United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with the West Virginia Agricultural and Forestry Experiment Station and the United States Department of Agriculture, Forest Service

Soil Survey of Greenbrier County, West Virginia

How To Use This Soil Survey

General Soil Map

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

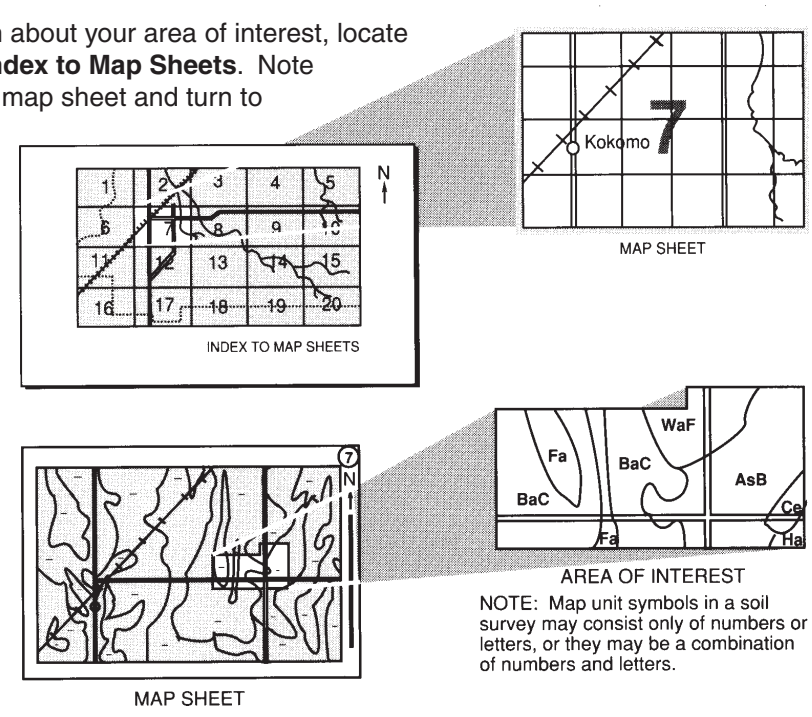
To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

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

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

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



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.

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

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1998. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1998. This survey was made cooperatively by the Natural Resources Conservation Service; the West Virginia Agricultural and Forestry Experiment Station; and the United States Department of Agriculture, Forest Service. The survey is part of the technical assistance furnished to the West Virginia Conservation Agency and the Greenbrier Valley Conservation District.

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

Cover: A variety of landforms and land uses in an area east of Muddy Creek Mountain, looking northeast toward Lewisburg.

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 May 2007

Foreword

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

This soil survey is designed for many different users. Farmers, 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 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, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Ronald L. Hilliard
State Conservationist
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Soil Survey of Greenbrier County, West Virginia

By Donald G. Flegel, Natural Resources Conservation Service

Soils surveyed by Donald G. Flegel, Timothy A. Dilliplane, Scott L. Hoover, S. Jason Teets, and Jennifer Brookover, Natural Resources Conservation Service, and Linton Wright, Jr., Forest Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
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Greenbrier County is in the southeastern part of West Virginia (fig. 1). It is the second largest county in the State and has a total area of 655,800 acres, or nearly 1,025 square miles. The county is very irregular in shape because mountain ridges form the boundaries on the east and southeast and Meadow River is the boundary on the northwest. The Virginia-West Virginia state line is the eastern boundary. The county's longest dimension, which runs from east to west, is about 51 miles. The maximum distance from north to south is about 41 miles. The Greenbrier River is the major river in the county. In 2000, the population of Greenbrier County was 34,453 (FedStats n.d.). The major enterprises in the county are agriculture, wood industries, coal mining, small factories, and the tourism industry.

This soil survey updates an earlier survey of Greenbrier County (Gorman and others 1972). This update provides expanded information on the soils and their uses and includes interpretations not included in the previous soil survey.

Figure 1.—Location of Greenbrier County in West Virginia.

General Nature of the County

This section provides information about some of the natural and cultural factors that affect land use in the county. It describes settlement;

farming; transportation facilities; physiography, relief, and drainage; climate; and geology.

Settlement

Greenbrier County was formed in 1778 from parts of Montgomery and Botetourt Counties by an act of the Virginia General Assembly passed on January 12, 1778. Between 1758 and 1761, about 100 people settled on Muddy Creek Mountain and on the Big Levels, or Great Savanna, the site of Lewisburg (fig. 2). This settlement was destroyed in 1763, and for the next 5 years, the area was depopulated until a peaceful resolution was reached by settlers and Native Americans in 1765. The first permanent settlement was made by Col. John Lewis in 1768 on the present site of Lewisburg, which was then known as Lewis Springs. In 1774, Fort Union, which was later renamed Fort Savanna, was built. In the same year, war broke out again and continued until the warriors were subdued by Col. Andrew Lewis and his volunteer militia of 1,500 men, which was organized at Fort Union (Vessel, Swann, and Fridley 1941).

The earliest settlers were principally from Scotland and Ireland. They established homes in the vicinity of Lewisburg. A few German immigrants settled throughout the limestone valley, and probably in the late 19th century, other German immigrants took up residence on Butlers Mountain. Several persons of Irish descent settled in Raders Valley (Vessel, Swann, and Fridley 1941).

Farming

In 1997, the county had 303 farms and a total of 184,359 acres of farmland (U.S. Department of Commerce 1999). Between 1992 and 1997, the total acreage of farmland in the county increased by 4,623 acres, but the average size of farms decreased slightly from 255 to 254 acres.

Figure 2.—Lewisburg, the county seat, is located in a large sinkhole in the area of the county called "Big Levels."

The main agricultural enterprises in the county are raising beef cattle, sheep, and poultry and dairying plus the production of corn, oats, pasture, and hay. Raising cattle provides the greatest source of farm income in the county. Most farms are operated on a part-time basis.

Transportation Facilities

The transportation needs of Greenbrier County are served by Federal and state highways and by a railroad system in the southern and western sections of the county. Interstate 64 runs east-west through the southern half of the county and, for the most part, is paralleled by U.S. Route 60. U.S. Route 219 runs north-south through the center of the county. West Virginia Routes 20, 12, and 92 also run north-south. Route 20 is in the western part of the county, Route 12 is directly west of the center of the county, and Route 92 is in the eastern part of the county.

Physiography, Relief, and Drainage

Greenbrier County lies in both the Eastern Allegheny Plateau and Mountains and the Southern Appalachian Ridges and Valleys Major Land Resource Areas. The dividing line between these two areas roughly follows the west side of the Greenbrier River.

The landforms of the county show the effects of orogenic movement coupled with erosional forces. Elevation, kind and position of rock, position of drainage courses, and climate are factors that also affect the type of topography in the county. The plateau and mountain area has nearly horizontal rocks that contain many resistant layers at the higher elevations with more weatherable rock below. This results in a dendritic drainage pattern. The ridge and valley area is slightly to strongly folded, and faults occur in several areas with resistant layers that are separated by large expanses of more weatherable rock. This results in a trellis drainage pattern.

The western part of the county, or plateau and mountain area, is generally higher in elevation and lower in temperature and has a greater amount of precipitation than that of the eastern part of the county, or ridge and valley area. As a result of these factors, a rugged and complicated relief exists (Price 1939). The highest and lowest elevations in the survey area are 4,372 feet at Grassy Knob at the junction of Old Field Mountain and Cold Knob Mountain and 1,520 feet along the Greenbrier River at the point where it leaves the county, which is the common corner of Greenbrier, Monroe, and Summers Counties.

Climate

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

Winters are cold and snowy at the higher elevations in Greenbrier County. They are also cold in the valleys, but intermittent thaws preclude a long-lasting snow cover. Summers are fairly warm on mountain slopes and very warm with occasional very hot days in the valleys. Rainfall is evenly distributed during the year, but it is appreciably heavier on the windward, west-facing slopes than in the valleys. Normal annual precipitation is adequate for all crops, although summer temperatures and the length of the growing season, particularly at the higher elevations, may be inadequate.

The divide of the Allegheny Mountains, the main topographic barrier of the Eastern Allegheny Plateau and Mountains resource area, runs through the county, directly west of center, and forms a “rain shadow” that shelters the eastern portion of the county from the prevailing storm systems that move from northwest to southeast. For this reason, climate data recorded in the western part of the county will show lower

average temperatures and higher average precipitation than the data recorded at Lewisburg in the eastern part of the county.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Lewisburg in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season. The data on the number of thunderstorm days, relative humidity, percent sunshine, and wind were estimated based on that recorded at Beckley, West Virginia.

In winter, the average temperature is 33.1 degrees F and the average daily minimum temperature is 23.0 degrees. The lowest temperature on record, which occurred on December 23, 1989, is -22 degrees. In summer, the average temperature is 69.7 degrees and the average daily maximum temperature is 81.7 degrees. The highest recorded temperature, which occurred on July 17, 1988, is 98 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 (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 40.60 inches. Of this, 18.4 inches, or 45 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 4.06 inches on July 19, 1954. Thunderstorms occur on about 47 days each year, and most occur in July.

The average seasonal snowfall is about 28.5 inches. The greatest snow depth at any one time during the period of record was 33 inches recorded on January 12, 1996. On the average, 19 days of the year have at least 1 inch of snow on the ground. The heaviest 24-hour snowfall on record was 20 inches recorded on April 3, 1901, and again on March 14, 1993.

The average relative humidity in midafternoon is about 61 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 61 percent of the time possible in summer and 39 percent in winter. The prevailing wind is from the southeast. Average windspeed is highest, 9.6 miles per hour, in March.

Geology

The surface rocks in the county are of sedimentary origin. The county can be divided into four areas that have somewhat different geologic features.

The area in the headwaters of the Meadow and Cherry Rivers and their tributaries is an eroded plateau where the ridgetops and upper side slopes are comprised of the Kanawha, New River, and Pocahontas Formations of the Pottsville Group of Pennsylvanian age. The middle and lower side slopes consist of the Bluestone, Princeton, and Hinton Formations of the Mauch Chunk Group of Mississippian age. The Pottsville Group on ridgetops usually consists of sandstone and conglomerate. At the higher elevations these positions are occupied by the Gauley, Summers, Leatherbark, and Simoda soils. The Pottsville Group and the Bluestone and Princeton Formations of the Mauch Chunk Group on the upper and middle side slopes consist of yellow and brown shale and siltstone. Mandy soils are on these sites, and Snowdog and Trussel soils are on the footslopes. The strip-mined areas in the Pottsville Group are covered by the Briery soils at the higher elevations, such as Cold Knob. At the lower elevations in the Pottsville Group and Bluestone and Princeton Formations of the Mauch Chunk Group, the Gilpin and Lily soils are on the ridgetops, the Gilpin soils are on the side slopes, and the Macove soils are on the footslopes. The Kaymine soils are in strip-mined areas at these lower elevations. The lower side

slopes that are in the Hinton Formation of the Mauch Chunk Group are comprised mainly of siltstone and shale. The reddish Cateache soils and the yellowish Culleoka soils are on the side slopes, and the reddish Shouns soils and yellowish Macove soils are on the footslopes.

The central part of the county includes the flats along the Greenbrier River, west to the area previously described. This area is comprised, in part, by the Bluefield Formation of the Mauch Chunk Group, which consists mainly of siltstone and shale. It is in the vicinity of Leonard and runs in a southwesterly direction to Alderson. The reddish Cateache soils and the yellowish Culleoka soils are on the side slopes, and Shouns and Macove soils are on the footslopes. Lily, Dekalb, Berks, and Cookport soils are on large flats that are made up of massive sandstone (fig. 3) on Muddy Creek and Brushy Mountains. The Greenbrier Group, which is directly below the Bluefield Formation, consists of limestone and calcareous shale (fig. 4). It reaches its maximum exposure in the Richlands area, also known as Big Levels. Frederick, Caneyville, and Frankstown soils are on the side slopes and in rolling areas, Shouns soils are on the footslopes and benches, and Dunning soils are in the upland depressions. The Maccrady Series consists primarily of red shale and siltstone and some thin-bedded sandstone. Cateache and Shouns soils are in areas of this geologic deposit. The Pocono Group mainly consists of several hard sandstone members that form many of the ridges and flats near the Greenbrier River. It also includes some shale and siltstone. Dekalb and Berks soils are generally on side slopes, and Lily soils are in more level areas, which is especially evident in the area north and south of Auto.

Figure 3.—A view from Muddy Creek Mountain looking west to younger geology.

Figure 4.—Culverson Creek disappears into a limestone opening near Unus.

The remaining two areas are in the eastern half of the county. The area containing the oldest rock in the county starts at White Sulphur Springs and extends northeastward into Pocahontas County. This area is highly folded and faulted and is comprised of lower Devonian, Silurian, and Ordovician rocks. The Huntersville Chert and the Oriskany Formation, which is comprised of massive sandstone, form the flanks of this area with outcrops on Bobs Ridge and Coles Mountain and create the shoulders or "knobs" paralleling Beaver Lick Mountain. Elliber, Dekalb, and Hazleton soils are in areas of these geologic deposits. The Helderberg Group is comprised primarily of limestone. The dominant soil is Faywood. Blackthorn soils are in areas where the limestone has been blanketed by coarse colluvial material. The Silurian age materials are made up of the Cayugan Series, the McKenzie Formation, the Clinton Group, and the Tuscarora Sandstone. The Cayugan Series is comprised of thin-bedded, platy limestone, shale, and a sandstone member. Faywood, Berks, and Dekalb soils formed in these materials. The McKenzie Formation consists of limestone. Faywood and Blackthorn soils formed in this material. The Clinton Group and the Tuscarora Sandstone, combined with the Ordovician-aged Juniata Formation, form the rugged landscape that is on Beaver Lick Mountain. The Clinton Group is comprised of shale, sandstone, and what has been called "ironstone." The Tuscarora is a massive, white quartzitic sandstone that carries a siliceous cement, which makes

it the most resistant rock in the county (Price 1939). The Juniata Formation, which is composed of alternating red sandstone and red sandy shales, is the oldest deposit exposed in the county. It outcrops on the west side of Beaver Lick Mountain, along the Burr Fault. Calvin, Dekalb, and Berks soils are on this rugged landscape.

The final area forms a U-shaped band around the previously described area. The material here is of Upper and Middle Devonian age. It is comprised of a very narrow band of the Hampshire Formation, the Chemung Group, the Brallier Formation, and the Millboro Shales. Also included is the Mississippian-age Pocano Group that, in this area, is mainly along the West Virginia-Virginia state line. The Pocano Group consists mostly of several hard sandstone members, most notably Meadow Creek, Allegheny, and Kates Mountains, that form ridges in this area. It also includes some shale and siltstone. Lily soils are on the broader ridgetops, and Dekalb and Berks soils are on some of the ridges and on the side slopes. The Hampshire Formation is made up of shale, siltstone, and sandstone and is in a very narrow band to the west and east of the previously described area. This formation is so narrow and similar to the overlying and underlying geologic layers, that the soils are the same as those of the other geologic layers. The Chemung Group comprises the largest single assemblage of beds in Greenbrier County (Price 1939). It consists of yellowish brown interbedded sandstone and shale. Berks, Weikert, and Rough soils are in this geologic layer. The Brallier Formation is comprised mainly of gray shale but includes some siltstone and fine grained sandstone. This formation weathers to form the low, rounded hills that are adjacent to the major drainageways in the area, such as Anthony Creek and Little Creek. Weikert soils are on the residual portions of this geologic formation, Macove and Ernest soils are on the footslopes, and Atkins, Philo, and Potomac soils are in the alluvial areas. The Millboro Shales are comprised of black and greenish gray fissile shales, some of which are the most erodible rocks in the county. Weikert soils are in the residual areas, which are usually low, rolling hills. Many of these areas are also covered with colluvial material, originating in the lower Devonian, Silurian, and Ordovician Systems. Mertz soils are in these areas.

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.

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

General Soil Map Units

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

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

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

1. Potomac-Chavies-Philo-Atkins

Nearly level, very deep, poorly drained to somewhat excessively drained, loamy soils formed in alluvium derived from sandstone, siltstone, shale, and chert; on flood plains and low stream terraces

The landscape is characterized by broad, nearly level flood plains. Some areas of this map unit are cut by stream channels that flow only during periods of high water. Cobbles are in areas of the map unit, mainly along streams and old stream channels. The better drained soils are generally parallel and adjacent to the streams, and the wetter soils are generally farther from the streams. The native vegetation is dominantly hardwoods with some conifers.

This map unit makes up about 3 percent of the survey area. It is about 15 percent Potomac soils, 12 percent Chavies soils, 12 percent Philo soils, 11 percent Atkins soils, and 50 percent soils of minor extent.

These very deep, somewhat excessively drained, nearly level Potomac soils are on flood plains and are subject to frequent flooding. They formed in alluvial material washed from acid and limy soils on uplands. They have a dark brown, medium textured surface layer and a brown and yellowish brown, coarse textured substratum.

These very deep, well drained, nearly level Chavies soils are on low stream terraces and are subject to rare flooding. They formed in alluvial material washed from acid and limy soils on uplands. They have a brown, medium textured surface layer and a brown and yellowish brown, medium textured substratum.

These very deep, moderately well drained, nearly level Philo soils are on flood plains and are subject to occasional flooding. They formed in alluvial material washed from acid soils on uplands. They have a dark grayish brown, medium textured surface layer and a yellowish brown, medium textured substratum.

These very deep, poorly drained, nearly level Atkins soils are on flood plains and are subject to frequent flooding. They formed in alluvial material washed from acid

soils on uplands. They have a dark grayish brown, medium textured surface layer and a grayish brown and brown, medium textured substratum.

Of minor extent in this map unit are the well drained Allegheny, Nolin, Pope, Sensabaugh, and Tioga soils, the moderately well drained Lobdell soils, and the poorly drained Holly and Purdy soils.

About 90 percent of this unit has been cleared and is used intensively for row crops, hay, or pasture. Wooded areas are generally small in size and parallel the streams.

The main hazard affecting most uses of these soils is the flooding.

2. Melvin-Lindside

Nearly level, very deep, poorly drained and moderately well drained, silty soils formed in alluvium derived from siltstone, shale, limestone, and sandstone; on flood plains

The landscape is characterized by broad, nearly level flood plains. Some areas of this map unit are cut by stream channels that flow only during periods of high water. The better drained soils are generally parallel and adjacent to the streams, and the wetter soils are generally farther from the streams. The native vegetation is dominantly hardwoods with some conifers.

This map unit makes up about 2 percent of the survey area. It is about 50 percent Melvin soils, 35 percent Lindside soils, and 15 percent soils of minor extent.

These very deep, poorly drained, nearly level Melvin soils are on flood plains and are subject to frequent flooding. They formed in alluvial material washed from acid and limy soils on uplands. They have a dark grayish brown, medium textured surface layer and a dark grayish brown, medium textured substratum.

These very deep, moderately well drained, nearly level Lindside soils are on flood plains and are subject to occasional flooding. They formed in alluvial material washed from acid and limy soils on uplands. They have a dark brown, medium textured surface layer and a dark brown, brown, and yellowish brown, medium textured substratum.

