too acid	0.32			Slope	0.96
		Water erosion	0.90			Rock fragments	0.97
Ironcity	40	Fair:		Fair:		Poor:	
		Low content of organic matter	0.12	Low strength	0.00	Rock fragments	0.00
		Too acid	0.50	Shrink-swell	0.99	Hard to reclaim	0.18
						Too acid	0.88
						Slope	0.96
LbB:							
Lax	85	Fair:		Poor:		Fair:	
		Depth to cemented pan	0.03	Depth to cemented pan	0.00	Depth to cemented pan	0.03
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.38
		Droughty	0.29	Depth to saturated zone	0.38	Too acid	0.88
		Too acid	0.32			Rock fragments	0.97
		Water erosion	0.90				
LbC:							
Lax	85	Fair:		Poor:		Fair:	
		Depth to cemented pan	0.03	Depth to cemented pan	0.00	Depth to cemented pan	0.03
		Low content of organic matter	0.12	Depth to saturated zone	0.38	Depth to saturated zone	0.38
		Droughty	0.29			Too acid	0.88
		Too acid	0.32			Slope	0.96
		Water erosion	0.90			Rock fragments	0.97
Le:							
Lee	85	Poor:		Poor:		Poor:	
		Low content of organic matter	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.50			Rock fragments	0.00
						Hard to reclaim	0.02
						Too acid	0.88

Table 13.—Construction Materials (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
Lo:							
Lobelville----------	85	Poor:		Fair:		Poor:	
		Low content of organic matter	0.00	Depth to saturated zone	0.99	Rock fragments	0.00
		Too acid	0.54			Hard to reclaim	0.00
						Too acid	0.98
						Depth to saturated zone	0.99
MnD:							
Minvale-------------	85	Fair:		Fair:		Poor:	
		Low content of organic matter	0.12	Slope	0.98	Rock fragments	0.00
		Too acid	0.50			Slope	0.00
						Hard to reclaim	0.50
						Too acid	0.88
MtB:							
Mountview-----------	85	Fair:		Poor:		Fair:	
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.38
		Too acid	0.50	Depth to saturated zone	0.38	Hard to reclaim	0.88
		Water erosion	0.90	Shrink-swell	0.99	Too acid	0.88
MtC2:							
Mountview-----------	85	Poor:		Poor:		Poor:	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Depth to saturated zone	0.38	Depth to saturated zone	0.38
		Too acid	0.50	Shrink-swell	0.97	Rock fragments	0.72
		Water erosion	0.90			Hard to reclaim	0.88
						Too acid	0.88
						Slope	0.96
PaB:							
Paden---------------	85	Fair:		Poor:		Fair:	
		Low content of organic matter	0.12	Depth to cemented pan	0.00	Depth to cemented pan	0.54
		Too acid	0.32	Low strength	0.00	Depth to saturated zone	0.76
		Depth to cemented pan	0.54	Depth to saturated zone	0.76	Too acid	0.88
		Water erosion	0.90				
PkB:							
Pickwick------------	85	Fair:		Poor:		Fair:	
		Low content of organic matter	0.12	Low strength	0.00	Too acid	0.88
		Too acid	0.32				
		Water erosion	0.90				
PkC2:							
Pickwick------------	85	Fair:		Poor:		Fair:	
		Low content of organic matter	0.12	Low strength	0.00	Too acid	0.88
		Too acid	0.32			Slope	0.96
		Water erosion	0.90				

Table 13.—Construction Materials (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
PkC3:							
Pickwick	85	Fair:		Poor:		Fair:	
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
		Too acid	0.32			Too acid	0.88
		Too clayey	0.98			Slope	0.96
		Water erosion	0.99				
Pt:							
Pits, gravel	100	Not rated		Not rated		Not rated	
Rb:							
Riverby	95	Fair:		Fair:		Poor:	
		Droughty	0.06	Cobble content	0.84	Rock fragments	0.00
		Too acid	0.97			Hard to reclaim	0.00
ROF:							
Rock outcrop	95	Not rated		Not rated		Not rated	
SaD:							
Saffell	85	Fair:		Fair:		Poor:	
		Low content of organic matter	0.12	Slope	0.98	Rock fragments	0.00
		Too acid	0.32			Slope	0.00
		Droughty	0.98			Hard to reclaim	0.00
						Too acid	0.88
SaE:							
Saffell	85	Fair:		Poor:		Poor:	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.32			Rock fragments	0.00
		Droughty	0.98			Hard to reclaim	0.00
						Too acid	0.88
SmC2:							
Sengtown	70	Poor:		Poor:		Poor:	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.94	Rock fragments	0.00
		Too acid	0.54			Hard to reclaim	0.18
						Slope	0.96
						Too acid	0.98
Mountview	30	Poor:		Poor:		Poor:	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Depth to saturated zone	0.38	Depth to saturated zone	0.38
		Too acid	0.50	Shrink-swell	0.97	Rock fragments	0.72
		Water erosion	0.90			Hard to reclaim	0.88
						Too acid	0.88
						Slope	0.96
Ta:							
Taft	85	Fair:		Poor:		Fair:	
		Low content of organic matter	0.12	Depth to cemented pan	0.00	Depth to saturated zone	0.14
		Depth to cemented pan	0.21	Low strength	0.00	Depth to cemented pan	0.21
		Too acid	0.32	Depth to saturated zone	0.14	Too acid	0.88
		Droughty	0.83				
		Water erosion	0.90				

Table 13.—Construction Materials (Part II)—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
TkC2:							
Tarklin	85	Fair:		Poor:		Poor:	
		Depth to cemented pan	0.03	Depth to cemented pan	0.00	Rock fragments	0.00
		Droughty	0.08	Depth to saturated zone	0.32	Depth to cemented pan	0.03
		Low content of organic matter	0.12			Depth to saturated zone	0.32
		Too acid	0.50			Too acid	0.59
						Slope	0.96
TmC2:							
Tarklin	70	Fair:		Poor:		Poor:	
		Depth to cemented pan	0.03	Depth to cemented pan	0.00	Rock fragments	0.00
		Droughty	0.08	Depth to saturated zone	0.32	Depth to cemented pan	0.03
		Low content of organic matter	0.12			Depth to saturated zone	0.32
		Too acid	0.50			Too acid	0.59
						Slope	0.96
Humphreys	30	Fair:		Good		Poor:	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim	0.18
						Slope	0.96
						Too acid	0.98
TrA, TrB:							
Trace	90	Fair:		Good		Poor:	
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Too acid	0.74				
		Water erosion	0.99				
Ud:							
Udarents	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	75	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 14.—Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. 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	Limitations for-- Pond reservoir areas	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
AmB:							
Armour	Moderate: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
AmC2:							
Armour	Severe: slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
BbC, BbD, BbF:							
Biffle	Severe: seepage slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
BOF:							
Biffle	Severe: seepage slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Sulphura	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Rock outcrop.							
DeD, DeE:							
Dellrose	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
DkB2:							
Dickson	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly rooting depth wetness	Limitation: erodes easily wetness	Limitation: erodes easily rooting depth

Table 14.—Water Management—Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
DkC2:							
Dickson	Moderate: seepage	Severe: piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily rooting depth slope
Dm. Dumps, mine							
Gu:							
Guthrie	Slight	Severe: piping wetness	Severe: no water	Limitation: percs slowly	Limitation: percs slowly rooting depth wetness	Limitation: erodes easily rooting depth wetness	Limitation: erodes easily rooting depth wetness
HuB:							
Humphreys	Severe: seepage	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Favorable	Limitation: droughty
HuC:							
Humphreys	Severe: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: slope	Limitation: slope droughty
IrC, IrD:							
Ironcity	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
LaC:							
Lax	Severe: seepage slope	Moderate: hard to pack wetness	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily rooting depth slope
Ironcity	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
LbB:							
Lax	Severe: seepage	Moderate: hard to pack wetness	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily rooting depth