Of minor extent in this map unit are the well drained Allegheny and Shouns soils.

About 90 percent of this unit has been cleared and is used intensively for hay or pasture. Wooded areas are generally small in size and parallel the streams.

The main limitations affecting most uses of these soils are the wetness and the flooding.

3. Frederick-Caneyville-Frankstown

Gently sloping to very steep, moderately deep, deep, and very deep, well drained, clayey and loamy soils formed in limestone with some sandstone, siltstone, and shale; on uplands

The landscape is characterized by a relatively vast expanse of rolling farmland known as the Big Levels. This map unit mainly occurs as a broad, rolling plateau peppered with sinkholes. Surface drains exist, but nearly all become subsurface drains before leaving the map unit. Rock outcrop and stones are in some areas on the steeper side slopes. The native vegetation is dominantly hardwoods.

This map unit makes up about 13 percent of the survey area. It is about 39 percent Frederick soils, 23 percent Caneyville soils, 14 percent Frankstown soils, and 24 percent soils of minor extent.

These very deep, well drained, gently sloping to very steep Frederick soils are on rolling hills and side slopes. They formed in material weathered from limestone. They have a dark yellowish brown, medium textured surface layer and a strong brown, yellowish red, and red, fine textured subsoil.

These moderately deep, well drained, gently sloping to very steep Caneyville soils are on rolling hills and side slopes. They formed in material weathered from limestone. They have a brown, medium textured surface layer and strong brown and yellowish red, fine textured subsoil.

These deep and very deep, well drained, gently sloping to strongly sloping Frankstown soils are on rolling hills. They formed in material weathered from limestone that includes layers of limy shale. They have a very dark grayish brown, medium textured surface layer and yellowish brown and strong brown, medium textured subsoil.

Of minor extent in this map unit are the well drained Culleoka and Cateache soils on the upper side slopes, moderately well drained soils, and the poorly drained Dunning soils in upland depressions.

About 95 percent of this map unit has been cleared and is used for general livestock farming and the production of winter forage and cash crops. The map unit is also used for homesite and community development. The wooded areas occur as small, scattered farm woodlots. A few limestone quarries are in the map unit.

The main limitations affecting most uses of these soils are the slope, a shrink-swell potential, slow permeability, and the depth to bedrock.

4. Cateache-Culleoka

Gently sloping to very steep, moderately deep, well drained, loamy soils formed in siltstone, shale, and some sandstone; on mountainous uplands and foothills

The landscape is characterized by broad, strongly sloping ridgetops and very steep side slopes broken by long, narrow, moderately steep benches. Drainageways have cut into the side slopes forming very steep coves. Stones and boulders are common in areas of this map unit, and sandstone and limestone outcrops form bands across some of the slopes. A narrow map unit in the eastern part of the county is characterized by gently sloping to steep foothills that are not covered with stones and boulders. The native vegetation is dominantly northern hardwoods.

This map unit makes up about 22 percent of the survey area. It is about 38 percent Cateache soils, 31 percent Culleoka soils, and 31 percent soils of minor extent.

These moderately deep, well drained, gently sloping to very steep Cateache soils are on ridgetops and side slopes. They formed in material weathered from brown and dark reddish brown siltstone, shale, and fine grained sandstone. They have a dark brown, medium textured surface layer and a dark reddish brown and reddish brown, medium textured subsoil.

These moderately deep, well drained, gently sloping to very steep Culleoka soils are on ridgetops, side slopes, and benches. They formed in material weathered from siltstone, shale, and fine grained sandstone. They have a very dark grayish brown, medium textured surface layer and a yellowish brown and strong brown, medium textured subsoil.

Of minor extent in this map unit are the well drained Dekalb, Lily, and Berks soils on uplands and Shouns soils on footslopes.

About 75 percent of this map unit is wooded and used for timber production, recreation, or wildlife habitat. Sugar maple, American beech, black cherry, and northern red oak are at the higher elevations of the map unit, and black locust, black walnut, and shagbark hickory are at the lower elevations. Cleared areas are used for pasture with the less sloping areas being used for the production of winter forage.

The main limitations affecting most uses of these soils are the slope, the stones on the soil surface, and downslope soil movement.

5. Macove-Gilpin

Gently sloping to very steep, moderately deep and very deep, well drained, loamy soils formed in siltstone, shale, and sandstone; on mountainous uplands, benches, and footslopes

The landscape is characterized by broad ridgetops that give way to very steep, rugged hillsides. Stones are on most of the side slopes with scattered sandstone outcrops along the ridgetops. The native vegetation consists mainly of hardwoods and some conifers.

This map unit makes up about 15 percent of the survey area. It is about 48 percent Macove soils, 27 percent Gilpin soils, and 25 percent soils of minor extent.

These very deep, well drained, strongly sloping to very steep Macove soils are on footslopes, benches, and side slopes. They formed in colluvial material derived from sandstone, siltstone, and shale. They have a dark brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

These moderately deep, well drained, gently sloping and strongly sloping Gilpin soils are on ridgetops and benches. They formed in material weathered from siltstone, shale, and fine grained sandstone. They have a very dark grayish brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

Of minor extent in this map unit are the well drained Dekalb and Lily soils on ridgetops and side slopes, the Kaymine soils on strip-mined benches, and the moderately well drained Cookport soils on ridgetops.

About 85 percent of this unit is woodland. It is used for timber production, recreation, and wildlife habitat. A mixed-mesophytic timber type dominates the map unit. Chestnut oak and hickories dominate ridgetops and the upper side slopes with south aspects. White oak dominates the middle side slopes with yellow-poplar, red maple, white ash, northern red oak, and eastern white pine mixed in the stand on north aspects and footslopes. Cleared areas are used for pasture and hay.

The main limitations affecting most uses of these soils are the slope, the stones on the surface, and the depth to bedrock.

6. Lily-Dekalb

Gently sloping to very steep, moderately deep, well drained loamy soils formed mainly in sandstone with some siltstone and shale; on mountainous uplands and benches

The landscape is characterized by broad, gently rolling flats that give way to very steep, rugged hillsides. Stones are on most of the side slopes with scattered sandstone outcrops along the ridgetops. The native vegetation consists mainly of hardwoods and some conifers with a scattered dense understory of rhododendron, mountain laurel, and huckleberry.

This map unit makes up about 7 percent of the survey area. It is about 52 percent Lily soils, 25 percent Dekalb soils, and 23 percent soils of minor extent.

These moderately deep, well drained, gently sloping to strongly sloping Lily soils are on ridgetops and benches. They formed in material weathered from yellowish brown and gray sandstone. They have a grayish brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

These moderately deep, well drained, strongly sloping to very steep Dekalb soils are on side slopes and some ridgetops. They formed in material weathered mainly from sandstone. They have a very dark grayish brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

Of minor extent in this map unit are the well drained Berks soils on ridgetops and side slopes and the well drained Macove soils on footslopes and in coves.

About 75 percent of this unit is woodland. It is used for timber production, recreation, and wildlife. An oak-hickory timber type dominates this map unit. Chestnut oak and hickories dominate ridgetops and the upper side slopes with south aspects. White oak dominates the middle side slopes with yellow-poplar, red maple, white ash, northern red oak, and eastern white pine mixed in the stand on north aspects and footslopes. Cleared areas are being used for pasture.

The main limitations affecting most uses of these soils are the slope, the stones on the surface, and the depth to bedrock.

7. Berks-Dekalb

Gently sloping to very steep, moderately deep, well drained, loamy soils formed in siltstone, shale, and sandstone; on mountainous uplands

The landscape is characterized by highly dissected topography. The mountains have broad, sloping to sharp, strongly sloping ridgetops that separate very steep, smooth side slopes. The native vegetation is dominantly hardwoods on the upper slopes and mixed hardwoods and conifers on the lower slopes.

This map unit makes up about 13 percent of the survey area. It is about 48 percent Berks soils, 24 percent Dekalb soils, and 28 percent soils of minor extent.

These moderately deep, well drained, gently sloping to very steep Berks soils are on ridgetops and side slopes. They formed in material weathered from interbedded siltstone, shale, and fine grained sandstone. They have a dark brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

These moderately deep, well drained, strongly sloping to very steep Dekalb soils are on ridgetops and side slopes. They formed in material weathered from sandstone, siltstone, and shale. They have a dark brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

Of minor extent in this map unit are the well drained Lily soils on uplands and the well drained Macove soils on footslopes, benches, and alluvial fans.

This map unit is mostly wooded and used for timber production, recreation, and wildlife. Cleared areas are used for pasture and the areas adjacent to the large expanses of bottom land are used for camps and summer homes.

The main limitations affecting most uses of these soils are the slope and the depth to bedrock.

8. Blackthorn-Mertz-Dekalb-Elliber

Gently sloping to very steep, moderately deep and very deep, well drained loamy soils formed in sandstone, siltstone, shale, and chert; on mountainous uplands, benches, and footslopes

The landscape is characterized by rugged mountainous topography. A very narrow, high ridge is in the center of this map unit. Very steep side slopes are met at a lower elevation by knobs that are along both the western and eastern sides of the high ridge. Stones are in most areas of this map unit with sandstone outcrops along the ridgetops and on the northern and southern side slopes of the knobs. The native vegetation consists mainly of hardwoods and some conifers with an understory consisting of a very dense growth of mountain laurel and huckleberry.

This map unit makes up about 3 percent of the survey area. It is about 23 percent Blackthorn soils, 14 percent Mertz soils, 13 percent Dekalb soils, 10 percent Elliber soils, and 40 percent soils of minor extent.

These very deep, well drained, strongly sloping to very steep Blackthorn soils are on footslopes, benches, and side slopes. They formed in colluvial material derived from sandstone and shale and the underlying residuum derived from limestone and

limy shales. The surface layer is dark brown and medium textured, the upper part of the subsoil is yellowish brown and medium textured, and the lower part of the subsoil is strong brown and fine textured.

These very deep, well drained, gently sloping to steep Mertz soils are on footslopes and benches. They formed in cherty colluvium that contains various amounts of sandstone, siltstone, and shale. They have a very dark grayish brown, medium textured surface layer and a dark yellowish brown and yellowish brown, medium textured subsoil.

These moderately deep, well drained, strongly sloping to very steep Dekalb soils are on ridgetops and side slopes. They formed in material weathered mainly from sandstone. They have a very dark grayish brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

These very deep, well drained, and very steep Elliber soils are on side slopes. They formed in material weathered from chert with some interbedding of sandstone and shale. They have a very dark grayish brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

Of minor extent in this map unit are the well drained Berks and Hazleton soils on ridgetops and side slopes.

About 95 percent of this unit is woodland. It is used for timber production, recreation, and wildlife habitat. An oak-hickory timber type dominates this map unit. Chestnut oak and hickories dominate ridgetops and the upper side slopes that have south aspects. White oak dominates the middle side slopes with yellow-poplar, red maple, white ash, northern red oak, and eastern white pine mixed in the stand on north aspects and footslopes. Cleared areas are being used for pasture. Several chert quarries and a few small sand pits are in this map unit.

The main limitations affecting most uses of these soils are the slope, the stones on the surface, and the depth to bedrock.

9. Weikert-Berks

Gently sloping to extremely steep, shallow and moderately deep, well drained, loamy soils formed in siltstone, shale, and sandstone; on mountainous uplands

The landscape is characterized by highly dissected topography. The mountains have sharp, strongly sloping ridgetops that separate very steep, smooth side slopes. Spur ridges from the mountain areas descend to form lower hills having narrow ridges and very steep side slopes that generally plunge to broad flood plains. The native vegetation is dominantly hardwoods on the upper slopes and conifers on the lower slopes.

This map unit makes up about 9 percent of the survey area. It is about 67 percent Weikert soils, 27 percent Berks soils, and 6 percent soils of minor extent.

These shallow, well drained, strongly sloping to extremely steep Weikert soils are on ridgetops and side slopes of the hills. They formed in material weathered from shale, siltstone, and fine grained sandstone. They have a dark brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

These moderately deep, well drained, gently sloping to extremely steep Berks soils are on ridgetops and side slopes in the more mountainous areas. They formed in material weathered from interbedded siltstone, shale, and fine grained sandstone. They have a dark brown, medium textured surface layer and a yellowish brown, medium textured subsoil.

Of minor extent in this map unit are the well drained Dekalb and Lily soils on uplands; the well drained Macove and moderately well drained Ernest soils on footslopes, benches, and alluvial fans; and the well drained, smoothed Udorthents in areas that have been disturbed by road construction or community development.

The majority of this map unit is within the Monongahela National Forest. About 85 percent of the map unit is wooded and used for timber production, recreation, and wildlife habitat. The Berks soils produce a more valuable stand of timber than the Weikert soils and are dominated by white oak, white ash, and eastern white pine. The Weikert soils are dominated by chestnut oak, white oak, hickories, pitch pine, and, on the lower slopes, eastern white pine. Cleared areas are used for pasture or, in areas adjacent to the large expanses of bottom land, they are being developed as homesites.

The main limitations affecting most uses of these soils are the slope and the depth to bedrock.

10. Mandy-Snowdog

Strongly sloping to extremely steep, moderately deep and very deep, well drained and moderately well drained, loamy soils formed in sandstone, siltstone, and shale; on mountainous uplands and footslopes

The landscape is characterized by rough, rugged mountainous topography. It is a greatly dissected high plateau with broad, gently sloping ridgetops and knobs and very steep side slopes. Several major streams have their sources in this area. Sandstone outcrops and stones and boulders on the soil surface are common. The native vegetation is dominantly red spruce, red maple, yellow birch, and American beech.

This map unit makes up about 13 percent of the survey area. It is about 47 percent Mandy soils, 19 percent Snowdog soils, and 34 percent soils of minor extent.

These moderately deep, well drained, strongly sloping to extremely steep Mandy soils are on ridgetops and the upper side slopes. They formed in material weathered from interbedded siltstone, shale, and fine grained sandstone. They have a very dark brown, medium textured surface layer and a dark yellowish brown and yellowish brown, medium textured subsoil.

These very deep, moderately well drained, steep or very steep Snowdog soils are on the lower side slopes, footslopes, and benches. They formed in colluvium derived from shale, siltstone, and sandstone. They have a very dark brown, medium textured surface layer and a dark brown and yellowish brown, medium textured subsoil that is very firm and brittle in the lower part.

Of minor extent in this map unit are the well drained Briery, Gauley, and Summers soils; the somewhat poorly drained Leatherbark soils on broad ridgetops; the poorly drained Trussel soils on footslopes and benches; and the well drained, moderately well drained, somewhat poorly drained, and poorly drained Udifluvents and Fluvaquents on flood plains.

About 95 percent of this map unit is wooded and used for timber production, recreation, and wildlife habitat. Many reclaimed surface mines are in areas of the map unit. The cleared areas are used for scenic overlooks and the production of hay.

The main limitations affecting most uses of these soils are the slope, the stones on the surface, the depth to bedrock, and a seasonal high water table.

Detailed Soil Map Units

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

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis

of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Cateache silt loam, 35 to 55 percent slopes, very stony, is a phase of the Cateache series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Frederick-Caneyville complex, karst, 15 to 35 percent slopes, very rocky, is an example.

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

AlB—Allegheny loam, 3 to 8 percent slopes

Setting

Landscape position: Stream terraces, footslopes, and fans

Composition

Allegheny soil: 90 percent
Inclusions: 10 percent

Typical Profile

Surface layer:
0 to 3 inches—forest litter
3 to 5 inches—very dark grayish brown loam

Subsurface layer:
5 to 10 inches—yellowish brown loam

Subsoil:
10 to 28 inches—yellowish brown loam
28 to 43 inches—strong brown clay loam
43 to 49 inches—strong brown gravelly loam

Substratum:
49 to 65 inches—mixed strong brown, yellowish brown, and yellowish red gravelly loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Gently sloping
Stoniness: Nonstony

Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Monongahela soils in similar landscape positions

Nonlimiting inclusions:
- Macove soils on footslopes

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used as cropland or for hay and pasture.

Cropland
Suitability: Suited
Management concerns: Organic matter content, fertility and tilth, and erosion
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content, maintain fertility and tilth, and control erosion in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Suited
Management concerns: Erosion and sedimentation
Management considerations:
- Maintaining the plant cover on construction sites, establishing a plant cover in unprotected areas, and providing for the proper disposal of surface water help to control erosion and sedimentation.

Interpretive Groups

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

AlC—Allegheny loam, 8 to 15 percent slopes

Setting

Landscape position: Stream terraces, footslopes, and fans

Composition

Allegheny soil: 90 percent
Inclusions: 10 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark grayish brown loam

Subsurface layer:
4 to 10 inches—yellowish brown loam

Subsoil:
10 to 28 inches—yellowish brown loam
28 to 43 inches—strong brown clay loam
43 to 49 inches—strong brown gravelly loam

Substratum:
49 to 65 inches—mixed strong brown, yellowish brown, and yellowish red gravelly loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Monongahela soils in similar landscape positions

Nonlimiting inclusions:
- Macove soils on footslopes

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used as cropland or for hay and pasture.

Cropland
Suitability: Suited

Management concerns: Organic matter content, fertility and tilth, and erosion
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content, maintain fertility and tilth, and control erosion in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Suited
Management concerns: Slope, erosion, and sedimentation
Management considerations:
- Maintaining the plant cover on construction sites, establishing a plant cover in unprotected areas, and providing for the proper disposal of surface water help to control erosion and sedimentation.
- Excavating areas used for camping or picnicking or as playgrounds, establishing paths and trails on a gentle grade across the slope, and installing surface water control devices help to control erosion.
- Designing dwellings so that they conform to the setting and to the natural slope of the land, land shaping or installing distribution lines for septic tank absorption fields across the slope, and constructing roads and streets on a gentle grade across the slope help to minimize the effects of the slope.

Interpretive Groups

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

An—Atkins-Philo-Potomac complex

Setting

Landscape position: Narrow flood plains (fig. 5)

Composition

Atkins soil: 35 percent
Philo soil: 30 percent
Potomac soil: 20 percent
Inclusions: 15 percent

Figure 5.—An area of Atkins-Philo-Potomac complex along Fleming Run near Alvon.

Typical Profile

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

Subsoil:
4 to 8 inches—grayish brown silt loam with strong brown and dark yellowish brown redoximorphic concentrations
8 to 29 inches—gray silt loam with strong brown and yellowish red redoximorphic concentrations

Substratum:
29 to 47 inches—bluish gray silty clay loam with yellowish brown redoximorphic concentrations
47 to 65 inches—bluish gray very gravelly silty clay loam with yellowish brown redoximorphic concentrations

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

Subsoil:
8 to 19 inches—yellowish brown silt loam
19 to 38 inches—dark yellowish brown silt loam with light brownish gray redoximorphic depletions and strong brown redoximorphic concentrations

Substratum:
38 to 65 inches—dark yellowish brown to dark grayish brown stratified sandy loam, fine sand, and silt loam with light brownish gray redoximorphic depletions

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

Substratum:
6 to 23 inches—brown extremely gravelly loamy sand with a few pockets of fine sandy loam
23 to 31 inches—dark yellowish brown very gravelly loamy sand with pockets of sand
31 to 60 inches—brown extremely gravelly loamy sand with pockets of sandy loam

Soil Properties and Qualities

Drainage class: Atkins—poorly drained; Philo—moderately well drained; Potomac—somewhat excessively drained
Permeability: Atkins—slow to moderate; Philo—moderate; Potomac—rapid or very rapid
Available water capacity: Atkins and Philo—moderate or high; Potomac—very low or low
Seasonal high water table: Atkins—within a depth of 1.0 foot; Philo—at a depth of 1.5 to 3.0 feet; Potomac—none
Flooding: Atkins and Potomac—frequent; Philo—occasional
Shrink-swell potential: Atkins and Philo—low; Potomac—none
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction (in unlimed areas): Atkins—very strongly acid or strongly acid above a depth of 40 inches ranging to moderately acid below a depth of 40 inches; Philo—very strongly acid to moderately acid; Potomac—strongly acid to neutral in the solum and very strongly acid to slightly alkaline in the substratum
Organic matter content of the surface layer: Moderate
Surface runoff: Atkins—very high; Philo—low; Potomac—very low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Soils with bedrock at a depth of less than 60 inches

Nonlimiting inclusions:
- Well drained Pope and Macove soils
- Moderately well drained Ernest soils

Use and Management

Uses: Most areas of this unit are wooded or reverting back to woodland. Some are used as pasture.

Cropland
Suitability: Atkins and Philo—suited; Potomac—limited
Management concerns: Organic matter content and fertility and tilth
Management considerations:
- Minimizing tillage, applying a crop rotation that includes hay, delaying tillage until the soil is reasonably dry, and returning crop residue to the soil help to increase the organic matter content and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Atkins and Philo—suited; Potomac—somewhat suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management

Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition, soil strength, and stream disturbance
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Haul roads, skid trails, and logging areas may need to be graveled because of the limited soil strength.
- Installing streamside filter strips and revegetating bare areas help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Flooding and wetness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: Atkins—3w; Philo—2w; and Potomac—5s
Woodland ordination symbol: Atkins—4W; Philo—5A; and Potomac—4F

BaE—Belmont silt loam, 15 to 35 percent slopes, very rocky

Setting

Landscape position: Benches and side slopes, west of the Greenbrier River on the Greenbrier geologic deposit
Note: Includes 2 to 10 percent exposed bedrock; sinkholes common in some areas

Composition

Belmont soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—slightly decomposed leaf litter
2 to 5 inches—very dark grayish brown silt loam

Subsoil:
5 to 8 inches—dark yellowish brown silt loam
8 to 14 inches—dark brown channery silt loam
14 to 25 inches—dark brown channery silty clay loam
25 to 37 inches—dark brown channery silty clay

Substratum:
37 to 53 inches—dark brown very channery silty clay

Bedrock:
53 inches—gray limestone interbedded with dark grayish brown siltstone

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate
Available water capacity: High
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Severe or very severe
Slope class: Steep or moderately steep
Stoniness: None
Rockiness: Very rocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, strongly acid to slightly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 40 to 60 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Moderately deep Culleoka and Cateache soils on side slopes
- Areas that include more than 10 percent exposed bedrock
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Very deep Shouns soils on footslopes
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this unit have been cleared and are used as pasture. Some areas are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion

Pasture and Hayland
Suitability: Unsuited to hay; difficult to manage for pasture
Management concerns: Erosion, slope, overgrazing, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and rock outcrop
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock and the moderate shrink-swell potential

Management considerations:
- The included soils that have slopes of less than 15 percent, soils that are deeper to bedrock, and areas where there is a lower extent of rock outcrop have fewer limitations affecting most urban uses.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4X

BcC—Berks channery loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Convex ridgetops and broad benches

Composition

Berks soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Very low or low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Shallow Weikert soils
- Soils with slopes of more than 15 percent
- Soils that have stones covering more than 3 percent of the surface

Nonlimiting inclusions:
- Moderately deep Dekalb soils

Use and Management

Uses: Most areas of this unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Stoniness, erosion, and overgrazing
Management considerations:
- Proper stocking rates and a rotation grazing system, which help to maintain desirable grasses and legumes, are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Erosion
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Stones, erosion, depth to bedrock, and slope
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land minimize the effects of most soil restrictions.
- Revegetating during or soon after construction reduces the hazard of erosion.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- Constructing roads and streets on the contour and removing the stones help to overcome the limitations on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 3F

BcE—Berks channery loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Upper side slopes and benches

Composition

Berks soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Very low or low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe or very severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Shallow Weikert soils
- Soils with slopes of more than 35 percent
- Soils that have stones covering more than 3 percent of the surface

Nonlimiting inclusions:
- Moderately deep Dekalb soils
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Erosion and seedling mortality on south aspects
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings will reduce the seedling mortality rate.

Community Development
Suitability: Limited
Management concerns: Stones, erosion, depth to bedrock, and slope
Management considerations:
- The included soils that are less sloping and deeper to bedrock should be selected as sites for urban development in areas of this map unit.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 3F

BcF—Berks channery loam, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes

Composition

Berks soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Very low or low
Seasonal high water table: None
Hazard of flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Shallow Weikert soils
- Soils with slopes of more than 55 percent
- Soils that have stones covering more than 3 percent of the surface

Nonlimiting inclusions:
- Moderately deep Dekalb soils
- Soils with slopes of less than 35 percent

Use and Management

Uses: Most areas of this unit are wooded. Some small areas are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Erosion, seedling mortality, and slope
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings will reduce the seedling mortality rate.
- Specialized equipment or management techniques that are adapted to these very steep slopes should be used when timber is harvested.

Community Development
Suitability: Limited
Management concerns: Stones, erosion, depth to bedrock, and slope

Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 3R

BkG—Berks, Weikert, and Calvin soils, 55 to 80 percent slopes, very stony

Setting

Landscape position: Side slopes

Composition

Berks soil: 35 percent
Weikert soil: 25 percent
Calvin soil: 20 percent
Inclusions: 20 percent

Typical Profile

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Weikert
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 7 inches—yellowish brown very channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam

Substratum:
12 to 16 inches—brownish yellow extremely channery silt loam

Bedrock:
16 inches—multicolored siltstone and shale

Calvin
Surface layer:
0 to 1 inch—forest litter
1 to 3 inches—dark reddish brown channery silt loam

Subsoil:
3 to 5 inches—reddish brown channery silt loam
5 to 22 inches—reddish brown channery silt loam
22 to 28 inches—reddish brown very channery silt loam

Substratum:
28 to 40 inches—reddish brown extremely channery silt loam

Bedrock:
40 inches—reddish brown, highly weathered siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Berks—moderate or moderately rapid; Weikert and Calvin—moderately rapid
Available water capacity: Berks—very low or low; Weikert—very low; Calvin—low or moderate
Seasonal high water table: None
Hazard of flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Extremely steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction (in unlimed areas): Berks—extremely acid to strongly acid; Weikert and Calvin—very strongly acid or strongly acid
Organic matter content of the surface layer: Low
Surface runoff: Berks—high; Weikert and Calvin—medium
Depth to bedrock: Berks and Calvin—20 to 40 inches; Weikert—10 to 20 inches
Bedrock type: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils with slopes of more than 80 percent
- Soils that have stones covering more than 3 percent of the surface
- Areas of rock outcrop

Nonlimiting inclusions:
- Moderately deep Dekalb soils
- Soils formed in cherty material
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 55 percent
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: All areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Pasture and Hayland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Woodland
Potential productivity: Moderate or moderately high on north aspects and moderate on south aspects
Management concerns: Slope and erosion
Management considerations:
- Log landings can only be located in adjacent, less sloping areas, such as on ridgetops or benches.
- Haul roads should be located in areas of adjacent, less sloping map units wherever possible.
- If haul roads and skid trails must be constructed in areas of this unit, they should be laid out on a gentle grade across the slope.
- Full bench construction is recommended on haul roads.
- The hazard of erosion can be reduced by establishing wide, streamside filter strips; controlling surface runoff on roads, trails, and landings through the use of ditches, dips, or water bars; and seeding bare areas.
- Logging systems that are adapted to extremely steep slopes, such as high lead cable logging, are recommended because they make it possible to harvest timber without using skid trails, thus greatly reducing the hazard of erosion.

Community Development
Suitability: Unsuited
Management concerns: Slope, erosion, depth to bedrock, and stoniness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Berks—3R; Weikert—2R; and Calvin—4R on north aspects and 3R on south aspects

BIC—Berks-Dekalb complex, 3 to 15 percent slopes, very stony

Setting

Landscape position: Benches and ridgetops

Composition

Berks soil: 60 percent
Dekalb soil: 30 percent
Inclusions: 10 percent

Typical Profile

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Berks—moderate or moderately rapid; Dekalb—rapid
Available water capacity: Berks—very low or low; Dekalb—very low to moderate
Seasonal high water table: None
Hazard of flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content of the surface layer: Moderate
Surface runoff: Berks—medium; Dekalb—low
Depth to bedrock: 20 to 40 inches
Bedrock type: Berks—highly weathered, strong brown, light gray, and olive siltstone; Dekalb—fractured, gray, medium grained sandstone

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Soils that have slopes of more than 15 percent

Nonlimiting inclusions:
- Lily soils in similar landscape positions
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this unit are wooded. Some are used as pasture or for building site development.

Cropland
Suitability: Unsuited

Management concerns: Erosion and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Erosion
Management considerations:
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock, stones, and slope
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the slope and the depth to bedrock on sites for dwellings with and without basements.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- Constructing roads and streets on the contour and removing the stones help to overcome the slope and the stoniness on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 3F

BIE—Berks-Dekalb complex, 15 to 35 percent slopes, very stony

Setting

Landscape position: Benches and side slopes

Composition

Berks soil: 55 percent
Dekalb soil: 35 percent
Inclusions: 10 percent

Typical Profile

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam

6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Berks—moderate or moderately rapid; Dekalb—rapid
Available water capacity: Berks—very low or low; Dekalb—very low to moderate
Seasonal high water table: None
Hazard of flooding: None
Shrink-swell potential: Low
Erosion hazard: Very severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Medium
Surface runoff: Berks—high; Dekalb—medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Berks—highly weathered, strong brown, light gray, and olive siltstone; Dekalb—fractured, gray, medium grained sandstone

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Soils that have slopes of more than 35 percent

Nonlimiting inclusions:
- Lily soils in similar landscape positions
- Soils that have slopes of less than 15 percent
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Erosion, slope, and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Erosion and slope
Management considerations:
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Slope, depth to bedrock, and stones
Management considerations:
- The included soils that are less sloping, deeper to bedrock, and not so stony are better suited to urban development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Berks—3F on north and south aspects; Dekalb—3F on north aspects and 2F on south aspects

BIF—Berks-Dekalb complex, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes

Composition

Berks soil: 45 percent
Dekalb soil: 40 percent
Inclusions: 15 percent

Typical Profile

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam

12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Berks—moderate or moderately rapid; Dekalb—rapid
Available water capacity: Berks—very low or low; Dekalb—very low to moderate
Seasonal high water table: None
Hazard of flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content of the surface layer: Medium
Surface runoff: Berks—high; Dekalb—medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Berks—highly weathered, strong brown, light gray, and olive siltstone; Dekalb—fractured, gray, medium grained sandstone

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Soils that have slopes of more than 55 percent

Nonlimiting inclusions:
- Lily soils in similar landscape positions
- Soils that have slopes of less than 35 percent
- Macove soils in colluvial landscape positions
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this unit are wooded. Some small areas are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Erosion, slope, and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Erosion and slope
Management considerations:
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Slope, depth to bedrock, and stones
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Berks—3R on north and south aspects; Dekalb—3R on north aspects and 2R on south aspects

BrE—Berks-Weikert complex, 15 to 35 percent slopes, very stony

Setting

Landscape position: Side slopes, benches, and ridgetops

Composition

Berks soil: 50 percent
Weikert soil: 35 percent
Inclusions: 15 percent

Typical Profile

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam

19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Weikert
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 7 inches—yellowish brown very channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam

Substratum:
12 to 16 inches—brownish yellow extremely channery silt loam

Bedrock:
16 inches—multicolored siltstone and shale

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Berks—moderate or moderately rapid; Weikert—moderately rapid
Available water capacity: Berks—very low or low; Weikert—very low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Moderately steep or steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction (in unlimed areas): Berks—extremely acid to strongly acid; Weikert—very strongly acid or strongly acid
Organic matter content of surface layer: Low
Surface runoff: Berks—high; Weikert—medium
Depth to bedrock: Berks—20 to 40 inches; Weikert—10 to 20 inches
Bedrock type: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils with slopes of more than 35 percent
- Soils that have stones covering more than 3 percent of the surface
- Areas of rock outcrop
- Soils that are less than 10 inches deep over bedrock
- Areas where erosion has removed most of the original surface layer and the subsoil is exposed

Nonlimiting inclusions:
- Moderately deep Dekalb soils
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 15 percent
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Pasture and Hayland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Slope, erosion, seedling mortality, droughtiness, and depth to bedrock
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings will reduce the seedling mortality rate.

Community Development
Suitability: Limited
Management concerns: Slope, erosion, depth to bedrock, and stoniness
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings with and without basements.
- Revegetating during or soon after construction reduces the hazard of erosion.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock, the hazard of seepage, and a poor filtering capacity on sites for sanitary facilities.
- Constructing roads in areas where the soils are deeper to bedrock and have fewer stones on the surface and providing coarser grained subgrade or base material to frost depth help to overcome the depth to bedrock and the large stones and to prevent the damage caused by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Berks—3R; Weikert—2R

BrF—Berks-Weikert complex, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes

Composition

Berks soil: 50 percent
Weikert soil: 35 percent
Inclusions: 15 percent

Typical Profile

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Weikert
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 7 inches—yellowish brown very channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam

Substratum:
12 to 16 inches—brownish yellow extremely channery silt loam

Bedrock:
16 inches—multicolored siltstone and shale

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Berks—moderate or moderately rapid; Weikert—moderately rapid
Available water capacity: Berks—very low or low; Weikert—very low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction (in unlimed areas): Berks—extremely acid to strongly acid; Weikert—very strongly acid or strongly acid
Organic matter content of surface layer: Low
Surface runoff: Berks—high; Weikert—medium
Depth to bedrock: Berks—20 to 40 inches; Weikert—10 to 20 inches
Bedrock type: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils with slopes of more than 55 percent

- Soils that have stones covering more than 3 percent of the surface
- Areas of rock outcrop
- Soils that are less than 10 inches deep over bedrock
- Areas where erosion has removed most of the original surface layer and the subsoil is exposed

Nonlimiting inclusions:
- Moderately deep Dekalb soils
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 35 percent
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: All areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Pasture and Hayland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Woodland
Potential productivity: Moderate
Management concerns: Slope, erosion, seedling mortality, droughtiness, and depth to bedrock
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings will reduce the seedling mortality rate.
- Specialized equipment and management techniques that are adapted to these very steep slopes should be used when timber is harvested.

Community Development
Suitability: Unsuited
Management concerns: Slope, erosion, depth to bedrock, and stoniness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Berks—3R; Weikert—2R

BtC—Blackthorn very channery loam, 3 to 15 percent slopes, extremely stony

Setting

Landscape position: Footslopes and benches, generally near the base of Muddy Creek Mountain

Composition

Blackthorn soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—leaf litter
1 to 6 inches—very dark gray very channery loam

Subsoil:
6 to 12 inches—brown channery sandy loam
12 to 24 inches—yellowish brown very channery loam
24 to 37 inches—yellowish brown and strong brown very channery sandy clay loam
37 to 44 inches—yellowish brown very channery clay loam
44 to 65 inches—strong brown silty clay and silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid above the 2Bt horizon and moderate or moderately slow in the 2Bt horizon
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low above the 2Bt horizon and moderate in the 2Bt horizon
Hazard of erosion: Moderate
Slope class: Gently sloping or strongly sloping
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Low or medium
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: More than 60 inches
Bedrock type: Limestone or limy shale

Inclusions

Limiting inclusions:
- Wetter soils in narrow drainageways
- Soils with slopes of more than 15 percent
- Small areas of soils that have stones and boulders covering more than 15 percent of the surface

Nonlimiting inclusions:
- Small areas of soils that have stones covering less than 3 percent of the surface
- Soils with a nonskeletal control section

Use and Management

Uses: This unit is used as woodland or pasture.

Cropland
Suitability: Unsuited
Management concerns: Excessive stone cover
Management considerations:
- Stones can be removed from the fields, if practical, or other areas that are not so stony should be used as cropland.

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, overgrazing, and excessive stone cover

Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.
- The excessive stoniness limits the use of most types of farm machinery.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- A portion of the overstory should be retained during harvest.
- Application of herbicides helps to control undesirable vegetation.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion and maintain water quality.

Community Development
Suitability: Suited
Management concerns: Excessive stoniness and slope
Management considerations:
- Landscaping with additional fill material and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the slope.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4F

BtE—Blackthorn very channery loam, 15 to 35 percent slopes, extremely stony

Setting

Landscape position: Footslopes and benches, mostly near the base of Muddy Creek Mountain

Composition

Blackthorn soil: 75 percent
Limiting inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—leaf litter
1 to 6 inches—very dark gray very channery loam

Subsoil:
6 to 12 inches—brown channery sandy loam
12 to 24 inches—yellowish brown very channery loam
24 to 37 inches—yellowish brown and strong brown very channery sandy clay loam
37 to 44 inches—yellowish brown very channery clay loam
44 to 65 inches—strong brown silty clay and silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid above the 2Bt horizon and moderate or moderately slow in the 2Bt horizon
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low above the 2Bt horizon and moderate in the 2Bt horizon
Hazard of erosion: Severe
Slope class: Strongly sloping to steep
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Low or medium
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches
Bedrock type: Limestone or limy shale

Inclusions

Limiting inclusions:
- Wetter soils in narrow drainageways
- Soils with slopes of more than 35 percent
- Small areas where stones and boulders cover more than 15 percent of the surface

Nonlimiting inclusions:
- Small areas where stones cover less than 3 percent of the surface
- Soils with a nonskeletal control section
- Soils with slopes of less than 15 percent

Use and Management

Uses: This map unit is used as woodland or pasture.

Cropland
Suitability: Unsuited
Management concerns: Excessive stone cover

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, overgrazing, and excessive stone cover
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.
- The excessive stoniness limits the use of most types of farm machinery.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition and erosion
Management considerations:
- A portion of the overstory should be retained during harvest.
- Application of herbicides helps to control undesirable vegetation.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.

- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion and maintain water quality.

Community Development
Suitability: Suited
Management concerns: Excessive stoniness and slope
Management considerations:
- Landscaping with additional fill material and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the slope.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

BxF—Briery-Rock outcrop complex, very steep

Setting

Landscape position: Highwalls, benches, and outslopes, mostly on mountain side slopes (fig. 6)
Note: The Briery soil and areas of Rock outcrop could not be mapped separately at the scale selected for mapping.

Figure 6.—An area of Briery-Rock outcrop complex, very steep, on Fork Mountain, in the northern part of the county.