Table 14.—Water Management—Continued

Map symbol and soil name	Limitations for--: Pond reservoir areas	Limitations for--: Embankments, dikes, and levees	Limitations for--: Aquifer-fed excavated ponds	Features affecting--: Drainage	Features affecting--: Irrigation	Features affecting--: Terraces and diversions	Features affecting--: Grassed waterways
LbC:							
Lax	Severe: seepage slope	Moderate: hard to pack wetness	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily slope wetness	Limitation: erodes easily rooting depth slope
Le:							
Lee	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Limitation: flooding	Limitation: flooding wetness droughty	Limitation: wetness	Limitation: wetness droughty
Lo:							
Lobelville	Moderate: seepage	Severe: piping	Moderate: slow refill deep to water	Limitation: flooding	Limitation: flooding wetness	Limitation: wetness	Limitation: wetness
MnD:							
Minvale	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
MtB:							
Mountview	Moderate: seepage slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
MtC2:							
Mountview	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
PaB:							
Paden	Moderate: seepage	Severe: piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily wetness	Limitation: erodes easily rooting depth
PkB:							
Pickwick	Moderate: seepage	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily

Table 14.—Water Management—Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
PkC2, PkC3:							
Pickwick	Moderate: seepage	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
Pt. Pits, gravel							
Rb:							
Riverby	Severe: seepage	Severe: large stones seepage	Severe: cutbanks cave	Limitation: deep to water	Limitation: large stones droughty	Limitation: large stones too sandy	Limitation: large stones droughty
ROF. Rock outcrop							
SaD, SaE:							
Saffell	Severe: seepage slope	Moderate: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope soil blowing	Limitation: slope droughty
SmC2:							
Sengtown	Moderate: seepage	Moderate: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Mountview	Moderate: seepage	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope
Ta:							
Taft	Moderate: seepage	Severe: piping	Severe: no water	Limitation: percs slowly	Limitation: percs slowly rooting depth wetness	Limitation: erodes easily rooting depth wetness	Limitation: erodes easily rooting depth wetness
TkC2:							
Tarklin	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: percs slowly slope	Limitation: slope wetness droughty	Limitation: rooting depth slope wetness	Limitation: rooting depth slope droughty

Table 14.—Water Management—Continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
TmC2:							
Tarklin	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: percs slowly slope	Limitation: slope wetness droughty	Limitation: rooting depth slope wetness	Limitation: rooting depth slope droughty
Humphreys	Severe: seepage slope	Moderate: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: slope	Limitation: slope droughty
TrA:							
Trace	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily flooding	Limitation: erodes easily	Limitation: erodes easily
TrB:							
Trace	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Ud. Udarents							
Ur. Urban land							
W. Water							

Table 15.—Engineering Index Properties

(Absence of an entry indicates that the data were not estimated. The symbol > means greater than; < means less than)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
AmB:												
Armour----------	0-16	Silt loam	CL-ML, CL, ML	A-4	0	0	90-100	80-100	75-95	70-90	25-35	5-10
	16-65	Silt loam, silty clay loam	CL	A-4, A-6	0	0	90-100	80-100	75-95	70-95	30-40	8-18
AmC2:												
Armour----------	0-14	Silt loam	CL, ML, CL-ML	A-4	0	0	90-100	80-100	75-95	70-90	25-35	5-10
	14-65	Silt loam, silty clay loam	CL	A-4, A-6	0	0	90-100	80-100	75-95	70-95	30-40	8-18
BbC, BbD:												
Biffle----------	0-12	Gravelly silt loam	CL, GC-GM, CL-ML, GC	A-1, A-2, A-4	0	0-5	50-90	40-80	37-70	20-60	20-28	3-9
	12-32	Gravelly silt loam, gravelly silty clay loam	CL-ML, CL, GC, GC-GM	A-4, A-6	0	0-5	50-75	50-75	40-70	36-65	20-32	5-12
	32-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
BbF:												
Biffle----------	0-12	Gravelly silt loam	CL, CL-ML, GC-GM, GC	A-1, A-2, A-4	0	0-5	50-90	40-80	37-70	20-60	20-28	3-9
	12-32	Gravelly silty clay loam, gravelly silt loam	CL-ML, GC, CL, GC-GM	A-4, A-6	0	0-5	50-75	50-75	40-70	36-65	20-32	5-12
	32-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
BOF:												
Biffle----------	0-12	Gravelly silt loam	CL-ML, CL, GC, GC-GM	A-1, A-4, A-2	0	0-5	50-90	40-80	37-70	20-60	20-28	3-9
	12-29	Gravelly silty clay loam, gravelly silt loam	CL-ML, CL, GC, GC-GM	A-4, A-6	0	0-5	50-75	50-75	40-70	36-65	20-32	5-12
	29-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Sulphura--------	0-11	Gravelly silt loam	CL, CL-ML, ML	A-4	---	5-15	65-80	60-75	55-70	50-65	20-32	2-10
	11-25	Very channery silt loam	GC, GC-GM	A-2, A-6, A-4	---	5-20	45-60	40-55	35-50	30-45	23-32	6-12
	25-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
DeD, DeE:												
Dellrose--------	0-5	Gravelly silt loam	CL, SC, CL-ML, GC	A-4, A-6	---	0-10	55-90	55-85	45-75	40-70	20-35	5-15
	5-42	Gravelly silty clay loam, gravelly silt loam	CL, GC, SC, ML	A-4, A-6, A-7	---	0-15	60-90	55-90	50-75	40-70	30-45	8-18
	42-65	Clay	CH, MH	A-7	---	0-10	80-100	80-100	75-90	70-85	50-70	20-35
DkB2:												
Dickson---------	0-10	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	90-100	75-95	20-28	2-7
	10-20	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	85-95	25-38	5-17
	20-39	Silt loam, silty clay loam	CL, CL-ML	A-4, A-7, A-6	0	0	95-100	90-100	85-100	80-95	25-42	7-20
	39-60	Clay	GC, CL, MH, ML	A-6, A-7	0	0-20	70-100	60-100	55-100	45-95	35-65	12-30

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
DkC2:												
Dickson---------	0-10	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	95-100	90-100	85-95	75-90	20-40	3-15
	10-20	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	85-95	75-95	25-40	6-15
	20-39	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4, A-7	0	0	95-100	90-100	85-100	80-95	25-42	7-20
	39-60	Clay	CL, GC, ML, MH	A-6, A-7	0	0-20	70-100	60-100	55-100	45-95	35-65	12-30
Dm. Dumps, mine												
Gu:												
Guthrie---------	0-7	Silt loam	CL-ML, ML	A-4	0	0	100	100	90-100	85-95	18-28	2-7
	7-24	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-95	23-39	5-15
	24-45	Silt loam, silty clay loam	CL, CL-ML	A-4, A-7, A-6	0	0	90-100	85-100	80-100	70-95	20-42	5-20
	45-60	Silty clay loam, silt loam	CL, CL-ML	A-4, A-7, A-6	0	0-5	85-100	80-100	75-100	66-95	20-50	4-25
HuB, HuC:												
Humphreys-------	0-6	Gravelly silt loam	CL-ML, CL, GC-GM, ML	A-4	0	0-5	60-75	55-75	50-70	35-55	18-28	3-10
	6-46	Gravelly silty clay loam, gravelly clay loam, gravelly silt loam	CL, GC, SC	A-6	0	0-5	55-75	50-75	45-70	40-60	28-40	10-16
	46-60	Very gravelly clay loam, gravelly clay loam, gravelly silty clay loam	CL, GC, SC	A-4, A-2, A-6	0	0-10	45-75	40-75	30-65	20-55	25-35	8-15

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
IrC, IrD:												
Ironcity	0-6	Gravelly silt loam	ML, GC-GM, CL, CL-ML	A-4	0	0-10	60-90	55-80	45-70	45-70	25-35	4-10
	6-30	Gravelly silt loam, gravelly silty clay loam	CL-ML, CL, GC, SC-SM	A-4, A-6	0	0-15	60-90	55-80	55-80	45-80	25-40	5-20
	30-60	Gravelly silty clay, very gravelly silty clay, gravelly clay	CH, SC, CL, GC	A-7	0	0-20	50-90	40-75	35-70	35-70	45-70	20-40
LaC:												
Lax	0-6	Silt loam	CL-ML, CL, ML	A-4	0	0	80-100	75-100	70-95	55-85	15-30	3-10
	6-22	Silt loam, silty clay loam	CL	A-4, A-6	0	0	80-100	75-100	70-95	60-95	25-40	8-16
	22-42	Gravelly silty clay loam, very gravelly silt loam, extremely gravelly silty clay loam	GC	A-2	---	0-20	30-50	25-50	20-45	15-30	25-40	8-18
	42-60	Very gravelly silty clay, very gravelly clay, extremely gravelly silty clay	CL, GC, CH, SC	A-2, A-6, A-7	---	0-20	30-75	25-75	20-70	15-60	35-55	15-30

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
LaC:												
Ironcity--------	0-6	Gravelly silt loam	ML, GC-GM, CL, CL-ML	A-4	0	0-10	60-90	55-80	45-70	45-70	25-35	4-10
	6-30	Gravelly silt loam, gravelly silty clay loam	CL, SC-SM, CL-ML, GC	A-4, A-6	0	0-15	60-90	55-80	55-80	45-80	25-40	5-20
	30-60	Gravelly silty clay, very gravelly silty clay, gravelly clay	CH, CL, SC, GC	A-7	0	0-20	50-90	40-75	35-70	35-70	45-70	20-40
LbB, LbC:												
Lax-------------	0-6	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-95	55-85	15-30	3-10
	6-22	Silt loam, silty clay loam	CL	A-4, A-6	0	0	80-100	75-100	70-95	60-95	25-40	8-16
	22-42	Gravelly silty clay loam, very gravelly silt loam, extremely gravelly silty clay loam	GC	A-2	---	0-20	30-50	25-50	20-45	15-30	25-40	8-18
	42-60	Very gravelly silty clay, very gravelly clay, extremely gravelly silty clay	CL, GC, CH, SC	A-6, A-2, A-7	---	0-20	30-75	25-75	20-70	15-60	35-55	15-30
Le:												
Lee-------------	0-6	Gravelly silt loam	GC-GM, CL-ML, GM, ML	A-4	0	0-3	65-85	60-80	50-70	40-70	20-35	3-10
	6-35	Gravelly silt loam, gravelly loam	GC-GM, CL-ML, GM, ML	A-4	0	0-5	60-75	55-75	45-70	36-65	20-35	3-10
	35-60	Gravelly silt loam, gravelly loam	CL-ML, SC-SM, GC-GM, GM	A-2, A-1, A-4	0	0-5	35-75	30-75	25-70	20-65	20-35	3-10

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Lo:												
Lobelville------	0-8	Silt loam	GC-GM, CL-ML, GM, ML	A-4	---	0-5	65-90	55-80	50-75	45-65	15-30	NP-7
	8-45	Gravelly silt loam, gravelly loam, gravelly silty clay loam	GC-GM, CL-ML, GM, ML	A-4, A-6	---	0-5	65-90	50-80	45-70	40-65	22-35	3-12
	45-60	Gravelly silt loam, gravelly loam, gravelly sandy loam	CL-ML, ML, GC-GM, GM	A-1, A-2, A-6, A-4	---	0-10	50-80	25-70	20-70	15-65	23-35	3-12
MnD:												
Minvale---------	0-5	Gravelly silt loam	CL, CL-ML, ML	A-4	0	0-5	75-95	75-90	65-85	55-75	15-30	NP-10
	5-65	Gravelly silty clay loam,	CL-ML, CL, GC, GC-GM	A-4, A-6	0	0-5	50-75	50-75	40-70	36-65	20-40	5-15
MtB:												
Mountview-------	0-8	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	95-100	80-96	20-30	2-7
	8-31	Silt loam, silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	80-96	30-43	10-23
	31-65	Silty clay, clay, gravelly clay	CL, CH, MH, ML	A-6, A-7	---	0-20	75-100	65-100	60-98	50-96	35-65	11-32
MtC2:												
Mountview-------	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	95-100	80-96	20-30	2-7
	5-22	Silt loam, silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	80-96	30-43	10-23
	22-65	Silty clay, clay, gravelly clay	CH, ML, CL, MH	A-6, A-7	---	0-20	75-100	65-100	60-98	50-96	35-65	11-32

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
PaB:												
Paden-----------	0-6	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	90-100	85-95	75-90	20-40	3-15
	6-30	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	85-95	75-95	25-40	6-15
	30-48	Silt loam, silty clay loam, clay loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	85-95	70-90	25-40	6-16
	48-60	Clay loam, sandy clay loam	CL, GC, SC	A-6, A-7	---	0-10	60-100	50-100	45-90	36-90	34-50	13-25
PkB:												
Pickwick--------	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-95	18-32	2-11
	9-43	Silty clay loam, silt loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	75-95	30-42	11-17
	43-65	Silty clay loam, clay loam, clay	CL, ML	A-6	---	0-5	80-100	75-100	65-95	55-80	33-52	12-22
PkC2:												
Pickwick--------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-95	18-32	2-11
	7-42	Silty clay loam, silt loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	75-95	30-42	11-17
	42-65	Silty clay loam, clay loam, clay	CL, ML	A-6	---	0-5	80-100	75-100	65-95	55-80	33-52	12-22
PkC3:												
Pickwick--------	0-5	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	90-100	80-95	32-42	11-18
	5-40	Silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	75-95	30-42	11-17
	40-65	Silty clay loam, clay loam, clay	CL, ML	A-6	---	0-5	80-100	75-100	65-95	55-80	33-52	12-22
Pt.												
Pits, gravel												

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Rb:												
Riverby---------	0-10	Gravelly sandy loam	GC-GM, SW-SM, GM, SM	A-1, A-2, A-4	0	0-15	50-85	40-75	30-65	15-50	0-15	NP-5
	10-60	Extremely gravelly coarse sandy loam, extremely gravelly loamy coarse sand	GW-GM, GM, GP-GM	A-1	0-5	0-50	50-80	35-70	20-50	5-25	0-15	NP-5
ROF.												
Rock outcrop												
SaD, SaE:												
Saffell---------	0-12	Gravelly silt loam	GC-GM, GM, SM, SC-SM	A-1, A-2, A-4	0	0-5	50-80	50-75	40-70	20-50	15-25	NP-5
	12-45	Very gravelly clay loam, extremely gravelly sandy clay loam, very gravelly fine sandy loam	GC, GC-GM, GP-GC	A-2, A-1, A-4, A-6	0	5-15	25-55	25-50	20-50	12-40	20-40	4-15
	45-60	Very gravelly sandy loam, gravelly sandy loam, gravelly loamy sand	GM, GC, SC, SM	A-2, A-1, A-3	0-5	0-15	15-80	10-75	10-65	5-35	15-35	NP-15
SmC2:												
Sengtown--------	0-6	Gravelly silt loam	CL-ML, GM, CL, ML	A-4	0-2	0-5	60-90	55-80	45-75	45-70	25-35	4-10
	6-18	Gravelly silt loam, gravelly silty clay loam	CL, CL-ML, GC-GM	A-4, A-6	0-2	0-5	60-90	55-80	45-75	45-70	25-40	5-20
	18-60	Gravelly clay, gravelly silty clay	CH, CL, GC	A-7	0-2	0-5	50-90	40-75	40-70	40-70	45-70	20-40