Composition

Briery soil: 70 percent
Rock outcrop: 15 percent
Inclusions: 15 percent

Typical Profile

Briery
Surface layer:
0 to 2 inches—very dark grayish brown very channery silt loam

Substratum:
2 to 21 inches—dark brown very channery silt loam with strong brown and gray lithochromic mottles
21 to 65 inches—dark brown extremely channery silty clay loam

Rock outcrop
The Rock outcrop occurs as areas of bedrock exposed as a result of surface mining.

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Low to high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe to moderate
Slope class: Very steep
Stoniness: Very stony
Rockiness: Very rocky
Natural fertility: Moderate
Reaction: In unlimed areas, strongly acid to slightly alkaline
Organic matter content of the surface layer: Low
Surface runoff: Briery—medium; Rock outcrop—very high
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Soils that are less than 60 inches deep over bedrock
- Small, wet areas on the benches
- Areas where stones or boulders cover more than 3 percent of the surface

Nonlimiting inclusions:
- Areas where stones or boulders cover less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this unit are wooded. Some reclaimed bench areas are used for grasses and legumes. The areas of Rock outcrop are generally barren.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, stoniness, and a short growing season

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture

Management concerns: Slope, erosion, overgrazing, stoniness, and the short growing season
Management considerations:
- Deferred grazing, a rotation grazing system, applications of lime and fertilizer as needed, and selection of the desirable species help to establish and maintain good forage production and to control erosion.

Woodland
Potential productivity: Moderately high
Management concerns: Seedling mortality, slope, and erosion
Management considerations:
- Constructing roads on a gentle grade across the slope and revegetating disturbed areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Stones and boulders, very steep outslopes, the potential for differential settling, and the Rock outcrop
Management considerations:
- Onsite investigation and testing are needed to determine the limitations and potentials of this unit for most urban uses.

Interpretive Groups

Land capability classification: Briery—7s; Rock outcrop—8s
Woodland ordination symbol: 4R

CbC—Calvin-Dekalb-Berks complex, 3 to 15 percent slopes, very stony

Setting

Landscape position: Benches, ridgetops, and shoulder slopes

Composition

Calvin soil: 45 percent
Dekalb soil: 25 percent
Berks soil: 20 percent
Inclusions: 10 percent

Typical Profile

Calvin
Surface layer:
0 to 1 inch—forest litter
1 to 3 inches—dark reddish brown channery silt loam

Subsoil:
3 to 5 inches—reddish brown channery silt loam
5 to 22 inches—reddish brown channery silt loam
22 to 28 inches—reddish brown very channery silt loam

Substratum:
28 to 40 inches—reddish brown extremely channery silt loam

Bedrock:
40 inches—reddish brown, highly weathered siltstone

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Calvin—moderately rapid; Dekalb—rapid; Berks—moderate or moderately rapid
Available water capacity: Calvin—low or moderate; Dekalb—very low to moderate; Berks—very low or low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction (in unlimed areas): Calvin—very strongly acid or strongly acid; Dekalb and Berks—extremely acid to strongly acid
Organic matter content of the surface layer: Moderate
Surface runoff: Calvin and Dekalb—low; Berks—medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Calvin and Berks—siltstone; Dekalb—sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Well drained Blackthorn soils
- Well drained Hazleton soils
- Soils that have stones covering less than 1 percent of the surface
- Soils with slopes of less than 3 percent

Use and Management

Uses: Most areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Stoniness, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Calvin and Berks—moderately high; Dekalb—moderate
Management concerns: Plant competition, erosion, and low strength
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Harvesting so that a portion of the overstory is retained and applying herbicides also reduce plant competition.
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.

Community Development
Suitability: Limited
Management concerns: Stones, depth to bedrock, slope, and erosion
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings with or without basements.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- Constructing roads and streets on the contour and removing the stones help to overcome the slope and the stoniness on sites for local roads and streets.
- Revegetating during or soon after construction reduces the hazard of erosion in cleared areas.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 3F

CbE—Calvin-Dekalb-Berks complex, 15 to 35 percent slopes, very stony

Setting

Landscape position: Benches and side slopes

Composition

Calvin soil: 35 percent
Dekalb soil: 30 percent
Berks soil: 20 percent
Inclusions: 15 percent

Typical Profile

Calvin
Surface layer:
0 to 1 inch—forest litter
1 to 3 inches—dark reddish brown channery silt loam

Subsoil:
3 to 5 inches—reddish brown channery silt loam
5 to 22 inches—reddish brown channery silt loam
22 to 28 inches—reddish brown very channery silt loam

Substratum:
28 to 40 inches—reddish brown extremely channery silt loam

Bedrock:
40 inches—reddish brown, highly weathered siltstone

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam

19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Calvin—moderately rapid; Dekalb—rapid; Berks—moderate or moderately rapid
Available water capacity: Calvin—low or moderate; Dekalb—very low to moderate; Berks—very low or low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction (in unlimed areas): Calvin—very strongly acid or strongly acid; Dekalb and Berks—extremely acid to strongly acid
Organic matter content of the surface layer: Moderate
Surface runoff: Calvin and Dekalb—medium; Berks—high
Depth to bedrock: 20 to 40 inches
Bedrock type: Calvin and Berks—siltstone; Dekalb—sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Well drained Blackthorn soils
- Well drained Hazleton soils
- Soils that have stones covering less than 0.1 percent of the surface
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate or moderately high on north aspects and moderate on south aspects

Management concerns: Plant competition, slope, erosion, and low strength
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Harvesting so that a portion of the overstory is retained and applying herbicides also reduce plant competition.
- Excavation of sites for haul roads, major skid roads, and landings helps to overcome the slope.
- Where feasible, landings should be located in areas of the less sloping inclusions.
- The hazard of erosion can be reduced by maintaining streamside filter strips; controlling surface runoff on roads and landings through the use of ditches, dips, or water bars; seeding bare areas; and constructing haul roads and major skid roads on a gentle grade across the slope.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.

Community Development
Suitability: Limited
Management concerns: Stones, depth to bedrock, slope, and erosion
Management considerations:
- The included soils that are deeper to bedrock and have fewer stones on the surface are better suited to urban development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Calvin—4F on north aspects and 3F on south aspects; Dekalb—3F on north aspects and 2F on south aspects; Berks—4F on north and south aspects

CbF—Calvin-Dekalb-Berks complex, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes

Composition

Calvin soil: 35 percent
Dekalb soil: 25 percent
Berks soil: 20 percent
Inclusions: 20 percent

Typical Profile

Calvin
Surface layer:
0 to 1 inch—forest litter
1 to 3 inches—dark reddish brown channery silt loam

Subsoil:
3 to 5 inches—reddish brown channery silt loam
5 to 22 inches—reddish brown channery silt loam
22 to 28 inches—reddish brown very channery silt loam

Substratum:
28 to 40 inches—reddish brown extremely channery silt loam

Bedrock:
40 inches—reddish brown, highly weathered siltstone

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Calvin—moderately rapid; Dekalb—rapid; Berks—moderate or moderately rapid
Available water capacity: Calvin—low or moderate; Dekalb—very low to moderate; Berks—very low or low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction (in unlimed areas): Calvin—very strongly acid or strongly acid; Dekalb and Berks—extremely acid to strongly acid
Organic matter content of the surface layer: Moderate
Surface runoff: Calvin and Dekalb—medium; Berks—high
Depth to bedrock: 20 to 40 inches
Bedrock type: Calvin and Berks—siltstone; Dekalb—sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Well drained Blackthorn soils
- Well drained Hazleton soils
- Soils that have stones covering less than 0.1 percent of the surface
- Soils with slopes of less than 35 percent

Use and Management

Uses: Most areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate or moderately high on north aspects and moderate on south aspects
Management concerns: Plant competition, slope, erosion, and low strength
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Harvesting so that a portion of the overstory is retained and applying herbicides also reduce plant competition.
- Excavation of sites for haul roads, major skid roads, and landings helps to overcome the slope.
- Where feasible, landings should be located in areas of the less sloping inclusions.
- The hazard of erosion can be reduced by maintaining streamside filter strips; controlling surface runoff on roads, trails, and landings through the use of ditches, dips, or water bars; seeding bare areas; and constructing haul roads and major skid roads on a gentle grade across the slope.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.

Community Development
Suitability: Limited
Management concerns: Stones, depth to bedrock, slope, and erosion
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Calvin—4R on north aspects and 3R on south aspects; Dekalb—3R on north aspects and 2R on south aspects; Berks—3R on north and south aspects

CeF—Caneyville-Frederick-Rock outcrop complex, karst, 35 to 60 percent slopes

Setting

Landscape position: Upland side slopes, in the central part of the survey area

Composition

Caneyville soil: 40 percent
Frederick soil: 30 percent
Rock outcrop: 20 percent
Inclusions: 10 percent

Typical Profile

Caneyville
Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 6 inches—strong brown silt loam
6 to 10 inches—strong brown silty clay loam
10 to 24 inches—yellowish red clay

Bedrock:
24 inches—hard limestone with a very thin, highly weathered, white, powdery coating

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

Subsoil:
4 to 8 inches—brown silt loam
8 to 23 inches—strong brown silty clay loam
23 to 29 inches—yellowish red silty clay loam
29 to 44 inches—yellowish red clay
44 to 63 inches—red clay

Substratum:
63 to 80 inches or more—mixed red and light olive brown clay

Rock outcrop
The Rock outcrop occurs as areas of exposed bedrock.

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow or moderate
Available water capacity: Frederick—moderate or high; Caneyville—low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: High
Slope class: Steep or very steep
Stoniness: Nonstony
Rockiness: Very rocky
Natural fertility: High

Reaction: In unlimed areas, strongly acid to slightly alkaline
Organic matter content of the surface layer: Moderate
Surface runoff: Caneyville and Frederick—high; Rock outcrop—very high
Depth to bedrock: Frederick—more than 60 inches; Caneyville—20 to 40 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 60 percent

Nonlimiting inclusions:
- Moderately deep Culleoka soils
- Deep and very deep Frankstown soils
- Very deep colluvial soils at the base of slopes

Use and Management

Uses: Most areas are wooded. A few small areas have been cleared and are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Rock outcrop, erosion, and slope

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture (fig. 7)
Management concerns: Erosion, slope, overgrazing, and water supply for livestock

Figure 7.—An area of Caneyville-Frederick-Rock outcrop complex, karst, 35 to 60 percent slopes, used as unimproved pasture.

Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Where possible, springs can be developed as a source of water for livestock or pastures should be designed to include areas where water can be made available.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and the Rock outcrop
Management considerations:
- Specialized equipment and management techniques that are adapted to steep slopes should be used when timber is harvested.
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Slope, the Rock outcrop, the moderate shrink-swell potential, slow water movement, and, in areas of the Caneyville soil, depth to bedrock
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: Caneyville and Frederick—7s; Rock outcrop—8s
Woodland ordination symbol: 4R for north and south aspects

CfB—Cateache silt loam, 3 to 8 percent slopes

Setting

Landscape position: Ridgetops and benches, mainly in the eastern part of the survey area

Composition

Cateache soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate

Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Moderate
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 8 percent
- Eroded soils

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock

Use and Management

Uses: Most areas of this unit have been cleared and are used for hay and pasture. Some are wooded.

Cropland
Suitability: Suited
Management concerns: Erosion and fertility and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop sequence that includes hay, and returning crop residue to the soil help to control erosion and maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- During wet periods unsurfaced roads may become soft and the use of wheeled and tracked equipment may cause excessive rutting.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.

- Seeding roads, skid trails, and log landings after they are no longer being used and keeping the total mileage of roads and skid trails to a minimum help to control erosion.

Community Development
Suitability: Limited
Management concerns: Dwellings with basements—depth to bedrock and the moderate shrink-swell potential; dwellings without basements—the moderate shrink-swell potential; septic tank absorption fields—depth to bedrock; local roads and streets—the moderate shrink-swell potential and frost action
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the depth to bedrock.
- Adding extra reinforcement in footers and backfilling with coarse textured material help to prevent the structural damage caused by shrinking and swelling on sites for dwellings.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limitations on sites for septic tank absorption fields.
- Providing a coarser grained subgrade or base material to frost depth helps to prevent the damage caused by shrinking and swelling and by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 4A

CfC—Cateache silt loam, 8 to 15 percent slopes

Setting

Landscape position: Ridgetops and benches, mainly in the eastern part of the survey area

Composition

Cateache soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate

Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Severe
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 15 percent
- Eroded soils

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 8 percent

Use and Management

Uses: Most areas of this unit have been cleared and are used for hay and pasture. Some areas are wooded.

Cropland
Suitability: Suited
Management concerns: Erosion and fertility and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.

- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Dwellings with basements—depth to bedrock, the moderate shrink-swell potential, and slope; dwellings without basements—the moderate shrink-swell potential and slope; septic tank absorption fields—depth to bedrock; local roads and streets—slope, the moderate shrink-swell potential, and frost action
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the slope and depth to bedrock.
- Adding extra reinforcement in footers and backfilling with coarse textured material help to prevent the structural damage caused by shrinking and swelling on sites for dwellings.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limitations on sites for septic tank absorption fields.
- Constructing roads and streets on a gentle grade across the slope helps to overcome the slope on sites for local roads and streets.
- Providing a coarser grained subgrade or base material to the frost depth helps to prevent the damage caused by shrinking and swelling and by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 4A

CfD—Cateache silt loam, 15 to 25 percent slopes

Setting

Landscape position: Ridgetops, benches, and side slopes, mainly in the eastern part of the survey area

Composition

Cateache soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Severe
Slope class: Moderately steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 25 percent
- Eroded soils

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this unit have been cleared and are used as pasture. Some areas are wooded.

Cropland
Suitability: Limited
Management concerns: Erosion and slope
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the

total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and slippage
Management considerations:
- Included soils that have slopes of less than 15 percent or that are more than 40 inches deep over bedrock have fewer limitations affecting most urban uses.

Interpretive Groups

Land capability classification: 4e
Woodland ordination symbol: 4R for north and south aspects

CfE—Cateache silt loam, 25 to 35 percent slopes

Setting

Landscape position: Side slopes, mainly in the eastern part of the survey area

Composition

Cateache soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Very severe
Slope class: Steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High

Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 25 percent

Use and Management

Uses: Most areas of this unit are wooded. Some areas have been cleared and are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Erosion and slope

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings; plant competition; and slope
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The slope is the major limitation affecting most logging operations.
- When timber is harvested, the steepness of slope restricts the use of wheeled and tracked equipment in skidding operations.
- Cable yarding systems generally are safer and disturb the soil less than wheeled and tracked equipment.
- Logging roads require suitable surfacing for year-round use.
- Extra stone may need to be added during road construction in order to maintain a stable, uniform road surface.
- Unsurfaced roads are soft when wet and can be impassable during rainy periods.
- The use of wheeled and tracked equipment when the soil is wet causes excessive rutting.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Cut and fill slopes along roads are somewhat erodible.

Community Development
Suitability: Limited

Management concerns: Slope, depth to bedrock, and slippage
Management considerations:
- Included soils that have slopes of less than 25 percent or that are more than 40 inches deep over bedrock have fewer limitations affecting most urban uses.

Interpretive Groups

Land capability classification: 6e
Woodland ordination symbol: 4R

CfF—Cateache silt loam, 35 to 55 percent slopes

Setting

Landscape position: Side slopes, mainly in the eastern part of the survey area

Composition

Cateache soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 35 percent

Use and Management

Uses: Most areas of this unit are wooded. Some have been cleared and are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Erosion and slope

Pasture and Hayland
Suitability: Limited
Management concerns: Erosion, slope, and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.
- The slope restricts the use of most types of farm machinery.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The slope is the major limitation affecting most logging operations.
- When timber is harvested, the steepness of slope restricts the use of wheeled and tracked equipment in skidding operations.
- Cable yarding systems generally are safer and disturb the soil less than wheeled and tracked equipment.
- Logging roads require suitable surfacing for year-round use.
- Extra stone may need to be added during road construction in order to maintain a stable, uniform road surface.
- Unsurfaced roads are soft when wet and can be impassable during rainy periods.
- The use of wheeled and tracked equipment when the soil is wet causes excessive rutting.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Cut and fill slopes along roads are somewhat erodible.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and slippage
Management considerations:
- Included soils that have slopes of less than 35 percent or that are more than 40 inches deep over bedrock have fewer limitations affecting most urban uses.

Interpretive Groups

Land capability classification: 7e

Woodland ordination symbol: 4R

CgC—Cateache silt loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Ridgetops and benches, mainly in the western half of the survey area

Composition

Cateache soil: 85 percent
Limiting inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils that have stones covering less of the surface

Use and Management

Uses: Most areas of this unit have been cleared and are used as pasture. Other areas are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion and stoniness
Management considerations:
- Stoniness restricts the use of most types of farm machinery.

Pasture and Hayland
Suitability: Unsuited to hay; suited for pasture
Management concerns: Stoniness in areas of hayland and erosion and overgrazing in pastured areas
Management considerations:
- Proper stocking rates and a rotation grazing system help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns:
- Dwellings with basements—depth to bedrock, the moderate shrink-swell potential, and slope; dwellings without basements—the moderate shrink-swell potential and slope; septic tank absorption fields—depth to bedrock; local roads and streets—slope, the moderate shrink-swell potential, and frost action

Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the slope and depth to bedrock.
- Adding extra reinforcement in footers and backfilling with coarse textured material help to prevent the structural damage caused by shrinking and swelling.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the slope on sites for septic tank absorption fields.
- Constructing roads and streets on a gentle grade across the slope helps to overcome the limitations on sites for local roads and streets.
- Providing a coarser grained subgrade or base material to frost depth helps to prevent the damage caused by shrinking and swelling and by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4A

CgE—Cateache silt loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Ridgetops, benches, and side slopes, mainly in the western half of the survey area

Composition

Cateache soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Severe or very severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 15 percent
- Soils that are not so stony

Use and Management

Uses: Most areas of this unit are wooded. Some areas have been cleared and are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Erosion, stoniness, and slope
Management considerations:
- The stoniness and slope restrict the use of most types of farm machinery.

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Hayland—stoniness and slope; pasture—erosion and overgrazing
Management considerations:
- Proper stocking rates and a rotation grazing system help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads and skid trails, seedling mortality on south aspects, plant competition, and slope
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings reduces the seedling mortality rate.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The slope is the major limitation affecting most logging operations.
- When timber is harvested, the steepness of slope restricts the use of wheeled and tracked equipment in skidding operations.
- Cable yarding systems generally are safer and disturb the soil less than wheeled and tracked equipment.
- Logging roads require suitable surfacing for year-round use.
- Extra stone may need to be added during road construction in order to maintain a stable, uniform road surface.
- Unsurfaced roads are soft when wet and can be impassable during rainy periods.
- The use of wheeled and tracked equipment when the soil is wet causes excessive rutting.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Cut and fill slopes along roads are somewhat erodible.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and slippage
Management considerations:
- Included soils that have slopes of less than 15 percent or are more than 40 inches deep over bedrock have fewer limitations affecting most urban development.