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
SmC2:												
Mountview-------	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	95-100	80-96	20-30	2-7
	5-22	Silt loam, silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	90-100	80-96	30-43	10-23
	22-65	Silty clay, clay, gravelly clay	CH, CL, ML, MH	A-6, A-7	---	0-20	75-100	65-100	60-98	50-96	35-65	11-32
Ta:												
Taft------------	0-6	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	90-100	75-95	18-30	2-10
	6-26	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	85-95	23-38	5-16
	26-52	Silt loam, silty clay loam	CL, CL-ML	A-4, A-7, A-6	0	0	95-100	90-100	85-100	80-95	23-42	5-20
	52-60	Silty clay loam, gravelly silty clay loam, clay	CL, GC, ML	A-6, A-7	0	0-20	65-100	55-100	45-90	36-85	35-48	12-22
TkC2:												
Tarklin---------	0-5	Gravelly silt loam	GM, CL, ML, SM	A-4	---	0-10	60-80	55-75	45-75	40-70	25-35	2-10
	5-22	Gravelly silt loam, gravelly silty clay loam	CL, GC, ML, GM	A-4, A-6, A-7-6	---	0-10	60-80	55-75	45-75	40-70	25-45	2-20
	22-60	Gravelly silt loam, very gravelly loam	GC, GM	A-2-5, A-2-6	---	0-15	40-60	30-50	25-45	20-40	25-45	2-20
TmC2:												
Tarklin---------	0-5	Gravelly silt loam	GM, CL, ML, SM	A-4	---	0-10	60-80	55-75	45-75	40-70	25-35	2-10
	5-22	Gravelly silt loam, gravelly silty clay loam	CL, GC, ML, GM	A-4, A-6, A-7-6	---	0-10	60-80	55-75	45-75	40-70	25-45	2-20
	22-60	Gravelly silt loam, very gravelly loam	GC, GM	A-2-5, A-2-6	---	0-15	40-60	30-50	25-45	20-40	25-45	2-20

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
TmC2:												
Humphreys-------	0-6	Gravelly silt loam	CL, ML, CL-ML, GC-GM	A-4	0	0-5	60-75	55-75	50-70	35-55	18-28	3-10
	6-46	Gravelly silty clay loam, gravelly clay loam, gravelly silt loam	CL, GC, SC	A-6	0	0-5	55-75	50-75	45-70	40-60	28-40	10-16
	46-60	Very gravelly clay loam, gravelly clay loam, gravelly silty clay loam	CL, SC, GC	A-2, A-4, A-6	0	0-10	45-75	40-75	30-65	20-55	25-35	8-15
TrA:												
Trace-----------	0-9	Silt loam	CL, ML, CL-ML	A-4	0	0	90-100	85-100	75-95	70-90	18-30	NP-10
	9-35	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	75-95	70-95	20-40	5-15
	35-38	Very gravelly silt loam, very gravelly loam, very gravelly clay loam	GC, CL, GC-GM	A-2, A-1-b, A-4, A-6	0	0-5	45-75	40-75	30-65	20-55	15-35	4-13
	38-80	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly silt loam	GM, GP-GM, GW-GM	A-1	0	0-10	25-40	10-30	5-25	5-15	0-25	NP-5

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
TrB:												
Trace-----------	0-9	Silt loam	CL, ML, CL-ML	A-4	0	0	90-100	85-100	75-95	70-90	18-30	NP-10
	9-35	Silt loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	75-95	70-95	20-40	5-15
	35-38	Very gravelly silt loam, very gravelly loam, very gravelly clay loam	GC, CL, GC-GM	A-2, A-4, A-1-b, A-6	0	0-5	45-75	40-75	30-65	20-55	15-35	4-13
	38-65	Extremely gravelly loam, extremely gravelly sandy loam, extremely gravelly silt loam	GM, GP-GM, GW-GM	A-1	0	0-10	25-40	10-30	5-25	5-15	0-25	NP-5
Ud. Udarents												
Ur. Urban land												
W. Water												

Table 16.—Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
AmB:												
Armour-------	0-16	15-27	1.30-1.45	4.23-14.11	0.18-0.23	0.0-2.9	1.0-3.0	.43	.43	5	---	---
	16-65	22-35	1.30-1.50	4.23-14.11	0.17-0.20	0.0-2.9	0.0-0.5	.37	.37			
AmC2:												
Armour-------	0-14	15-27	1.30-1.45	4.23-14.11	0.18-0.23	0.0-2.9	1.0-3.0	.43	.43	5	---	---
	14-65	22-35	1.30-1.50	4.23-14.11	0.17-0.20	0.0-2.9	0.0-0.5	.37	.37			
BbC, BbD, BbF:												
Biffle-------	0-12	15-22	1.30-1.50	14.11-42.34	0.10-0.16	0.0-2.9	0.5-1.0	.24	.37	3	---	---
	12-32	20-32	1.40-1.60	14.11-42.34	0.08-0.14	0.0-2.9	0.0-0.5	.20	.32			
	32-60	---	---	0.01-0.40	---	---	0.0-0.5	---	---			
BOF:												
Biffle-------	0-12	15-22	1.30-1.50	14.11-42.34	0.10-0.16	0.0-2.9	0.5-1.0	.24	.37	3	---	---
	12-29	20-32	1.40-1.60	14.11-42.34	0.08-0.14	0.0-2.9	0.0-0.5	.20	.32			
	29-60	---	---	0.42-4.23	---	---	0.0-0.5	---	---			
Sulphura-----	0-11	15-27	1.30-1.50	4.23-14.11	0.12-0.16	0.0-2.9	1.0-2.0	.24	.32	2	---	---
	11-25	18-32	1.35-1.55	4.23-14.11	0.07-0.14	0.0-2.9	0.0-0.5	.24	.32			
	25-30	---	---	0.00-0.42	---	---	---	---	---			
Rock outcrop.												
DeD, DeE:												
Dellrose-----	0-5	15-27	1.20-1.40	14.11-42.34	0.10-0.17	0.0-2.9	1.0-3.0	.24	.32	5	---	---
	5-42	20-35	1.20-1.40	14.11-42.34	0.09-0.16	0.0-2.9	---	.24	.28			
	42-65	40-55	1.30-1.50	4.23-14.11	0.08-0.12	3.0-5.9	---	.24	.24			
DkB2:												
Dickson------	0-10	15-26	1.30-1.50	4.23-14.11	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	4	---	---
	10-20	18-30	1.35-1.55	4.23-14.11	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	20-39	20-32	1.55-1.75	0.42-1.40	0.01-0.01	0.0-2.9	0.0-0.5	.43	.43			
	39-60	35-50	1.35-1.55	0.42-1.40	0.01-0.01	3.0-5.9	0.0-0.5	.28	.32			
DkC2:												
Dickson------	0-10	18-32	1.30-1.45	4.23-14.11	0.18-0.23	0.0-2.9	0.5-3.0	.43	.43	4	---	---
	10-20	20-32	1.40-1.55	4.23-14.11	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
	20-39	20-32	1.55-1.75	0.42-1.40	0.01-0.01	0.0-2.9	0.0-0.5	.43	.43			
	39-60	35-50	1.35-1.55	0.42-1.40	0.01-0.01	3.0-5.9	0.0-0.5	.28	.32			
Dm.												
Dumps, mine												
Gu:												
Guthrie------	0-7	10-25	1.35-1.55	4.23-14.11	0.20-0.22	0.0-2.9	1.0-2.0	.43	.43	4	---	---
	7-24	18-30	1.40-1.60	4.23-14.11	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	24-45	18-32	1.60-1.75	0.42-1.41	0.01-0.01	0.0-2.9	0.0-0.5	.43	.43			
	45-60	18-35	1.60-1.75	0.42-1.41	0.01-0.01	0.0-2.9	0.0-0.5	.43	.43			
HuB, HuC:												
Humphreys----	0-6	12-25	1.35-1.50	14.11-42.34	0.10-0.15	0.0-2.9	2.0-4.0	.28	.32	5	---	---
	6-46	18-32	1.35-1.55	14.11-42.34	0.09-0.14	0.0-2.9	0.0-0.5	.24	.28			
	46-60	18-32	1.40-1.60	14.11-42.34	0.06-0.12	0.0-2.9	0.0-0.5	.24	.28			

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
IrC, IrD:												
Ironcity-----	0-6	12-25	1.20-1.40	4.23-14.11	0.14-0.18	0.0-2.9	0.5-2.0	.28	.37	5	---	---
	6-30	25-35	1.30-1.55	4.23-14.11	0.14-0.18	0.0-2.9	0.5-1.0	.28	.32			
	30-60	35-50	1.35-1.65	4.23-14.11	0.08-0.13	3.0-5.9	0.0-0.5	.24	.32			
LaC:												
Lax----------	0-6	8-25	1.30-1.45	4.23-14.11	0.18-0.22	0.0-2.9	0.5-2.0	.43	.49	4	---	---
	6-22	18-35	1.30-1.50	4.23-14.11	0.16-0.20	0.0-2.9	0.0-0.5	.43	.43			
	22-42	18-35	1.50-1.75	0.01-0.42	0.00-0.00	0.0-2.9	0.0-0.5	.37	.43			
	42-60	30-45	1.40-1.60	0.01-1.40	0.00-0.00	3.0-5.9	0.0-0.5	.32	.43			
Ironcity-----	0-6	12-25	1.20-1.40	4.23-14.11	0.14-0.18	0.0-2.9	0.5-2.0	.28	.37	5	---	---
	6-30	25-35	1.30-1.55	4.23-14.11	0.14-0.18	0.0-2.9	0.5-1.0	.28	.32			
	30-60	35-50	1.35-1.65	4.23-14.11	0.08-0.13	3.0-5.9	0.0-0.5	.24	.32			
LbB, LbC:												
Lax----------	0-6	8-25	1.30-1.45	4.23-14.11	0.18-0.22	0.0-2.9	0.5-2.0	.43	.49	4	---	---
	6-22	18-35	1.30-1.50	4.23-14.11	0.16-0.20	0.0-2.9	0.0-0.5	.43	.43			
	22-42	18-35	1.50-1.75	0.01-0.42	0.00-0.00	0.0-2.9	0.0-0.5	.37	.43			
	42-60	30-45	1.40-1.60	0.01-1.40	0.00-0.00	3.0-5.9	0.0-0.5	.32	.43			
Le:												
Lee----------	0-6	18-27	1.35-1.50	4.23-14.11	0.12-0.18	0.0-2.9	1.0-3.0	.28	.32	5	---	---
	6-35	18-27	1.35-1.50	4.23-14.11	0.09-0.14	0.0-2.9	---	.28	.32			
	35-60	18-27	1.35-1.50	4.23-14.11	0.06-0.12	0.0-2.9	---	.28	.32			
Lo:												
Lobelville---	0-8	12-25	1.30-1.45	4.23-14.11	0.10-0.15	0.0-2.9	1.0-3.0	.28	.32	4	---	---
	8-45	18-35	1.35-1.50	4.23-14.11	0.08-0.13	0.0-2.9	---	.28	.32			
	45-60	18-35	1.35-1.50	4.23-14.11	0.06-0.14	0.0-2.9	---	.28	.32			
MnD:												
Minvale------	0-5	15-30	1.30-1.45	4.23-14.11	0.16-0.22	0.0-2.9	0.5-2.0	.32	.37	5	---	---
	5-65	20-35	1.40-1.55	4.23-14.11	0.12-0.18	0.0-2.9	0.0-0.5	.28	.32			
MtB:												
Mountview----	0-8	15-25	1.35-1.55	4.23-14.11	0.18-0.22	0.0-2.9	1.0-3.0	.43	.43	5	---	---
	8-31	20-35	1.40-1.60	4.23-14.11	0.17-0.20	0.0-2.9	0.0-0.5	.43	.43			
	31-65	35-55	1.30-1.50	4.23-14.11	0.10-0.15	3.0-5.9	0.0-0.5	.32	.37			
MtC2:												
Mountview----	0-5	15-25	1.35-1.55	4.23-14.11	0.18-0.22	0.0-2.9	1.0-3.0	.43	.43	5	---	---
	5-22	20-35	1.40-1.60	4.23-14.11	0.17-0.20	0.0-2.9	0.0-0.5	.43	.43			
	22-65	35-55	1.30-1.50	4.23-14.11	0.10-0.15	3.0-5.9	0.0-0.5	.32	.37			
PaB:												
Paden--------	0-6	18-32	1.30-1.45	4.23-14.11	0.18-0.23	0.0-2.9	0.5-3.0	.43	.43	4	---	---
	6-30	20-32	1.40-1.55	4.23-14.11	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
	30-48	20-35	1.60-1.80	0.01-1.41	0.01-0.01	0.0-2.9	0.0-0.5	.43	.43			
	48-60	25-45	1.60-1.80	0.01-1.41	0.01-0.01	0.0-2.9	0.0-0.5	.24	.24			
PkB:												
Pickwick-----	0-9	12-22	1.30-1.50	4.23-14.11	0.20-0.23	0.0-2.9	0.5-3.0	.43	.43	5	---	---
	9-43	22-35	1.40-1.65	4.23-14.11	0.19-0.22	0.0-2.9	0.0-0.5	.37	.37			
	43-65	32-45	1.45-1.65	4.23-14.11	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			
PkC2:												
Pickwick-----	0-7	12-22	1.30-1.50	4.23-14.11	0.20-0.23	0.0-2.9	0.5-3.0	.43	.43	5	---	---
	7-42	22-35	1.40-1.65	4.23-14.11	0.19-0.22	0.0-2.9	0.0-0.5	.37	.37			
	42-65	32-45	1.45-1.65	4.23-14.11	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
PkC3:												
Pickwick-----	0-5	27-35	1.30-1.50	4.23-14.11	0.18-0.22	0.0-2.9	0.5-2.0	.37	.37	5	---	---
	5-40	22-35	1.40-1.65	4.23-14.11	0.19-0.22	0.0-2.9	0.0-0.5	.37	.37			
	40-65	32-45	1.45-1.65	4.23-14.11	0.15-0.20	0.0-2.9	0.0-0.5	.37	.37			
Pt. Pits, gravel												
Rb:												
Riverby------	0-10	5-12	1.20-1.40	14.11-42.34	0.08-0.12	0.0-2.9	1.0-2.0	.20	.24	3	---	---
	10-60	4-20	1.30-1.60	42.34-141.14	0.03-0.06	0.0-2.9	0.0-2.0	.15	.24			
ROF. Rock outcrop.												
SaD, SaE:												
Saffell------	0-12	5-20	1.35-1.60	14.11-42.34	0.07-0.17	0.0-2.9	1.0-2.0	.20	.24	5	3	86
	12-45	12-35	1.35-1.60	4.23-14.11	0.06-0.12	0.0-2.9	0.0-0.5	.28	.32			
	45-60	10-25	1.40-1.65	4.23-42.34	0.04-0.11	0.0-2.9	0.0-0.5	.17	.20			
SmC2:												
Sengtown-----	0-6	12-27	1.35-1.55	4.23-14.11	0.10-0.16	0.0-2.9	1.0-2.0	.28	.37	5	---	---
	6-18	23-40	1.35-1.55	4.23-14.11	0.10-0.15	0.0-2.9	0.0-0.5	.24	.32			
	18-60	40-60	1.35-1.60	4.23-14.11	0.08-0.12	3.0-5.9	0.0-0.5	.24	.28			
Mountview----	0-5	15-25	1.35-1.55	4.23-14.11	0.18-0.22	0.0-2.9	1.0-3.0	.43	.43	5	---	---
	5-22	20-35	1.40-1.60	4.23-14.11	0.17-0.20	0.0-2.9	0.0-0.5	.43	.43			
	22-65	35-55	1.30-1.50	4.23-14.11	0.10-0.15	3.0-5.9	0.0-0.5	.32	.37			
Ta:												
Taft---------	0-6	10-25	1.30-1.40	4.23-14.11	0.20-0.22	0.0-2.9	2.0-5.0	.43	.43	4	---	---
	6-26	18-35	1.30-1.50	4.23-14.11	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	26-52	15-35	1.50-1.65	0.42-1.41	0.03-0.07	0.0-2.9	0.0-0.5	.43	.43			
	52-60	8-45	1.35-1.60	1.41-4.23	0.01-0.03	0.0-2.9	0.0-0.5	.37	.37			
TkC2:												
Tarklin------	0-5	18-25	1.25-1.45	4.23-42.34	0.13-0.18	0.0-2.9	0.5-2.0	.28	.32	3	5	56
	5-22	20-34	1.45-1.55	4.23-42.34	0.13-0.18	0.0-2.9	0.0-0.5	.28	.32			
	22-60	20-34	1.45-1.55	0.01-1.40	0.00-0.00	0.0-2.9	0.0-0.5	.20	.32			
TmC2:												
Tarklin------	0-5	18-25	1.25-1.45	4.23-42.34	0.13-0.18	0.0-2.9	0.5-2.0	.28	.32	3	5	56
	5-22	20-34	1.45-1.55	4.23-42.34	0.13-0.18	0.0-2.9	0.0-0.5	.28	.32			
	22-60	20-34	1.45-1.55	0.01-1.40	0.00-0.00	0.0-2.9	0.0-0.5	.20	.32			
Humphreys----	0-6	12-25	1.35-1.50	14.11-42.34	0.10-0.15	0.0-2.9	2.0-4.0	.28	.32	5	---	---
	6-46	18-32	1.35-1.55	14.11-42.34	0.09-0.14	0.0-2.9	0.0-0.5	.24	.28			
	46-60	18-32	1.40-1.60	14.11-42.34	0.06-0.12	0.0-2.9	0.0-0.5	.24	.28			
TrA:												
Trace--------	0-9	12-22	1.30-1.45	4.23-14.11	0.18-0.23	0.0-2.9	1.0-3.0	.37	.43	4	---	---
	9-35	18-32	1.30-1.50	4.23-14.11	0.17-0.21	0.0-2.9	0.0-0.5	.32	.37			
	35-38	12-30	1.40-1.60	4.23-42.34	0.07-0.14	0.0-2.9	0.0-0.5	.28	.32			
	38-80	5-18	1.40-1.60	42.34-141.14	0.01-0.07	0.0-2.9	0.0-0.5	.15	.24			
TrB:												
Trace--------	0-9	12-22	1.30-1.45	4.23-14.11	0.18-0.23	0.0-2.9	1.0-3.0	.37	.43	4	---	---
	9-35	18-27	1.30-1.50	4.23-14.11	0.17-0.21	0.0-2.9	0.0-0.5	.32	.37			
	35-38	12-27	1.40-1.60	4.23-42.34	0.07-0.14	0.0-2.9	0.0-0.5	---	---			
	38-65	5-18	1.40-1.60	42.34-141.14	0.01-0.07	0.0-2.9	0.0-0.5	---	---			