Interpretive Groups

Land capability classification: 7s

Woodland ordination symbol: 4R

CgF—Cateache silt loam, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes, mainly in the western half of the survey area

Composition

Cateache soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
5 to 11 inches—dark reddish brown silt loam
11 to 19 inches—dark reddish brown channery silty clay loam
19 to 29 inches—dark reddish brown very channery silty clay loam

Substratum:
29 to 36 inches—reddish brown extremely channery silty clay loam

Bedrock:
36 inches—highly weathered, brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: Very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Culleoka soils in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 35 percent
- Soils that are not so stony

Use and Management

Uses: Most areas of this unit are wooded. Some have been cleared and are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Erosion, stoniness, and slope

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Hayland—stoniness and slope; pasture—erosion and overgrazing
Management considerations:
- Proper stocking rates and a rotation grazing system help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads and skid trails, seedling mortality on south aspects, and plant competition
Management considerations:
- Specialized equipment or management techniques that are adapted to steep slopes should be used when timber is harvested.
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings will reduce the seedling mortality rate.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The slope is the major limitation affecting most logging operations.
- When timber is harvested, the steepness of slope restricts the use of wheeled and tracked equipment in skidding operations.
- Cable yarding systems generally are safer and disturb the soil less than wheeled and tracked equipment.
- Logging roads require suitable surfacing for year-round use.
- Extra stone may need to be added during road construction in order to maintain a stable, uniform road surface.
- Unsurfaced roads are soft when wet and can be impassable during rainy periods.
- The use of wheeled and tracked equipment when the soil is wet causes excessive rutting.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Cut and fill slopes along roads are somewhat erodible.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and slippage
Management considerations:
- Included soils that have slopes of less than 35 percent or that are more than 40 inches deep over bedrock have fewer limitations affecting most urban uses.

Interpretive Groups

Land capability classification: 7s

Woodland ordination symbol: 4R

Ch—Chavies fine sandy loam

Setting

Landscape position: Low stream terraces, along the Greenbrier River and its major tributaries

Composition

Chavies soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 10 inches—brown fine sandy loam

Subsoil:
10 to 25 inches—dark yellowish brown loam
25 to 55 inches—brown loam

Substratum:
55 to 65 inches or more—brown loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: Rare
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to neutral in the upper part of the profile and very strongly acid to moderately acid in the lower part
Organic matter content in the surface layer: Moderate
Surface runoff: Very low
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Well drained Tioga soils on flood plains below the Chavies soil
- Excessively drained Potomac soils
- Poorly drained Holly soils

Nonlimiting inclusions:
- Well drained Allegheny soils

Use and Management

Uses: This map unit is used as cropland, hayland, or pasture (fig. 8).

Cropland
Suitability: Well suited

Figure 8.—Corn stubble in an area of Chavies fine sandy loam, along the Greenbrier River near Caldwell. This soil is prime farmland.

Management concerns: Slight hazard of erosion
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Well suited
Management concerns: Slight hazard of erosion
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides or mechanically removing undesirable vegetation may be necessary if woodland is reestablished.

Community Development
Suitability: Limited
Management concerns: Flooding and ground-water pollution
Management considerations:
- Areas that are not on the flood plain should be selected as sites for urban development.

Interpretive Groups

Land capability classification: 1
Woodland ordination symbol: 4A

CpB—Cookport loam, 3 to 8 percent slopes

Setting

Landscape position: Upland flats, mainly on Muddy Creek Mountain

Composition

Cookport soil: 80 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
3 to 17 inches—brown and yellowish brown loam
17 to 22 inches—yellowish brown loam with brown and grayish brown redoximorphic depletions and brownish yellow redoximorphic concentrations
22 to 42 inches—brown loam with grayish brown redoximorphic depletions and brownish yellow redoximorphic concentrations in vertical streaks throughout the horizon

Substratum:
42 to 49 inches—mixed yellowish brown, light yellowish brown, strong brown, and light brownish gray loam

Bedrock:
49 inches—hard, gray sandstone

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: Moderate
Depth to the seasonal high water table: 1.5 to 2.5 feet
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Low
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, strongly acid to extremely acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 40 to 60 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils that are less than 40 inches deep over bedrock
- Somewhat poorly drained and poorly drained soils
- Soils with slopes of more than 8 percent

Nonlimiting inclusions:
- Well drained Lily soils
- Well drained Dekalb soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland.

Cropland
Suitability: Suited
Management concerns: Wetness
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion, overgrazing, and compaction
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the soil is reasonably firm help to maintain grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Wetness
Management considerations:
- The use of special, low ground pressure equipment during wet periods helps to prevent compaction.
- Seeding roads, skid trails, and landings after they are no longer being used and keeping the total miles of road to a minimum help to control erosion.

Community Development
Suitability: Suited
Management concerns: Wetness
Management considerations:
- Installing footer drains and properly designed footers, backfilling with porous materials, or selecting a site in an area of the included well drained soils will help to overcome the wetness.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 4W

CuB—Culleoka loam, 3 to 8 percent slopes

Setting

Landscape position: Ridgetops and benches, west of the Greenbrier Valley

Composition

Culleoka soil: 90 percent
Inclusions: 10 percent

Typical Profile

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

Subsoil:
3 to 5 inches—brown channery loam
5 to 9 inches—yellowish brown channery loam
9 to 21 inches—strong brown channery silt loam

21 to 29 inches—strong brown channery silty clay loam

Substratum:
29 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, strongly acid or moderately acid in the solum and strongly acid in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Soils with more than 35 percent rock fragments in the control section
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 8 percent

Nonlimiting inclusions:
- The redder Cateache soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland.

Cropland
Suitability: Suited
Management concerns: Erosion
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to control erosion and to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high

Management concerns: Plant competition
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Seeding roads, skid trails, and log landings after they are no longer being used and keeping the total mileage of roads and skid trails to a minimum will help to control erosion.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock, seepage, and low strength
Management considerations:
- The bedrock is usually soft and can be excavated using standard methods.
- Choosing areas of the deepest soils as building sites, building on the bedrock, and landscaping with additional fill material help to overcome the depth to bedrock.
- Choosing areas of the deepest soils as sites for septic tank absorption fields, installing the absorption field on the contour, and enlarging the absorption field help to overcome the limitations affecting septic tank absorption fields.
- Providing suitable subgrade or base material helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 4A

CuC—Culleoka loam, 8 to 15 percent slopes

Setting

Landscape position: Ridgetops and benches, west of the Greenbrier Valley

Composition

Culleoka soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
3 to 5 inches—brown channery loam
5 to 9 inches—yellowish brown channery loam
9 to 21 inches—strong brown channery silt loam
21 to 29 inches—strong brown channery silty clay loam

Substratum:
29 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid

Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, strongly acid or moderately acid in the solum and strongly acid in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Soils with more than 35 percent rock fragments in the control section
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- The redder Cateache soils
- Soils with slopes of less than 8 percent

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland.

Cropland
Suitability: Suited
Management concerns: Erosion
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to control erosion and to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Slope, erosion, and plant competition
Management considerations:
- Landings must be installed for equipment access.
- The hazard of erosion can be reduced by establishing roads and trails on a gentle grade across the slope; controlling surface runoff with water bars; seeding roads, skid trails, and log landings after they are no longer being used; and keeping the total mileage of roads and trails to a minimum.

Community Development
Suitability: Limited

Management concerns: Depth to bedrock, seepage, slope, and low strength
Management considerations:
- The bedrock is usually soft and can be excavated using standard methods.
- Choosing areas of the deepest soils as building sites, building on the bedrock, and landscaping with additional fill material help to overcome the depth to bedrock.
- Choosing areas of the deepest soils as sites for septic tank absorption fields, installing the absorption field on the contour, and enlarging the absorption field help to overcome the limitations affecting septic tank absorption fields.
- Providing suitable subgrade or base material helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 4A

CuD—Culleoka loam, 15 to 25 percent slopes

Setting

Landscape position: Side slopes, ridgetops, and benches, west of the Greenbrier Valley

Composition

Culleoka soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
3 to 5 inches—brown channery loam
5 to 9 inches—yellowish brown channery loam
9 to 21 inches—strong brown channery silt loam
21 to 29 inches—strong brown channery silty clay loam

Substratum:
29 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Moderately steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, strongly acid or moderately acid in the solum and strongly acid in the substratum

Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Soils with more than 35 percent rock fragments in the control section
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of less than 15 percent or more than 25 percent

Nonlimiting inclusions:
- The redder Cateache soils

Use and Management

Uses: This map unit is used as pasture or woodland.

Cropland
Suitability: Limited
Management concerns: Erosion
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to control erosion and to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high on north and south aspects
Management concerns: Slope, erosion, and plant competition
Management considerations:
- Landings must be installed for equipment access.
- The hazard of erosion can be reduced by establishing roads and trails on a gentle grade across the slope; controlling surface runoff with water bars; seeding roads, skid trails, and log landings after they are no longer being used; and keeping the total mileage of roads and trails to a minimum.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock and slope
Management considerations:
- The included soils that are less sloping and deeper to bedrock are better suited to urban uses.
- The bedrock is usually soft and can be excavated using standard methods.
- Choosing areas of the deepest soils as building sites, building on the bedrock, and landscaping with additional fill material help to overcome the depth to bedrock.
- Choosing areas of the deepest soils as sites for septic tank absorption fields, installing the absorption field on the contour, and enlarging the absorption field help to overcome the limitations affecting septic tank absorption fields.
- Providing suitable subgrade or base material helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 4e
Woodland ordination symbol: 4

CyE—Culleoka loam, 25 to 35 percent slopes, very stony

Setting

Landscape position: Side slopes, west of the Greenbrier Valley

Composition

Culleoka soil: 80 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
3 to 5 inches—brown channery loam
5 to 9 inches—yellowish brown channery loam
9 to 21 inches—strong brown channery silt loam
21 to 29 inches—strong brown channery silty clay loam

Substratum:
29 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, strongly acid or moderately acid in the solum and strongly acid in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Soils with more than 35 percent rock fragments in the control section
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of less than 25 percent or more than 35 percent

Nonlimiting inclusions:
- The redder Cateache soils

Use and Management

Uses: This map unit is used as pasture or woodland.

Cropland
Suitability: Unsuited
Management concerns: Erosion and slope
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion and slope
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to control erosion and to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Slope, erosion, and plant competition
Management considerations:
- Landings must be installed for equipment access.
- The hazard of erosion can be reduced by constructing roads and trails on a gentle grade across the slope; controlling surface runoff with water bars; seeding roads, skid trails, and log landings after they are no longer being used; and keeping the total mileage of roads and skid trails to a minimum.

Community Development
Suitability: Unsuited
Management concerns: Slope, depth to bedrock, and surface stones
Management considerations:
- The included soils that are less sloping and deeper to bedrock are better suited to urban uses.

Interpretive Groups

Land capability classification: 6e
Woodland ordination symbol: 4R

CyF—Culleoka loam, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes, west of the Greenbrier Valley

Composition

Culleoka soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
3 to 5 inches—brown channery loam
5 to 9 inches—yellowish brown channery loam
9 to 21 inches—strong brown channery silt loam
21 to 29 inches—strong brown channery silty clay loam

Substratum:
29 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—olive siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, strongly acid or moderately acid in the solum and strongly acid in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Soils with more than 35 percent rock fragments in the control section
- Soils that are less than 20 inches deep over bedrock
- Soils that have slopes of less than 35 percent or more than 55 percent

Nonlimiting inclusions:
- The redder Cateache soils

Use and Management

Uses: This map unit is used as pasture or woodland.

Cropland
Suitability: Unsuited
Management concerns: Very severe hazard of erosion and slope

Pasture and Hayland
Suitability: Unsuited to hay; poorly suited for pasture
Management concerns: Erosion and slope
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to control erosion and to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high on north and south aspects

Management concerns: Erosion and plant competition
Management considerations:
- Landings must be installed for equipment access.
- The hazard of erosion can be reduced by constructing roads and trails on a gentle grade across the slope; controlling surface runoff with water bars; seeding roads, skid trails, and log landings after they are no longer being used; and keeping the total mileage of roads and skid trails to a minimum.

Community Development
Suitability: Unsuited
Management concerns: Slope, depth to bedrock, and surface stones

Interpretive Groups

Land capability classification: 7e
Woodland ordination symbol: 4R

DeC—Dekalb channery sandy loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Ridgetops and benches, mainly west of the Greenbrier River
Note: Stones cover 0.1 to 3 percent of the surface

Composition

Dekalb soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Rapid
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Gently sloping or strongly sloping
Stoniness: Very stony

Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Low to medium
Surface runoff: Low
Depth to bedrock: 20 to 40 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Well drained Lily soils
- Well drained Berks soils

Use and Management

Uses: This map unit is used as woodland or pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates help to maintain desirable grasses and legumes.
- A rotation grazing system helps to prevent overgrazing.

Woodland
Potential productivity: Moderate
Management concerns: Erosion
Management considerations:
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion.

Community Development
Suitability: Limited
Management concerns: Stoniness, depth to bedrock, slope, and erosion
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the depth to bedrock and slope.
- Revegetating during or soon after construction helps to control erosion.
- Increasing the size of lots so that they include areas of more favorable soils, enlarging the size of the absorption field, or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- The included soils that are deeper to bedrock and have fewer stones on the surface are better suited to urban uses.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 3F

DeE—Dekalb channery sandy loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Benches and side slopes, mainly west of the Greenbrier River
Note: Stones cover 0.1 to 3 percent of the surface

Composition

Dekalb soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Rapid
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Moderately steep or steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Low to medium
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Well drained Lily soils
- Well drained Berks soils
- Soils with slopes of less than 15 percent

Use and Management

Uses: This map unit is used for woodland or pasture.

Cropland
Suitability: Unsuited
Management concerns: Slope, stoniness, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, slope, and overgrazing
Management considerations:
- Proper stocking rates help to maintain desirable grasses and legumes.
- A rotation grazing system helps to prevent overgrazing.

Woodland
Potential productivity: Moderate on north and south aspects
Management concerns: Slope and erosion
Management considerations:
- Excavation of sites for haul roads, major skid roads, and landings helps to overcome the slope.
- Where feasible, landings should be located in areas of the less sloping inclusions.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.
- The hazard of erosion can be reduced by maintaining streamside filter strips; controlling surface runoff through the use of ditches, dips, or water bars; and revegetating disturbed areas after they are no longer being used.
- Establishing haul roads and major skid trails on a gentle grade across the slope helps to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Stoniness, depth to bedrock, slope, and erosion
Management considerations:
- Included soils that are less sloping, deeper to bedrock, and have fewer stones on the surface are better suited to urban uses.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 3F on north aspects and 2F on south aspects

DeF—Dekalb channery sandy loam, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes, mainly west of the Greenbrier River
Note: Stones cover 0.1 to 3 percent of the surface

Composition

Dekalb soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Rapid
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Low to medium
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Well drained Lily soils
- Well drained Berks soils
- The well drained Macove soils in colluvial positions
- Soils with slopes of less than 35 percent

Use and Management

Uses: This map unit is used for woodland or pasture.

Cropland
Suitability: Unsuited
Management concerns: Slope, stoniness, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, slope, and overgrazing
Management considerations:
- Proper stocking rates help to maintain desirable grasses and legumes.
- A rotation grazing system helps prevent overgrazing.

Woodland
Potential productivity: Moderate on north and south aspects
Management concerns: Slope and erosion
Management considerations:
- Excavation of sites for haul roads, major skid roads, and landings helps to overcome the slope.
- Where feasible, landings should be located in areas of the less sloping inclusions.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.
- The hazard of erosion can be reduced by maintaining streamside filter strips; controlling surface runoff on roads, trails, and landings through the use of ditches, dips, or water bars; and revegetating bare areas.
- Establishing haul roads and major skid trails on a gentle grade across the slope helps to control erosion.
- Specialized equipment, such as that used in cable yarding, should be used when timber is harvested.

Community Development
Suitability: Unsuited
Management concerns: Stoniness, depth to bedrock, slope, and erosion
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 3R on north aspects, 2R on south aspects

DhC—Dekalb-Hazleton complex, 3 to 15 percent slopes, very stony

Setting

Landscape position: Benches and ridgetops

Composition

Dekalb soil: 55 percent
Hazleton soil: 35 percent
Inclusions: 10 percent

Typical Profile

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Hazleton
Surface layer:
0 to 2 inches—forest litter
2 to 3 inches—black channery loam

Subsurface layer:
3 to 4 inches—dark brown channery loam

Subsoil:
4 to 7 inches—dark yellowish brown channery loam
7 to 13 inches—yellowish brown channery fine sandy loam
13 to 20 inches—yellowish brown very channery sandy loam
20 to 32 inches—yellowish brown very channery sandy loam

Substratum:
32 to 52 inches—strong brown extremely channery sandy loam

Bedrock:
52 inches—yellowish brown, massive sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Dekalb—rapid; Hazleton—moderately rapid or rapid
Available water capacity: Dekalb—very low to moderate; Hazleton—low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Erosion hazard Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content of the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: Dekalb—20 to 40 inches; Hazleton—40 to 60 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Well drained Berks soils
- Soils with no stones on the surface

Use and Management

Uses: Most areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture

Management concerns: Stoniness, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Dekalb—moderate; Hazleton—moderately high
Management concerns: Erosion
Management considerations:
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion.

Community Development
Suitability: Limited
Management concerns: Stones, erosion, depth to bedrock, and slope
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings with and without basements.
- Revegetating during or soon after construction reduces the hazard of erosion.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock, the hazard of seepage, and a poor filtering capacity on sites for sanitary facilities.
- Constructing roads in areas where the soils are deeper to bedrock and have fewer stones on the surface and providing coarser grained subgrade or base material to frost depth help to overcome the depth to bedrock and the large stones and to prevent the damage caused by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: Dekalb—3F; Hazleton—4F

DhE—Dekalb-Hazleton complex, 15 to 35 percent slopes, very stony

Setting

Landscape position: Side slopes, benches, and ridgetops

Composition

Dekalb soil: 55 percent
Hazleton soil: 35 percent
Inclusions: 10 percent

Typical Profile

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam

15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Hazleton
Surface layer:
0 to 2 inches—forest litter
2 to 3 inches—black channery loam

Subsurface layer:
3 to 4 inches—dark brown channery loam

Subsoil:
4 to 7 inches—dark yellowish brown channery loam
7 to 13 inches—yellowish brown channery fine sandy loam
13 to 20 inches—yellowish brown very channery sandy loam
20 to 32 inches—yellowish brown very channery sandy loam

Substratum:
32 to 52 inches—strong brown extremely channery sandy loam

Bedrock:
52 inches—yellowish brown, massive sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Dekalb—rapid; Hazleton—moderately rapid or rapid
Available water capacity: Dekalb—very low to moderate; Hazleton—low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Moderately steep or steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content of the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: Dekalb—20 to 40 inches; Hazleton—40 to 60 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Well drained Berks soils
- Well drained Elliber soils
- Soils with slopes of less than 15 percent
- Soils with no stones on the surface

Use and Management

Uses: Most areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Dekalb—moderate on north and south aspects; Hazleton—moderate on south aspects and moderately high on north aspects
Management concerns: Erosion, slope, and soil strength
Management considerations:
- The hazard of erosion can be reduced by maintaining streamside filter strips; controlling surface runoff on roads and landings through the use of ditches, dips, or water bars; seeding bare areas; and constructing haul roads and major skid roads on a gentle grade across the slope.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.