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
Ud. Udarents												
Ur. Urban land												
W. Water												

Table 17.—Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
AmB:				
Armour	0-16	---	---	5.1-6.0
	16-65	---	---	5.1-6.0
AmC2:				
Armour	0-14	---	---	5.1-6.0
	14-65	---	---	5.1-6.0
BbC, BbD, BbF:				
Biffle	0-12	---	---	3.6-5.0
	12-32	---	---	3.6-5.0
	32-60	---	---	---
BOF:				
Biffle	0-12	---	---	3.6-5.0
	12-29	---	---	3.6-5.0
	29-60	---	---	---
Sulphura	0-11	---	---	5.1-6.0
	11-25	---	---	5.1-6.5
	25-30	---	---	---
Rock outcrop.				
DeD, DeE:				
Dellrose	0-5	---	---	4.5-6.0
	5-42	---	---	4.5-6.0
	42-65	---	---	4.5-6.0
DkB2:				
Dickson	0-10	---	---	4.5-5.5
	10-20	---	---	4.5-5.5
	20-39	---	---	4.5-5.5
	39-60	---	---	4.5-5.5
DkC2:				
Dickson	0-10	---	5.0-10	4.5-5.5
	10-20	---	5.0-15	4.5-5.5
	20-39	---	---	4.5-5.5
	39-60	---	---	4.5-5.5
Dm.				
Dumps, mine				
Gu:				
Guthrie	0-7	---	---	3.6-5.5
	7-24	---	---	3.6-5.5
	24-45	---	---	3.6-5.5
	45-60	---	---	3.6-5.5
HuB, HuC:				
Humphreys	0-6	---	---	4.5-6.0
	6-46	---	---	4.5-6.0
	46-60	---	---	4.5-6.0
IrC, IrD:				
Ironcity	0-6	---	---	4.5-5.5
	6-30	---	---	4.5-5.5
	30-60	---	---	4.5-5.5