Community Development
Suitability: Limited
Management concerns: Stones, erosion, depth to bedrock, and slope
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings with and without basements.
- Revegetating during or soon after construction reduces the hazard of erosion.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock, the hazard of seepage, and a poor filtering capacity on sites for sanitary facilities.
- Constructing roads in areas where the soils are deeper to bedrock and have fewer stones on the surface and providing coarser grained subgrade or base material to frost depth help to overcome the depth to bedrock and the large stones and to prevent the damage caused by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Dekalb—3F on north aspects and 2F on south aspects; Hazleton—4F on north aspects and 3F on south aspects

DhF—Dekalb-Hazleton complex, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes

Composition

Dekalb soil: 55 percent
Hazleton soil: 35 percent
Inclusions: 10 percent

Typical Profile

Dekalb
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Hazleton
Surface layer:
0 to 2 inches—forest litter
2 to 3 inches—black channery loam

Subsurface layer:
3 to 4 inches—dark brown channery loam

Subsoil:
4 to 7 inches—dark yellowish brown channery loam
7 to 13 inches—yellowish brown channery fine sandy loam
13 to 20 inches—yellowish brown very channery sandy loam
20 to 32 inches—yellowish brown very channery sandy loam

Substratum:
32 to 52 inches—strong brown extremely channery sandy loam

Bedrock:
52 inches—yellowish brown, massive sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Dekalb—rapid; Hazleton—moderately rapid or rapid
Available water capacity: Dekalb—very low to moderate; Hazleton—low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content of the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: Dekalb—20 to 40 inches; Hazleton—40 to 60 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Well drained Berks soils
- Well drained Elliber soils
- Soils with slopes of less than 35 percent
- Soils with no stones on the surface

Use and Management

Uses: Most areas of this unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Dekalb—moderate on north and south aspects; Hazleton—moderately high on north aspects and moderate on south aspects
Management concerns: Erosion, slope, and soil strength
Management considerations:
- The hazard of erosion can be reduced by maintaining streamside filter strips; controlling surface runoff on roads, trails, and landings through the use of ditches, dips, or water bars; seeding bare areas; and constructing haul roads and major skid roads on a gentle grade across the slope.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.

Community Development
Suitability: Limited
Management concerns: Stones, erosion, depth to bedrock, and slope
Management considerations:
- The included soils that are less sloping, deeper to bedrock, and have fewer stones on the surface are better suited to urban development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Dekalb—3F on north aspects and 2F on south aspects; Hazleton—4F on north aspects and 3F on south aspects

DkF—Dekalb-Rock outcrop complex, 35 to 80 percent slopes, extremely stony

Setting

Landscape position: Side slopes, adjacent to the Greenbrier River

Composition

Dekalb soil: 45 percent
Rock outcrop: 40 percent
Inclusions: 15 percent

Typical Profile

Dekalb
Surface layer:
0 to 2 inches—very dark brown channery sandy loam

Subsurface layer:
2 to 4 inches—brown channery sandy loam

Subsoil:
4 to 8 inches—yellowish brown very channery loam
8 to 15 inches—brownish yellow very channery loam
15 to 23 inches—yellowish brown very channery sandy loam

Substratum:
23 to 34 inches—strong brown extremely channery sandy loam

Bedrock:
34 inches—fractured, gray, medium grained sandstone

Rock outcrop
The Rock outcrop occurs as areas of exposed bedrock.

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Rapid
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: High or very high
Slope class: Very steep or extremely steep
Stoniness: Extremely stony
Rockiness: Extremely rocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Low to medium
Surface runoff: Dekalb—medium; Rock outcrop—very high
Depth to bedrock: 20 to 40 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 80 percent

Nonlimiting inclusions:
- Well drained Lily soils on ridgetops
- Well drained Macove soils at the base of slopes

Use and Management

Uses: This map unit is used as woodland.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, and rock outcrop

Pasture and Hayland
Suitability: Unsuited
Management concerns: Slope, erosion, and rock outcrop

Woodland
Potential productivity: Low on north and south aspects
Management concerns: Rock outcrop, slope, and erosion
Management considerations:
- Specialized equipment, such as that used in cable yarding, should be used when timber is harvested.

Community Development
Suitability: Unsuited
Management concerns: Slope, rock outcrop, depth to bedrock, and stones

Interpretive Groups

Land capability classification: Dekalb—7s; Rock outcrop—8s
Woodland ordination symbol: Dekalb—3R on north aspects and 2R on south aspects; Rock outcrop—not assigned

Du—Dunning silty clay loam, karst

Setting

Landscape position: Depressions, in the central part of the county

Composition

Dunning soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 10 inches—black silty clay loam with yellowish red mottles

Subsoil:
10 to 20 inches—very dark gray silty clay loam with yellowish red mottles
20 to 28 inches—gray clay with yellowish brown mottles and black coatings
28 to 38 inches—gray clay with yellowish brown mottles

Substratum:
38 to 46 inches—gray clay with strong brown mottles
46 to 65 inches—gray clay with light olive brown mottles

Bedrock:
65 inches—hard limestone

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Slow
Available water capacity: High
Seasonal high water table: Within a depth of 1 foot
Flooding: Occasional
Shrink-swell potential: Moderate
Hazard of erosion: Slight

Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, moderately acid to slightly alkaline
Organic matter content in the surface layer: Moderate
Surface runoff: Negligible
Depth to bedrock: More than 60 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Very poorly drained soils

Nonlimiting inclusions:
- Moderately well drained soils in similar landscape positions
- Somewhat poorly drained soils in similar landscape positions

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used for pasture or hay.

Cropland
Suitability: Suited
Management concerns: Wetness
Management considerations:
- A drainage system is needed in areas used for cultivated crops, hay, or pasture.
- Minimizing tillage, applying a crop rotation that includes hay, delaying tillage until the soil is reasonably dry, and returning crop residue to the soil help to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited to hay and pasture plants that tolerate wetness
Management concerns: Overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing until the soil is firm are major pasture management needs.

Woodland
Potential productivity: High
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management considerations:
- Delaying harvesting activities until the soil is firm reduces the equipment limitation.
- Planting water-tolerant trees will reduce the seedling mortality rate.
- Conducting site preparation following harvest and establishing a new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Wetness
Management considerations:
- A drainage system helps to overcome the wetness.

Interpretive Groups

Land capability classification: 3w
Woodland ordination symbol: 6W

ElF—Elliber extremely channery silt loam, 35 to 55 percent slopes

Setting

Landscape position: Side slopes

Composition

Elliber soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark grayish brown extremely channery silt loam

Subsoil:
4 to 7 inches—yellowish brown extremely channery silt loam
7 to 12 inches—yellowish brown very channery loam
12 to 25 inches—yellowish brown extremely channery loam
25 to 32 inches—yellowish brown very channery loam
32 to 37 inches—yellowish brown very channery silt loam
37 to 50 inches—yellowish brown very channery loam
50 to 67 inches—yellowish brown very channery clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Moderately deep Dekalb soils
- Deep Hazleton soils
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Very deep Mertz soils
- Soils with slopes of less than 35 percent

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Slope and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition, low natural fertility, droughtiness, slope, and erosion
Management considerations:
- Harvesting so that a portion of the overstory is retained and applying herbicides reduce plant competition.
- Haul roads, skid trails, and log landings must be installed for equipment access.
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and establishing a plant cover in disturbed areas help to control erosion.
- Logging roads constructed in areas of this map unit would be of high quality because chert fragments are readily available and could be used as the road base.

Community Development
Suitability: Limited
Management concerns: Slope
Management considerations:
- The included, less sloping Mertz soils are better suited to urban development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

ErB—Ernest silt loam, 3 to 8 percent slopes

Setting

Landscape position: Footslopes, benches, and alluvial fans, in the eastern part of the survey area

Composition

Ernest soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 2 inches—leaf litter
2 to 4 inches—very dark gray silt loam

Subsoil:
4 to 10 inches—brown silt loam
10 to 16 inches—yellowish brown channery silt loam

16 to 23 inches—yellowish brown channery silty clay loam
23 to 28 inches—yellowish brown channery silty clay loam with light brownish gray redoximorphic depletions and strong brown redoximorphic concentrations
28 to 44 inches—light brownish gray and strong brown channery silt loam

Substratum:
44 to 52 inches or more—light brownish gray and strong brown channery silt loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderately slow or slow
Available water capacity: Moderate or high
Depth to the seasonal high water table: 1.5 to 3.0 feet
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Berks soils
- Weikert soils
- Soils with slopes of more than 8 percent

Nonlimiting inclusions:
- Allegheny soils
- Macove soils

Use and Management

Uses: Most areas of this unit are used for cultivated crops or hay. A few small areas are used as pasture or woodland.

Cropland
Suitability: Suited
Management concerns: Erosion and fertility and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high

Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- The hazard of erosion can be reduced by establishing roads and trails on the contour; controlling surface runoff; seeding roads, trails, and landings after they are no longer being used; keeping the total mileage of roads and trails to a minimum; and seeding and mulching bare areas.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Wetness
Management considerations:
- Installing a drainage system around septic tank absorption fields and constructing diversions that intercept water from upslope areas help to overcome the wetness.
- A better suited soil should be selected as a site for dwellings with or without basements; however, if dwellings are built in areas of this unit, the higher areas of the map unit should be selected as the building sites, the landscape should be shaped so that water moves away from the structures, and tile drains should be installed by footings.
- Providing suitable base material or applying other suitable construction techniques helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 4W

EsC—Ernest silt loam, 3 to 15 percent slopes, extremely stony

Setting

Landscape position: Footslopes, benches, and alluvial fans, in the western part of the survey area

Composition

Ernest soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—leaf litter
2 to 4 inches—very dark gray silt loam

Subsoil:
4 to 10 inches—brown silt loam
10 to 16 inches—yellowish brown channery silt loam
16 to 23 inches—yellowish brown channery silty clay loam
23 to 28 inches—yellowish brown channery silty clay loam with light brownish gray redoximorphic depletions and strong brown redoximorphic concentrations
28 to 44 inches—light brownish gray and strong brown channery silt loam

Substratum:
44 to 52 inches or more—light brownish gray and strong brown channery silt loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderately slow or slow
Available water capacity: Moderate or high
Depth to the seasonal high water table: 1.5 to 3.0 feet
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Strongly sloping or gently sloping
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained and somewhat poorly drained soils
- Soils with slopes of more than 15 percent
- Soils with more than 15 percent rock fragments

Nonlimiting inclusions:
- Ernest soils that have a thick, dark surface layer
- Deep and very deep, well drained soils
- Macove soils
- Shouns soils

Use and Management

Uses: Most areas of this unit are used as woodland.

Cropland
Suitability: Unsuited
Management concerns: Erosion, stoniness, and slope
Management considerations:
- Stoniness and slope restrict the use of most types of farm machinery.

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Hayland—stoniness and slope; pasture—erosion and overgrazing
Management considerations:
- Proper stocking rates and a rotation grazing system help to maintain desirable grasses and legumes in pastured areas.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- The hazard of erosion can be reduced by building roads and trails on the contour; controlling surface runoff; seeding roads, trails, and landings after they are no longer being used; keeping the total mileage of roads and trails to a minimum; and seeding and mulching bare areas.

- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Wetness
Management considerations:
- Installing a drainage system around septic tank absorption fields and constructing diversions that intercept water from upslope areas help to overcome the wetness.
- A better suited soil should be selected as a site for dwellings with or without basements; however, if dwellings are built in areas of this unit, the higher areas of the map unit should be selected as the building sites, the landscape should be shaped so that water moves away from the structures, and tile drains should be installed by footings.
- Providing suitable base material or applying other suitable construction techniques helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4X

FaE—Faywood silt loam, 15 to 35 percent slopes, very rocky

Setting

Landscape position: Uplands, in the eastern part of the survey area

Composition

Faywood soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 8 inches—yellowish brown silt loam
8 to 21 inches—strong brown silty clay loam

Substratum:
21 to 28 inches—strong brown clay
28 to 30 inches—light olive brown, highly weathered siltstone

Bedrock:
30 inches—limestone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or moderately slow
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate

Hazard of erosion: Severe or very severe
Slope class: Moderately steep or steep
Stoniness: Nonstony
Rockiness: Very rocky
Natural fertility: High
Reaction: In unlimed areas, slightly acid to slightly alkaline
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Moderately deep Berks soils
- Moderately deep Dekalb soils
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 35 percent
- Areas that include more than 10 percent exposed bedrock

Nonlimiting inclusions:
- Very deep Blackthorn soils
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this unit have been cleared and are used as pasture. Some areas are wooded.

Cropland
Suitability: Unsuited
Management concerns: Rock outcrop, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Rock outcrop, slope, erosion, overgrazing, and the availability of water
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.
- Supplying water to livestock may be difficult in some areas because of sinkholes and underground channels.
- Developing springs or building ponds helps to supply water for livestock.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and rock outcrop
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and shrinking and swelling
Management considerations:
- The less sloping, included soils that are deeper to bedrock and areas with a lower extent of rock outcrop have fewer limitations affecting most urban uses.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4C

FaF—Faywood silt loam, 35 to 55 percent slopes, very rocky

Setting

Landscape position: Upland side slopes, in the eastern part of the survey area

Composition

Faywood soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 8 inches—yellowish brown silt loam
8 to 21 inches—strong brown silty clay loam

Substratum:
21 to 28 inches—strong brown clay
28 to 30 inches—light olive brown, highly weathered siltstone

Bedrock:
30 inches—limestone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or moderately slow
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Nonstony
Rockiness: Very rocky
Natural fertility: High
Reaction: In unlimed areas, slightly acid to slightly alkaline
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Moderately deep Berks soils
- Moderately deep Dekalb soils
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 55 percent

- Areas that include more than 10 percent exposed bedrock

Nonlimiting inclusions:
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 35 percent

Use and Management

Uses: Most areas of this unit are wooded. Some areas have been cleared and are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Rock outcrop, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Rock outcrop, slope, erosion, overgrazing, and a water supply
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.
- Supplying water to livestock may be difficult in some areas because of sinkholes and underground channels.
- Developing springs or building ponds helps to supply water for livestock.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and rock outcrop
Management considerations:
- Specialized equipment or management techniques that are adapted to steep slopes should be used when timber is harvested.
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and shrinking and swelling
Management considerations:
- The less sloping, included soils that are deeper to bedrock and areas with a lower extent of rock outcrop have fewer limitations affecting most urban uses.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

FkB—Frankstown silt loam, karst, 3 to 8 percent slopes

Setting

Landscape position: Uplands, mainly in the central part of the survey area
Note: Sinkholes in most areas

Composition

Frankstown soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
2 to 4 inches—yellowish brown silt loam
4 to 12 inches—brownish yellow silt loam
12 to 31 inches—brownish yellow channery silty clay loam
31 to 35 inches—strong brown very channery silt loam

Substratum:
35 to 45 inches—brownish yellow very channery silt loam with thin layers of reddish yellow silty clay loam

Bedrock:
45 inches—weathered, strong brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low or moderate
Hazard of erosion: Moderate
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 40 to more than 60 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Moderately well drained soils in drainageways and depressions
- Soils with slopes of more than 8 percent
- Moderately deep Caneyville soils
- Areas that include more than 2 percent exposed bedrock

Nonlimiting inclusions:
- Very deep Frederick soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland or, in some areas near Lewisburg, for urban development.

Cropland
Suitability: Suited
Management concerns: Erosion and ground-water pollution
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth in cultivated areas.

- To protect the ground water, nutrients in manure and fertilizer applications should not exceed the plant nutrient requirements.
- Maintaining sod filter strips around open sinkholes reduces the risk of ground-water pollution.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.

Community Development
Suitability: Suited
Management concerns: The moderate shrink-swell potential, depth to bedrock, and ground-water pollution
Management considerations:
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- Installing large septic tank absorption fields on the contour and choosing areas of the deepest included soils as sites help to compensate for the limited depth to bedrock and slow water movement.
- The soft siltstone bedrock can usually be ripped with conventional earthmoving equipment.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and in areas where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 4A

FkC—Frankstown silt loam, karst, 8 to 15 percent slopes

Setting

Landscape position: Uplands, mainly in the central part of the survey area
Note: Sinkholes in most areas

Composition

Frankstown soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
2 to 4 inches—yellowish brown silt loam
4 to 12 inches—brownish yellow silt loam
12 to 31 inches—brownish yellow channery silty clay loam
31 to 35 inches—strong brown very channery silt loam

Substratum:
35 to 45 inches—brownish yellow very channery silt loam with thin layers of reddish yellow silty clay loam

Bedrock:
45 inches—weathered, strong brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low or moderate
Hazard of erosion: Moderate
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 40 to more than 60 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Moderately well drained soils in drainageways and depressions
- Soils with slopes of less than 8 percent or more than 15 percent
- Moderately deep Caneyville soils
- Areas that include more than 2 percent exposed bedrock

Nonlimiting inclusions:
- Very deep Frederick soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland or, in some areas near Lewisburg, for urban development.

Cropland
Suitability: Suited
Management concerns: A severe hazard of erosion and ground-water pollution
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

- To protect the ground water, nutrients in manure and fertilizer applications should not exceed the plant nutrient requirements.
- Maintaining sod filter strips around open sinkholes reduces the risk of ground-water pollution.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.

Community Development
Suitability: Suited
Management concerns: Slope, the moderate shrink-swell potential, the depth to bedrock, and ground-water pollution
Management considerations:
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- Installing large septic tank absorption fields on the contour and choosing areas of the deepest included soils as sites help to compensate for the limited depth to bedrock and slow water movement.
- The soft siltstone bedrock can usually be ripped with conventional earthmoving equipment.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 4A

FkD—Frankstown silt loam, karst, 15 to 25 percent slopes

Setting

Landscape position: Uplands, mainly in the central part of the survey area
Note: Sinkholes in most areas

Composition

Frankstown soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
2 to 4 inches—yellowish brown silt loam
4 to 12 inches—brownish yellow silt loam
12 to 31 inches—brownish yellow channery silty clay loam
31 to 35 inches—strong brown very channery silt loam

Substratum:
35 to 45 inches—brownish yellow very channery silt loam with thin layers of reddish yellow silty clay loam

Bedrock:
45 inches—weathered, strong brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low or moderate
Hazard of erosion: Moderate
Slope class: Moderately steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 40 to more than 60 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Moderately well drained soils in drainageways and depressions
- Soils with slopes of less than 15 percent or more than 25 percent
- Moderately deep Caneyville soils
- Areas that include more than 2 percent exposed bedrock

Nonlimiting inclusions:
- Very deep Frederick soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland or, in some areas near Lewisburg, for urban development.

Cropland
Suitability: Limited
Management concerns: A severe hazard of erosion and ground-water pollution
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

- To protect the ground water, nutrients in manure and fertilizer applications should not exceed the plant nutrient requirements.
- Filter strips around open sinkholes reduce the risk of ground-water pollution.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock that has a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.

Community Development
Suitability: Limited
Management concerns: Slope, the moderate shrink-swell potential, depth to bedrock, and ground-water pollution
Management considerations:
- The less sloping included soils are better suited to community development.
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- Installing large septic tank absorption fields on the contour and choosing areas of the deepest included soils as sites help to compensate for the limited depth to bedrock and slow water movement.
- The soft siltstone bedrock can usually be ripped with conventional earthmoving equipment.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and in areas where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 4e
Woodland ordination symbol: 4R

FoC—Frankstown silt loam, karst, 3 to 15 percent slopes, very rocky

Setting

Landscape position: Uplands, mainly in the central part of the survey area
Note: Includes 2 to 10 percent exposed limestone bedrock; sinkholes in most areas

Composition

Frankstown soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—dark brown silt loam

Subsurface layer:
1 to 2 inches—brown silt loam

Subsoil:
2 to 4 inches—yellowish brown silt loam
4 to 12 inches—brownish yellow silt loam
12 to 31 inches—brownish yellow channery silty clay loam
31 to 35 inches—strong brown very channery silt loam

Substratum:
35 to 45 inches—brownish yellow very channery silt loam with thin layers of reddish yellow silty clay loam

Bedrock:
45 inches—weathered, strong brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low or moderate
Hazard of erosion: Moderate
Slope class: Gently sloping or strongly sloping
Stoniness: Nonstony
Rockiness: Very rocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 40 to more than 60 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Moderately well drained soils in drainageways and depressions
- Soils with slopes of more than 15 percent
- Moderately deep Caneyville soils
- Areas that include more than 10 percent exposed bedrock

Nonlimiting inclusions:
- Very deep Frederick soils
- Areas that include less than 2 percent exposed bedrock

Use and Management

Uses: This unit is used as hayland, pasture, or woodland.

Cropland
Suitability: Unsuited
Management concerns: Rock outcrop

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.

Community Development
Suitability: Limited
Management concerns: Slope, rock outcrop, the moderate shrink-swell potential, depth to bedrock, and ground-water pollution
Management considerations:
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- Installing large septic tank absorption fields on the contour and choosing areas of the deepest included soils as sites help to compensate for the limited depth to bedrock and slow water movement.
- The soft siltstone bedrock can usually be ripped with conventional earthmoving equipment.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and in areas where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4A

FoE—Frankstown silt loam, karst, 15 to 35 percent slopes, very rocky

Setting

Landscape position: Uplands, mainly in the central part of the survey area
Note: Includes 2 to 10 percent exposed limestone bedrock; sinkholes in most areas

Composition

Frankstown soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—dark brown silt loam

Subsoil:
1 to 4 inches—yellowish brown silt loam
4 to 12 inches—brownish yellow silt loam
12 to 31 inches—brownish yellow channery silty clay loam
31 to 35 inches—strong brown very channery silt loam

Substratum:
35 to 45 inches—brownish yellow very channery silt loam with thin layers of reddish yellow silty clay loam

Bedrock:
45 inches—weathered, strong brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low or moderate
Hazard of erosion: Moderate
Slope class: Strongly sloping to steep
Stoniness: Nonstony
Rockiness: Very rocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 40 to more than 60 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Moderately well drained soils in drainageways and depressions
- Soils with slopes of less than 15 percent or more than 35 percent
- Moderately deep Caneyville soils
- Areas that include more than 10 percent exposed bedrock

Nonlimiting inclusions:
- Very deep Frederick soils
- Areas that include less than 2 percent exposed bedrock

Use and Management

Uses: This map unit is used as pasture or woodland.

Cropland
Suitability: Unsuited
Management concerns: Rock outcrop, erosion, and slope

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion, slope, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition and erosion
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Slope, rock outcrop, the moderate shrink-swell potential, slow water movement, depth to bedrock, and ground-water pollution
Management considerations:
- The less sloping, included soils that have a lower extent of rock outcrop may be marginally suited to community development.
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- Installing large septic tank absorption fields on the contour and choosing areas of the deepest included soils as sites help to compensate for the limited depth to bedrock and slow water movement.
- The soft siltstone bedrock can usually be ripped with conventional earthmoving equipment.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and in areas where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

FrB—Frederick silt loam, karst, 3 to 8 percent slopes

Setting

Landscape position: Uplands, mainly in the central part of the survey area
Note: Sinkholes in most areas

Composition

Frederick soil: 80 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
4 to 8 inches—brown silt loam
8 to 23 inches—strong brown silty clay loam
23 to 29 inches—yellowish red silty clay loam
29 to 44 inches—yellowish red channery clay

44 to 63 inches—red channery clay

Substratum:
63 to 80 inches—mixed red and light olive brown channery clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Low or moderate
Slope class: Gently sloping
Stoniness: None
Rockiness: None
Natural fertility: High
Reaction: In unlimed areas, strongly acid to neutral
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 80 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Moderately deep Caneyville soils
- Moderately well drained soils
- Soils with slopes of more than 8 percent
- Areas that include more than 2 percent exposed bedrock

Nonlimiting inclusions:
- Deep and very deep Frankstown soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland, or, in some areas near Lewisburg, for urban development.

Cropland
Suitability: Suited
Management concerns: Erosion and ground-water pollution
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.
- To protect the ground water, nutrients in manure and fertilizer applications should not exceed plant nutrient requirements.
- Maintaining sod filter strips around open sinkholes reduces the risk of ground-water pollution.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion, overgrazing, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.

- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.

Community Development
Suitability: Suited
Management concerns: The moderate shrink-swell potential, slow water movement, erosion, and ground-water pollution
Management considerations:
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- The slow water movement can be overcome by installing a larger septic tank absorption field than is typical; digging wide, deep trenches under distribution lines; and selecting areas of the deepest included soils as sites.
- Minimal disturbance of the soil and revegetation with stockpiled topsoil soon after construction reduce the hazard of erosion.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and in areas where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 5C

FrC—Frederick silt loam, karst, 8 to 15 percent slopes

Setting

Landscape position: Rolling uplands, mainly in the central part of the county (fig. 9)
Note: Sinkholes in most areas

Composition

Frederick soil: 80 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
4 to 8 inches—brown silt loam
8 to 23 inches—strong brown silty clay loam
23 to 29 inches—yellowish red silty clay loam
29 to 44 inches—yellowish red channery clay
44 to 63 inches—red channery clay

Substratum:
63 to 80 inches—mixed red and light olive brown channery clay

Figure 9.—Stripcropping in an area of Frederick silt loam, karst, 8 to 15 percent slopes, at Richlands.

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Low or moderate
Slope class: Strongly sloping
Stoniness: None
Rockiness: None
Natural fertility: High
Reaction: In unlimed areas, strongly acid to neutral
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 80 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Moderately deep Caneyville soils
- Moderately well drained soils
- Soils with slopes of less than 8 percent or more than 15 percent
- Areas that include more than 2 percent exposed bedrock

Nonlimiting inclusions:
- Deep and very deep Frankstown soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland or, in some areas near Lewisburg, for urban development.

Cropland
Suitability: Suited
Management concerns: Erosion and ground-water pollution
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.
- To protect the ground water, nutrients in manure and fertilizer applications should not exceed plant nutrient requirements.
- Maintaining sod filter strips around open sinkholes reduces the risk of ground-water pollution.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion, overgrazing, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.

Community Development
Suitability: Suited
Management concerns: Slope, the moderate shrink-swell potential, slow water movement, erosion, and ground-water pollution
Management considerations:
- Dwellings should be designed so that they conform to the setting and to the natural slope of the land.
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- The slow water movement can be compensated for by planning for a larger septic tank absorption field than is typical; digging wide, deep trenches under distribution lines; installing the absorption field on the contour; and choosing areas of the deepest included soils as sites.
- Minimal disturbance of the soil and revegetation using stockpiled topsoil soon after construction reduce the hazard of erosion.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and in areas where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 5C

FrD—Frederick silt loam, karst, 15 to 25 percent slopes

Setting

Landscape position: Uplands, mainly in the central part of the survey area
Note: Sinkholes in most areas

Composition

Frederick soil: 80 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
4 to 8 inches—brown silt loam
8 to 23 inches—strong brown silty clay loam
23 to 29 inches—yellowish red silty clay loam
29 to 44 inches—yellowish red channery clay
44 to 63 inches—red channery clay

Substratum:
63 to 80 inches—mixed red and light olive brown channery clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Low or moderate
Slope class: Moderately steep
Stoniness: None
Rockiness: None
Natural fertility: High
Reaction: In unlimed areas, strongly acid to neutral
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: More than 80 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Moderately deep Caneyville soils
- Moderately well drained soils
- Soils that have slopes of less than 15 percent or more than 25 percent
- Areas that include more than 2 percent exposed bedrock

Nonlimiting inclusions:
- Deep and very deep Frankstown soils

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland or, in some areas new Lewisburg, for urban development.

Cropland
Suitability: Suited
Management concerns: Erosion and ground-water pollution
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.
- To protect the ground water, nutrients in manure and fertilizer applications should not exceed the plant nutrient requirements.
- Maintaining sod filter strips around open sinkholes reduces the risk of ground-water pollution.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion, overgrazing, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Applying herbicides helps to control competing vegetation.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to ensure the successful establishment of a tree plantation.

Community Development
Suitability: Suited
Management concerns: Slope, the moderate shrink-swell potential, slow water movement, erosion, and ground-water pollution
Management considerations:
- Dwellings should be designed so that they conform to the setting and to the natural slope of the land.
- Installing properly designed footers, diverting surface water away from foundations, and backfilling with porous material help to prevent the damage caused by shrinking and swelling.
- The slow water movement can be compensated for by planning for a larger septic tank absorption field than is typical; digging wide, deep trenches under distribution lines; installing the absorption field on the contour; and choosing areas of the deepest included soils as sites.
- Minimal disturbance of the soil and revegetation using stockpiled topsoil soon after construction reduce the hazard of erosion.
- Septic tank absorption fields should not be installed in areas near limestone outcrops, in sinkholes, and in areas where excavation exposes limestone bedrock.

Interpretive Groups

Land capability classification: 4e
Woodland ordination symbol: 4C

FyC—Frederick-Caneyville complex, karst, 3 to 15 percent slopes, very rocky

Setting

Landscape position: Rolling, undulating uplands; in the central part of the survey area (fig.10)
Note: Includes 2 to 10 percent exposed limestone bedrock; sinkholes common in most areas
Note: The soils are so intermingled that it was not practical to map them separately.

Composition

Frederick soil: 45 percent
Caneyville soil: 35 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
4 to 8 inches—brown silt loam
8 to 23 inches—strong brown silty clay loam
23 to 29 inches—yellowish red silty clay loam

Figure 10.—An area of Frederick-Caneyville complex, karst, 3 to 15 percent slopes, very rocky. Karst topography near Richlands.

29 to 44 inches—yellowish red channery clay
44 to 63 inches—red channery clay

Substratum:
63 to 80 inches—mixed red and light olive brown channery clay

Caneyville
Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 6 inches—strong brown silt loam
6 to 10 inches—strong brown silty clay loam
10 to 24 inches—yellowish red clay

Bedrock:
24 inches—hard limestone with a very thin, highly weathered, white, powdery coating

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow or moderate
Available water capacity: Frederick—moderate or high; Caneyville—low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Moderate
Slope class: Gently sloping or strongly sloping; undulating
Stoniness: Nonstony
Rockiness: Very rocky
Natural fertility: High
Reaction: In unlimed areas, strongly acid to slightly alkaline
Organic matter content of the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: Frederick—more than 60 inches; Caneyville—20 to 40 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Poorly drained Dunning soils in low areas
- Soils that are less than 20 inches deep over bedrock
- Areas that include more than 10 percent exposed bedrock
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Moderately deep Culleoka soils
- Deep and very deep Frankstown soils

Use and Management

Uses: Most areas have been cleared and are used as pasture. Some areas are wooded.

Cropland
Suitability: Unsuited
Management concerns: Rock outcrop

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion, overgrazing, and a water supply for livestock

Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and rock outcrop
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Slope, ground-water pollution, the moderate shrink-swell potential, slow water movement, and, in areas of the Caneyville soil, depth to bedrock
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the depth to bedrock and slope on sites for dwellings with and without basements.
- Adding extra reinforcement in footers and backfilling with coarse textured material help to prevent the structural damage caused by shrinking and swelling.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limitations on sites for septic tank absorption fields.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4C

FyE—Frederick-Caneyville complex, karst, 15 to 35 percent slopes, very rocky

Setting

Landscape position: Uplands, in the central part of the survey area
Note: Exposed limestone bedrock covers 2 to 10 percent of the surface; sinkholes common in most areas
Note: The soils are so intermingled that it was not practical to map them separately.

Composition

Frederick soil: 40 percent
Caneyville soil: 40 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
4 to 8 inches—brown silt loam
8 to 23 inches—strong brown silty clay loam
23 to 29 inches—yellowish red silty clay loam
29 to 44 inches—yellowish red channery clay
44 to 63 inches—red channery clay

Substratum:
63 to 80 inches or more—mixed red and light olive brown channery clay

Caneyville
Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 6 inches—strong brown silt loam
6 to 10 inches—strong brown silty clay loam
10 to 24 inches—yellowish red clay

Bedrock:
24 inches—hard limestone with a very thin, highly weathered, white, powdery coating

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow or moderate
Available water capacity: Frederick—moderate or high; Caneyville—low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: High
Slope class: Steep or moderately steep
Stoniness: Nonstony
Rockiness: Very rocky
Natural fertility: High
Reaction: In unlimed areas, strongly acid to slightly alkaline
Organic matter content of the surface layer: Moderate
Surface runoff: High
Depth to bedrock: Frederick—more than 60 inches; Caneyville—20 to 40 inches
Bedrock type: Limestone

Inclusions

Limiting inclusions:
- Poorly drained Dunning soils in low areas
- Soils that are less than 20 inches deep over bedrock
- Areas that include more than 10 percent exposed bedrock
- Soils with slopes of less than 15 percent or more than 35 percent

Nonlimiting inclusions:
- Moderately deep Culleoka soils
- Deep and very deep Frankstown soils

Use and Management

Uses: Most areas have been cleared and are used as pasture. Some areas are overgrown with greenbrier and multiflora rose, and other areas are wooded.

Cropland
Suitability: Unsuited

Management concerns: Rock outcrop, erosion, and slope

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion, slope, overgrazing, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock. Additional measures may be needed to ensure that the ponds hold water.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and rock outcrop
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Slope, ground-water pollution, the moderate shrink-swell potential, slow water movement, and, in areas of the Caneyville soil, depth to bedrock
Management considerations:
- The included soils that have slopes of less than 15 percent, are deeper to bedrock, or have a lower extent of rock outcrop have fewer limitations affecting most urban development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4C

GaC—Gauley channery sandy loam, 3 to 15 percent slopes, extremely stony

Setting

Landscape position: Convex ridgetops, at the higher elevations west of the Greenbrier River

Composition

Gauley soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 6 inches—slightly or highly decomposed forest litter
6 to 8 inches—black channery sandy loam

Subsurface layer:
8 to 12 inches—brown very channery sandy loam

Subsoil:
12 to 15 inches—dark reddish brown very channery sandy loam

15 to 26 inches—strong brown very channery loam

Substratum:
26 to 38 inches—yellowish brown extremely channery loam

Bedrock:
38 inches—massive, olive gray sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: High
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Somewhat poorly drained Leatherbark soils
- Soils that have stones covering more than 15 percent of the surface

Nonlimiting inclusions:
- Moderately deep Mandy soils
- Soils with slopes of less than 3 percent

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, erosion, and a short growing season

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, erosion, and a short growing season
Management considerations:
- The extreme stoniness restricts the use of most types of farm machinery.
- The short growing season at the higher elevations limits the number of days that animals can graze pasture.

Woodland
Potential productivity: High for red spruce
Management concerns: Seedling mortality and plant competition
Management considerations:
- If the timber harvest is planned so that full advantage of the abundant seed supply is taken, the area will become overstocked and, through competition between the

red spruce in the overstocked areas, the natural thinning process should produce a fully stocked stand.
- Haul roads and skid roads should be built in areas of the included soils that are less stony and less sandy and where bedrock is at a greater depth. Log landings should be built in the less sloping areas.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock, large stones, frost action, erosion, and slope
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so they conform to the setting and to the natural slope of the land help to overcome the depth to bedrock, large stones, and slope on sites for dwellings with and without basements.
- Revegetating bare areas during or soon after construction reduces the hazard of erosion in areas cleared for construction.
- Increasing the size of lots so that they include areas of more favorable included soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- Constructing roads and streets on a gentle grade across the slope, removing the stones, and providing a coarse textured base material to frost depth will help to overcome the depth to bedrock, slope, and large stones and to prevent the damage caused by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 6F

GaE—Gauley channery sandy loam, 15 to 35 percent slopes, extremely stony

Setting

Landscape position: Ridgetops and shoulder slopes, at the higher elevations west of the Greenbrier River

Composition

Gauley soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 6 inches—slightly or highly decomposed forest litter
6 to 8 inches—black channery sandy loam

Subsurface layer:
8 to 12 inches—brown very channery sandy loam

Subsoil:
12 to 15 inches—dark reddish brown very channery sandy loam
15 to 26 inches—strong brown very channery loam

Substratum:
26 to 38 inches—yellowish brown extremely channery loam

Bedrock:
38 inches—massive, olive gray sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe or severe
Slope class: Steep or moderately steep
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: High
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Sandstone

Inclusions

Limiting inclusions:
- Somewhat poorly drained Leatherbark soils
- Soils that have stones covering more than 15 percent of the surface

Nonlimiting inclusions:
- Moderately deep Mandy soils
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, erosion, slope, and a short growing season

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, erosion, slope, and a short growing season
Management considerations:
- The extreme stoniness restricts the use of most types of farm machinery.
- The short growing season at the higher elevations limits the number of days animals can graze pasture.

Woodland
Potential productivity: High for red spruce
Management concerns: Seedling mortality, erosion, and plant competition
Management considerations:
- If the timber harvest is planned so that full advantage of the abundant seed supply is taken, the area will become overstocked and, through competition between the red spruce in the overstocked areas, the natural thinning process should produce a fully stocked stand.
- The hazard of erosion can be reduced by establishing wide, streamside filter strips; controlling surface runoff on roads, trails, and landings through the use of ditches,

dips, or water bars; seeding bare areas; and establishing haul roads and skid trails on a gentle grade across the slope.
- Haul roads and skid trails should be built in areas of the included soils that are less stony and less sandy and where bedrock is at a greater depth. Log landings should be built in the less sloping included areas.