Table 17.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
LaC:				
Lax	0-6	---	---	4.5-6.5
	6-22	---	---	4.5-5.5
	22-42	---	---	4.5-5.5
	42-60	---	---	4.5-5.5
Ironcity	0-6	---	---	4.5-5.5
	6-30	---	---	4.5-5.5
	30-60	---	---	4.5-5.5
LbB, LbC:				
Lax	0-6	---	---	4.5-6.5
	6-22	---	---	4.5-5.5
	22-42	---	---	4.5-5.5
	42-60	---	---	4.5-5.5
Le:				
Lee	0-6	---	---	4.5-6.5
	6-35	---	---	4.5-5.5
	35-60	---	---	4.5-5.5
Lo:				
Lobelville	0-8	---	---	4.5-6.0
	8-45	---	---	4.5-6.0
	45-60	---	---	4.5-6.0
MnD:				
Minvale	0-5	---	---	4.5-5.5
	5-65	---	---	4.5-5.5
MtB:				
Mountview	0-8	---	---	4.5-5.5
	8-31	---	---	4.5-5.5
	31-65	---	---	4.5-5.5
MtC2:				
Mountview	0-5	---	---	4.5-5.5
	5-22	---	---	4.5-5.5
	22-65	---	---	4.5-5.5
PaB:				
Paden	0-6	---	5.0-10	4.5-5.5
	6-30	---	5.0-15	4.5-5.5
	30-48	---	5.0-15	4.5-5.5
	48-60	---	5.0-10	4.5-5.5
PkB:				
Pickwick	0-9	---	5.0-10	4.5-5.5
	9-43	---	5.0-15	4.5-5.5
	43-65	---	5.0-10	4.5-5.5
PkC2:				
Pickwick	0-7	---	5.0-10	4.5-5.5
	7-42	---	5.0-15	4.5-5.5
	42-65	---	5.0-10	4.5-5.5
PkC3:				
Pickwick	0-5	---	5.0-10	4.5-5.5
	5-40	---	5.0-15	4.5-5.5
	40-65	---	5.0-10	4.5-5.5
Pt.				
Pits, gravel				

Table 17.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
Rb:				
Riverby----------------	0-10	3.0-6.0	---	5.1-7.3
	10-60	3.0-6.0	---	5.1-7.3
ROF.				
Rock outcrop				
SaD, SaE:				
Saffell----------------	0-12	---	5.0-15	4.5-5.5
	12-45	---	10-20	4.5-5.5
	45-60	---	5.0-15	4.5-5.5
SmC2:				
Sengtown---------------	0-6	---	5.0-15	4.5-6.0
	6-18	---	5.0-15	4.5-6.0
	18-60	---	15-25	4.5-6.0
Mountview--------------	0-5	---	---	4.5-5.5
	5-22	---	---	4.5-5.5
	22-65	---	---	4.5-5.5
Ta:				
Taft-------------------	0-6	---	---	4.5-5.5
	6-26	---	---	4.5-5.5
	26-52	---	---	4.5-5.5
	52-60	---	---	4.5-5.5
TkC2:				
Tarklin----------------	0-5	---	---	3.6-5.5
	5-22	---	---	3.6-5.5
	22-60	---	---	3.6-5.5
TmC2:				
Tarklin----------------	0-5	---	---	3.6-5.5
	5-22	---	---	3.6-5.5
	22-60	---	---	3.6-5.5
Humphreys--------------	0-6	---	---	4.5-6.0
	6-46	---	---	4.5-6.0
	46-60	---	---	4.5-6.0
TrA:				
Trace------------------	0-9	5.0-10	---	5.1-6.0
	9-35	5.0-10	---	5.1-6.0
	35-38	5.0-10	---	5.1-6.0
	38-80	5.0-10	---	5.1-6.0
TrB:				
Trace------------------	0-9	5.0-10	---	5.1-6.0
	9-35	5.0-10	---	5.1-6.0
	35-38	5.0-10	---	5.1-6.0
	38-65	5.0-10	---	5.1-6.0
Ud.				
Udarents				
Ur.				
Urban land				
W.				
Water				

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. The symbol > means greater than; < means less than)

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				
AmB, AmC2:									
Armour	B								
		Jan-Dec	---	---	---	---	None	---	None
BbC, BbD, BbF:									
Biffle	B								
		Jan-Dec	---	---	---	---	None	---	None
BOF:									
Biffle	B								
		Jan-Dec	---	---	---	---	None	---	None
Sulphura	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
DeD, DeE:									
Dellrose	B								
		Jan-Dec	---	---	---	---	None	---	None
DkB2, DkC2:									
Dickson	C								
		January	1.5-2.0	---	---	---	None	---	None
		February	1.5-2.0	---	---	---	None	---	None
		March	1.5-2.0	---	---	---	None	---	None
		April	1.5-2.0	---	---	---	None	---	None
		December	1.5-2.0	---	---	---	None	---	None
Dm:									
Dumps, mine	---								
		Jan-Dec	---	---	---	---	None	---	None
Gu:									
Guthrie	D								
		January	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		February	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		March	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		April	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		May	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		December	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
HuB, HuC:									
Humphreys	B								
		January	5.0-6.0	>6.0	---	---	None	---	None
		February	5.0-6.0	>6.0	---	---	None	---	None
		March	5.0-6.0	>6.0	---	---	None	---	None
		December	5.0-6.0	>6.0	---	---	None	---	None
IrC, IrD:									
Ironcity	B								
		Jan-Dec	---	---	---	---	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				
LaC:									
Lax----------------	C								
		January	1.5-2.0	---	---	---	None	---	None
		February	1.5-2.0	---	---	---	None	---	None
		March	1.5-2.0	---	---	---	None	---	None
		April	1.5-2.0	---	---	---	None	---	None
		December	1.5-2.0	---	---	---	None	---	None
Ironcity-----------	B								
		Jan-Dec	---	---	---	---	None	---	None
LbB, LbC:									
Lax----------------	C								
		January	1.5-2.0	---	---	---	None	---	None
		February	1.5-2.0	---	---	---	None	---	None
		March	1.5-2.0	---	---	---	None	---	None
		April	1.5-2.0	---	---	---	None	---	None
		December	1.5-2.0	---	---	---	None	---	None
Le:									
Lee----------------	D								
		January	0.0	>6.0	---	---	None	Brief	Frequent
		February	0.0	>6.0	---	---	None	Brief	Frequent
		March	0.0	>6.0	---	---	None	Brief	Frequent
		April	0.0	>6.0	---	---	None	Brief	Frequent
		May	0.0	>6.0	---	---	None	Very brief	Frequent
		November	0.0	>6.0	---	---	None	Very brief	Frequent
		December	0.0	>6.0	---	---	None	Brief	Frequent
Lo:									
Lobelville---------	C								
		January	2.5-3.0	>6.0	---	---	None	Very brief	Occasional
		February	2.5-3.0	>6.0	---	---	None	Very brief	Occasional
		March	2.5-3.0	>6.0	---	---	None	Very brief	Occasional
		April	2.5-3.0	>6.0	---	---	None	Very brief	Occasional
		December	2.5-3.0	>6.0	---	---	None	Very brief	Occasional
MnD:									
Minvale------------	B								
		Jan-Dec	---	---	---	---	None	---	None
MtB, MtC2:									
Mountview----------	B								
		January	1.8-2.0	---	---	---	None	---	None
		February	1.8-2.0	---	---	---	None	---	None
		March	1.8-2.0	---	---	---	None	---	None
PaB:									
Paden--------------	C								
		January	2.0-2.5	---	---	---	None	---	None
		February	2.0-2.5	---	---	---	None	---	None
		March	2.0-2.5	---	---	---	None	---	None
		April	2.0-2.5	---	---	---	None	---	None
		December	2.0-2.5	---	---	---	None	---	None
PkB, PkC2, PkC3:									
Pickwick-----------	B								
		Jan-Dec	---	---	---	---	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				
Pt:									
Pits, gravel	---								
		Jan-Dec	---	---	---	---	None	---	None
Rb:									
Riverby	A								
		January	4.0-5.0	>6.0	---	---	None	Brief	Frequent
		February	4.0-5.0	>6.0	---	---	None	Brief	Frequent
		March	4.0-5.0	>6.0	---	---	None	Brief	Frequent
		April	4.0-5.0	>6.0	---	---	None	Brief	Frequent
		May	---	---	---	---	None	Brief	Frequent
		June	---	---	---	---	None	Brief	Frequent
		November	---	---	---	---	None	Brief	Frequent
		December	4.0-5.0	>6.0	---	---	None	Brief	Frequent
ROF:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
SaD, SaE:									
Saffell	B								
		Jan-Dec	---	---	---	---	None	---	None
SmC2:									
Sengtown	B								
		Jan-Dec	---	---	---	---	None	---	None
Mountview	B								
		January	1.8-2.0	---	---	---	None	---	None
		February	1.8-2.0	---	---	---	None	---	None
		March	1.8-2.0	---	---	---	None	---	None
Ta:									
Taft	C								
		January	1.0-2.0	---	---	---	None	---	None
		February	1.0-2.0	---	---	---	None	---	None
		March	1.0-2.0	---	---	---	None	---	None
		April	1.0-2.0	---	---	---	None	---	None
		December	1.0-2.0	---	---	---	None	---	None
TkC2:									
Tarklin	C								
		January	1.5-2.0	---	---	---	None	---	None
		February	1.5-2.0	---	---	---	None	---	None
		March	1.5-2.0	---	---	---	None	---	None
		April	1.5-2.0	---	---	---	None	---	None
		December	1.5-2.0	---	---	---	None	---	None
TmC2:									
Tarklin	C								
		January	1.5-2.0	---	---	---	None	---	None
		February	1.5-2.0	---	---	---	None	---	None
		March	1.5-2.0	---	---	---	None	---	None
		April	1.5-2.0	---	---	---	None	---	None
		December	1.5-2.0	---	---	---	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				
TmC2:									
Humphreys----------	B								
		January	5.0-6.0	>6.0	---	---	None	---	None
		February	5.0-6.0	>6.0	---	---	None	---	None
		March	5.0-6.0	>6.0	---	---	None	---	None
		December	5.0-6.0	>6.0	---	---	None	---	None
TrA:									
Trace--------------	B								
		January	---	---	---	---	None	Very brief	Occasional
		February	---	---	---	---	None	Very brief	Occasional
		March	---	---	---	---	None	Very brief	Occasional
		April	---	---	---	---	None	Very brief	Occasional
		November	---	---	---	---	None	Very brief	Occasional
		December	---	---	---	---	None	Very brief	Occasional
TrB:									
Trace--------------	B								
		January	---	---	---	---	None	Extremely brief	Rare
		February	---	---	---	---	None	Extremely brief	Rare
		March	---	---	---	---	None	Extremely brief	Rare
		April	---	---	---	---	None	Extremely brief	Rare
		May	---	---	---	---	None	Extremely brief	Rare
		December	---	---	---	---	None	Extremely brief	Rare
Ud:									
Udarents-----------	---								
		Jan-Dec	---	---	---	---	None	---	None
Ur:									
Urban land---------	---								
		Jan-Dec	---	---	---	---	None	---	None
W:									
Water--------------	---								
		Jan-Dec	---	---	---	---	None	---	None

Table 19.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
AmB, AmC2:							
Armour	---	---	---	---	None	Moderate	Moderate
BbC, BbD, BbF:							
Biffle	Bedrock (paralithic)	20-40	---	Strongly cemented	None	Moderate	High
BOF:							
Biffle	Bedrock (paralithic)	20-40	---	Strongly cemented	None	Moderate	High
Sulphura	Bedrock (lithic)	20-40	---	Indurated	None	Low	Moderate
Rock outcrop	Bedrock (lithic)	---	---	Indurated	None	---	---
DeD, DeE:							
Dellrose	---	---	---	---	None	High	Moderate
DkB2:							
Dickson	Fragipan	---	---	Noncemented	None	Moderate	Moderate
DkC2:							
Dickson	Fragipan	---	---	Noncemented	None	High	Moderate
Dm.							
Dumps, mine							
Gu:							
Guthrie	Fragipan	---	---	Noncemented	None	High	High
HuB, HuC:							
Humphreys	---	---	---	---	None	Moderate	Moderate
IrC, IrD:							
Ironcity	---	---	---	---	None	High	Moderate
LaC:							
Lax	Fragipan	---	---	Noncemented	None	High	Moderate
Ironcity	---	---	---	---	None	High	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
LbB, LbC:							
Lax	Fragipan	---	---	Noncemented	None	High	Moderate
Le:							
Lee	---	---	---	---	None	High	High
Lo:							
Lobelville	---	---	---	---	None	High	Moderate
MnD:							
Minvale	---	---	---	---	None	Moderate	Low
MtB, MtC2:							
Mountview	---	---	---	---	None	Moderate	Moderate
PaB:							
Paden	Fragipan	---	---	Noncemented	None	High	Moderate
PkB, PkC2, PkC3:							
Pickwick	---	---	---	---	None	Moderate	Moderate
Pt.							
Pits, gravel							
Rb:							
Riverby	---	---	---	---	None	Low	Moderate
ROF:							
Rock outcrop	Bedrock (lithic)	---	---	Indurated	None	---	---
SaD, SaE:							
Saffell	---	---	---	---	None	Low	Moderate
SmC2:							
Sengtown	---	---	---	---	None	High	Moderate
Mountview	---	---	---	---	None	Moderate	Moderate
Ta:							
Taft	Fragipan	---	---	Noncemented	None	High	High
TkC2:							
Tarklin	Fragipan	---	---	Noncemented	None	Moderate	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
TmC2:							
Tarklin	Fragipan	---	---	Noncemented	None	Moderate	High
Humphreys	---	---	---	---	None	Moderate	Moderate
TrA, TrB:							
Trace	---	---	---	---	None	Low	Moderate
Ud.							
Udarents							
Ur.							
Urban land							
W.							
Water							

Table 20.—Classification of the Soils

(An asterisk indicates that the soil is considered a taxadjunct to the series. See the section "Classification of the Soils" for a description of the soil)

Soil name	Family or higher taxonomic class
Armour	Fine-silty, mixed, active, thermic Ultic Hapludalfs
Biffle	Fine-loamy, siliceous, semiactive, thermic Typic Hapludults
Dellrose	Fine-loamy, mixed, semiactive, thermic Typic Paleudults
Dickson	Fine-silty, siliceous, semiactive, thermic Glossic Fragiudults
Guthrie	Fine-silty, siliceous, semiactive, thermic Typic Fragiaquults
Humphreys	Fine-loamy, siliceous, semiactive, thermic Humic Hapludults
Ironcity	Fine-loamy, siliceous, subactive, thermic Typic Paleudults
Lax	Fine-silty, siliceous, semiactive, thermic Typic Fragiudults
Lee	Fine-loamy, siliceous, semiactive, acid, thermic Typic Endoaquepts
Lobelville	Fine-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts
Minvale	Fine-loamy, siliceous, subactive, thermic Typic Paleudults
Mountview	Fine-silty, siliceous, semiactive, thermic Oxyaquic Paleudults
Paden	Fine-silty, mixed, semiactive, thermic Glossic Fragiudults
Pickwick	Fine-silty, mixed, semiactive, thermic Typic Paleudults
Riverby	Loamy-skeletal, mixed, semiactive, nonacid, thermic Typic Udifluvents
Saffell	Loamy-skeletal, siliceous, semiactive, thermic Typic Hapludults
Sengtown	Fine, mixed, thermic Typic Paleudalfs
Sulphura	Loamy-skeletal, siliceous, semiactive, thermic Typic Dystrudepts
Taft	Fine-silty, siliceous, semiactive, thermic Glossaquic Fragiudults
*Tarklin	Fine-loamy, siliceous, semiactive, mesic Typic Fragiudults
Trace	Fine-silty, mixed, semiactive, thermic Ultic Hapludalfs

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