Community Development
Suitability: Unsuited
Management concerns: Depth to bedrock, large stones, frost action, erosion, and slope

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 6R

GnC—Gilpin channery silt loam, 8 to 15 percent slopes

Setting

Landscape position: Ridgetops and benches, in the western part of the survey area

Composition

Gilpin soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
2 to 4 inches—brown channery silt loam
4 to 14 inches—yellowish brown channery silt loam
14 to 23 inches—yellowish brown channery silt loam
23 to 26 inches—yellowish brown very channery silt loam

Substratum:
26 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—highly weathered, grayish brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to slightly acid
Organic matter content in the surface layer: Moderate

Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Grayish brown, fractured siltstone and fine grained sandstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 15 percent
- Dekalb, Lily, and Cookport soils
- Soils that have stones covering more than 0.1 percent of the surface
- Eroded soils

Nonlimiting inclusions:
- Gilpin soils that have a thick, dark surface layer and are in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 8 percent

Use and Management

Uses: Most areas of this map unit have been cleared and are used for hay and pasture. Some areas are wooded.

Cropland
Suitability: Suited
Management concerns: Erosion and fertility and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- The hazard of erosion can be reduced by establishing roads and trails on a gentle grade across the slope; controlling surface runoff; seeding roads, skid trails, and log landings after they are no longer being used; keeping the total mileage of roads and trails to a minimum; and seeding and mulching bare areas.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Dwellings with basements—depth to bedrock, the moderate or high shrink-swell potential, and slope; dwellings without basements—the moderate or high shrink-swell potential and slope; septic tank absorption fields—depth to bedrock; local roads and streets—slope, the moderate or high shrink-swell potential, and frost action

Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the slope and depth to bedrock.
- Adding extra reinforcement in footers and backfilling with coarse textured material help to prevent the structural damage caused by shrinking and swelling on sites for dwellings.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome limitations on sites for septic tank absorption fields.
- Constructing roads and streets on a gentle grade across the slope helps to overcome the slope on sites for local roads and streets.
- Providing a coarser grained subgrade or base material to the frost depth helps to prevent the damage caused by shrinking and swelling or by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 4A

GnD—Gilpin channery silt loam, 15 to 25 percent slopes

Setting

Landscape position: Ridgetops, benches, and side slopes, mainly in the western part of the survey area

Composition

Gilpin soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
2 to 4 inches—brown channery silt loam
4 to 14 inches—yellowish brown channery silt loam
14 to 23 inches—yellowish brown channery silt loam
23 to 26 inches—yellowish brown very channery silt loam

Substratum:
26 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—highly weathered, grayish brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Moderately steep

Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to slightly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches
Bedrock type: Brown, fractured siltstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 25 percent
- Dekalb and Lily soils
- Soils that have stones covering more than 0.1 percent of the surface

Nonlimiting inclusions:
- The Gilpin soils that have a thick, dark surface layer and are in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this map unit have been cleared and are used as pasture. Some areas are wooded.

Cropland
Suitability: Limited
Management concerns: Erosion and slope
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, slope, and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and slippage

Management considerations:
- The included soils that have slopes of less than 15 percent or that are more than 40 inches deep over bedrock have fewer limitations affecting most urban development.

Interpretive Groups

Land capability classification: 4e
Woodland ordination symbol: 4R

GpC—Gilpin channery silt loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Ridgetops and benches, in the western half of the survey area

Composition

Gilpin soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
2 to 4 inches—brown channery silt loam
4 to 14 inches—yellowish brown channery silt loam
14 to 23 inches—yellowish brown channery silt loam
23 to 26 inches—yellowish brown very channery silt loam

Substratum:
26 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—highly weathered, grayish brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to slightly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Grayish brown, fractured siltstone and fine grained sandstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 15 percent

- Dekalb, Lily, and Cookport soils

Nonlimiting inclusions:
- The Gilpin soils that have a thick, dark surface layer and are in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils that have stones covering less of the surface

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion and stoniness
Management considerations:
- The stoniness restricts the use of most types of farm machinery.

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Hayland—stoniness; pasture—erosion and overgrazing
Management considerations:
- Proper stocking rates and a rotation grazing system help to maintain desirable grasses and legumes in pastured areas.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Dwellings with basements—depth to bedrock and slope; dwellings without basements—slope; septic tank absorption fields—depth to bedrock; and local roads and streets—slope and frost action
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the slope and the depth to bedrock.
- Adding extra reinforcement in footers and backfilling with coarse textured material help to prevent the structural damage caused by shrinking and swelling.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limitations on sites for septic tank absorption fields.
- Constructing roads and streets on a gentle grade across the slope helps to overcome the slope on sites for local roads and streets.
- Providing a coarser grained subgrade or base material to the frost depth helps to prevent the damage caused by shrinking and swelling and by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4A

GpE—Gilpin channery silt loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Ridgetops, benches, and side slopes, in the western half of the survey area

Composition

Gilpin soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
2 to 4 inches—brown channery silt loam
4 to 14 inches—yellowish brown channery silt loam
14 to 23 inches—yellowish brown channery silt loam
23 to 26 inches—yellowish brown very channery silt loam

Substratum:
26 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—highly weathered, grayish brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe or very severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to slightly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches
Bedrock type: Grayish brown, fractured siltstone and fine grained sandstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Soils with slopes of more than 35 percent
- Dekalb soils

Nonlimiting inclusions:
- The Gilpin soils that have a thick, dark surface layer and are in similar landscape positions
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 15 percent

- Soils that have stones covering less of the surface

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion, stoniness, and slope
Management considerations:
- The stoniness and slope restrict the use of most types of farm machinery.

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness and slope in areas of hayland and erosion and overgrazing in pastured areas
Management considerations:
- Proper stocking rates and a rotation grazing system help to maintain desirable grasses and legumes in pastured areas.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads and skid trails, seedling mortality on south aspects, plant competition, and slope
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings will reduce the seedling mortality rate.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The slope is the major limitation affecting most logging operations.
- When timber is harvested, the steepness of slope restricts the use of wheeled and tracked equipment in skidding operations.
- Cable yarding systems generally are safer and disturb the soil less than wheeled and tracked equipment.
- Logging roads require suitable surfacing for year-round use.
- Extra stone may need to be added during road construction in order to maintain a stable, uniform road surface.
- Unsurfaced roads are soft when wet and can be impassable during rainy periods.
- The use of wheeled and tracked equipment when the soil is wet causes excessive rutting.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Cut and fill slopes along roads are somewhat erodible.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and slippage
Management considerations:
- Areas of included soils that have slopes of less than 15 percent or that are more than 40 inches deep over bedrock have fewer limitations affecting most urban development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

Ho—Holly silt loam

Setting

Landscape position: Flood plains

Composition

Holly soil: 90 percent
Inclusions: 10 percent

Typical Profile

Surface layer:
0 to 4 inches—very dark gray silt loam with dark brown redoximorphic concentrations

Subsoil:
4 to 9 inches—dark gray silt loam with dark yellowish brown and dark brown redoximorphic concentrations
9 to 11 inches—dark gray sandy loam with dark gray redoximorphic concentrations
11 to 15 inches—dark gray silt loam with dark brown redoximorphic concentrations
15 to 21 inches—grayish brown silt loam with dark yellowish brown, yellowish brown, and brown redoximorphic concentrations
21 to 42 inches—light brownish gray silt loam with dark yellowish brown and brown redoximorphic concentrations

Substratum:
42 to 44 inches—grayish brown sandy loam with brown redoximorphic concentrations
44 to 52 inches—gray silt loam with dark brown and strong brown redoximorphic concentrations
52 to 54 inches—grayish brown sandy loam with brown, yellowish brown, and dark brown redoximorphic concentrations
54 to 65 inches—gray silt loam with yellowish brown redoximorphic concentrations

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Moderately slow or moderate
Available water capacity: High
Seasonal high water table: Within a depth of 1.0 foot
Flooding: Frequent
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: None
Rockiness: None
Natural fertility: Moderate or high
Reaction: In unlimed areas, moderately acid or slightly acid in the surface layer and substratum and strongly acid to slightly acid in the subsoil
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Soils that have a greater amount of rock fragments on the soil surface and are along smaller drains

Nonlimiting inclusions:
- Soils that are better drained

Use and Management

Uses: Suited to cultivated crops but is better suited to hay or pasture plants that tolerate wetness

Cropland
Suitability: Suited
Management concerns: Organic matter content and tilth
Management considerations:
- Minimizing tillage, applying a crop rotation that includes hay, delaying tillage until the soil is reasonably dry, and returning crop residue to the soil help to increase the organic matter content and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Overgrazing
Management considerations:
- Proper stocking rates that help maintain desirable grasses, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Unsuited
Management concerns: Flooding, wetness, slow water movement, and frost action
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 3w
Woodland ordination symbol: 5W

KxF—Kaymine-Rock outcrop complex, very steep

Setting

Landscape position: Highwalls, benches, and outslopes, mostly on mountain side slopes
Note: The Kaymine soil and areas of Rock outcrop could not be mapped separately at the scale selected for mapping.

Composition

Kaymine soil: 70 percent
Rock outcrop: 15 percent

Inclusions: 15 percent

Typical Profile

Kaymine
Surface layer:
0 to 5 inches—very dark grayish brown extremely channery loam

Subsurface layer:
5 to 13 inches—dark grayish brown extremely channery loam with dark gray and yellowish brown mottles

Substratum:
13 to 36 inches—dark grayish brown very channery loam with dark gray and yellowish brown mottles
36 to 65 inches—dark grayish brown extremely channery loam with dark gray mottles

Rock outcrop
The Rock outcrop consists of exposures of bedrock that have resulted from surface mining.

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Low to high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe to moderate
Slope: Very steep
Stoniness: Very stony
Rockiness: Very rocky
Natural fertility: Moderate
Reaction: Medium acid to slightly alkaline
Organic matter content in the surface layer: Low
Surface runoff: Kaymine—medium; Rock outcrop—very high
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Soils with bedrock at a depth of less than 60 inches
- Small wet areas on benches
- Areas that have more than 3 percent of the surface covered with stones or boulders

Nonlimiting inclusions:
- Areas that have less than 0.1 percent of the surface covered with stones or boulders

Use and Management

Uses: Most areas of this map unit are wooded. Some reclaimed bench areas are in grasses and legumes. The areas of Rock outcrop are generally barren.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture

Management concerns: Slope, erosion, overgrazing, and stoniness
Management considerations:
- Deferred grazing, a rotation grazing system, applications of lime and fertilizer as needed, and planting desirable species help to establish and maintain good forage production and to control erosion.

Woodland
Potential productivity: Moderately high
Management concerns: Seedling mortality, slope, and erosion
Management considerations:
- Constructing roads on a gentle grade across the slope and revegetating disturbed areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Stones and boulders, very steep outslopes, the potential for differential settling, and rock outcrop
Management considerations:
- Onsite investigation and testing are needed to determine the limitations and potentials of this unit for most urban uses.

Interpretive Groups

Land capability classification: Kaymine—7s; Rock outcrop—8s
Woodland ordination symbol: 4R

LcC—Leatherbark silt loam, 0 to 15 percent slopes, very stony

Setting

Landscape position: Broad ridgetops and benches, at the higher elevations west of the Greenbrier River

Composition

Leatherbark soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark brown silt loam

Subsurface layer:
4 to 7 inches—grayish brown silt loam

Subsoil:
7 to 11 inches—yellowish brown silty clay loam with gray redoximorphic depletions and yellowish brown redoximorphic concentrations
11 to 20 inches—brownish yellow silty clay loam with brownish yellow redoximorphic concentrations and light brownish gray redoximorphic depletions
20 to 37 inches—light olive brown channery silt loam with grayish brown redoximorphic depletions and dark yellowish brown and yellowish brown redoximorphic concentrations

Substratum:
37 to 40 inches—dark brown very channery silt loam with gray redoximorphic depletions and yellowish brown redoximorphic concentrations

Bedrock:
40 inches—black, gray, and reddish brown, fractured siltstone and shale

Soil Properties and Qualities

Drainage class: Somewhat poorly drained
Permeability: Moderately slow
Available water capacity: Moderate
Depth to seasonal high water table: 0.5 to 1.0 foot
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe to slight
Slope class: Strongly sloping to nearly level
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches
Bedrock: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Poorly drained soils
- Soils that have slopes of more than 15 percent

Nonlimiting inclusions:
- Well drained Gauley soils
- Well drained Mandy soils
- Soils that are deeper and have redoximorphic features lower in the profile
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion, stoniness, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: High
Management concerns: Plant competition and wetness
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Logging should be deferred during wet seasons until the soil is reasonably firm.
- Applying gravel to the surface of the main roads helps to minimize the effects of the wetness.

Community Development
Suitability: Limited
Management concerns: Wetness and depth to bedrock
Management considerations:
- The included Mandy soils have fewer limitations affecting urban development.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 7W

LgB—Lily sandy loam, 3 to 8 percent slopes

Setting

Landscape position: Upland flats, east and west of the Greenbrier Valley

Composition

Lily soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

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

Subsoil:
8 to 11 inches—dark yellowish brown fine sandy loam
11 to 25 inches—yellowish brown loam

Substratum:
25 to 33 inches—strong brown loamy sand

Bedrock:
33 inches—very pale brown, strong brown, and yellow, fine grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Low
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock: Sandstone

Inclusions

Limiting inclusions:
- Soils that are less than 20 inches deep over bedrock
- Moderately well drained Fenwick soils
- Soils that have stones covering 1 to 3 percent of the surface
- Soils with slopes of more than 8 percent

Nonlimiting inclusions:
- Moderately deep Berks and Dekalb soils
- Soils that are more than 40 inches deep over bedrock

Use and Management

Uses: This map unit is used as cropland, hayland, pasture, or woodland or, in some areas northeast of Lewisburg, for urban development.

Cropland
Suitability: Suited
Management concerns: Erosion
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion, overgrazing, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock.

Woodland
Potential productivity: Moderate
Management concerns: Erosion and low strength
Management considerations:
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Seeding roads, skid trails, and log landings after they are no longer being used and keeping the total mileage of roads and skid trails to a minimum help to control erosion.

Community Development
Suitability: Suited
Management concerns: Depth to bedrock and potential failure of septic tank absorption fields
Management considerations:
- Choosing areas of the deepest included soils as building sites, building on the bedrock, and landscaping with additional fill material help to overcome the depth to bedrock.
- Choosing areas of the deepest soils as sites for septic tank absorption fields, installing the absorption field on the contour, and enlarging the absorption field help to overcome the limitations affecting septic tank absorption fields.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 3A

LgC—Lily sandy loam, 8 to 15 percent slopes

Setting

Landscape position: Upland flats, east and west of the Greenbrier Valley

Composition

Lily soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

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

Subsoil:
8 to 11 inches—dark yellowish brown fine sandy loam
11 to 25 inches—yellowish brown loam

Substratum:
25 to 33 inches—strong brown loamy sand

Bedrock:
33 inches—very pale brown, strong brown, and yellow, fine grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe in unprotected areas
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock: Sandstone

Inclusions

Limiting inclusions:
- The moderately deep Berks and Dekalb soils
- Soils with slopes of more than 15 percent
- Soils that are less than 20 inches deep over bedrock

- Moderately well drained Fenwick soils
- Soils that have stones covering 1 to 3 percent of the surface

Nonlimiting inclusions:
- Soils that are more than 40 inches deep over bedrock
- Soils with slopes of less than 8 percent

Use and Management

Uses: Most of this map unit is used as woodland. Some areas are used as cropland, hayland, or pasture. Other areas, northeast of Lewisburg, are used for urban development.

Cropland
Suitability: Suited
Management concerns: Erosion
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion, overgrazing, and a water supply for livestock
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring until the ground is reasonably firm help to maintain desirable grasses and legumes.
- Developing springs or building ponds helps to supply water for livestock.

Woodland
Potential productivity: Moderate
Management concerns: Slope, erosion, and low strength
Management considerations:
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Seeding roads, skid trails, and log landings after they are no longer being used and keeping the total mileage of roads and skid trails to a minimum help to control erosion.

Community Development
Suitability: Suited
Management concerns: Depth to bedrock, slope, and the potential failure of septic tank absorption fields
Management considerations:
- Choosing areas of the deepest included soils as building sites, building on the bedrock, and landscaping with additional fill material help to overcome the depth to bedrock.
- Choosing areas of the deepest included soils as sites for septic tank absorption fields, installing the absorption field on the contour, and enlarging the absorption field help to overcome the limitations affecting septic tank absorption fields.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 3A

LhE—Lily sandy loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Upland ridges and side slopes, west of the Greenbrier Valley

Composition

Lily soil: 80 percent
Inclusions: 20 percent

Typical Profile

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

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

Subsoil:
8 to 11 inches—dark yellowish brown fine sandy loam
11 to 25 inches—yellowish brown loam

Substratum:
25 to 33 inches—strong brown loamy sand

Bedrock:
33 inches—very pale brown, strong brown, and yellow, fine grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe in unprotected areas
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock: Sandstone

Inclusions

Limiting inclusions:
- Dekalb soils
- Berks soils

Nonlimiting inclusions:
- Soils that have stones covering less of the surface

Use and Management

Uses: This map unit is used as pasture or woodland.

Cropland
Suitability: Unsuited

Management concerns: Erosion and stoniness
Management considerations:
- The slope and stoniness restrict the use of most types of farm machinery.

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Slope and erosion
Management considerations:
- Establishing roads and skid trails on a gentle grade across the slope and installing water bars help to control surface runoff.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Seeding roads, skid trails, and log landings after they are no longer being used and keeping the total mileage of roads and skid trails to a minimum help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Slope, depth to bedrock, and stones
Management considerations:
- The included soils that are less sloping, deeper to bedrock, and have fewer stones on the surface are better suited to urban development.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 7R for north aspects and 3R for south aspects

Lo—Lobdell silt loam

Setting

Landscape position: Flood plains

Composition

Lobdell soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
10 to 19 inches—dark yellowish brown loam
19 to 28 inches—dark yellowish brown loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Substratum:
28 to 47 inches—light olive brown sandy loam with grayish brown redoximorphic depletions and strong brown redoximorphic concentrations

47 to 65 inches—yellowish brown very gravelly silt loam with grayish brown and olive brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Depth to the seasonal high water table: 1.5 to 2.0 feet
Flooding: Occasional
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, strongly acid to neutral in the surface layer and subsoil and moderately acid to neutral in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Poorly drained Holly soils
- Somewhat poorly drained soils
- Soils that have a gravelly or cobbly surface
- Somewhat excessively drained Potomac soils

Nonlimiting inclusions:
- Well drained Tioga soils

Use and Management

Uses: Most areas of this map unit are used for cultivated crops or hay. A few areas are used for pasture or woodland.

Cropland
Suitability: Suited
Management concerns: Organic matter content and tilth
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content, maintain fertility and tilth, and control erosion in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition and soil strength

Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Haul roads, skid trails, and logging areas may need to be graveled because of the limited soil strength.

Community Development
Suitability: Unsuited
Management concerns: Flooding and ground-water pollution
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 2w
Woodland ordination symbol: 5A

MaB—Macove channery silt loam, 3 to 8 percent slopes

Setting

Landscape position: Footslopes, benches, and alluvial fans

Composition

Macove soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 5 inches—brown channery loam

Subsoil:
5 to 8 inches—yellowish brown channery silt loam
8 to 15 inches—yellowish brown very channery silt loam
15 to 24 inches—yellowish brown very channery silty clay loam
24 to 38 inches—strong brown very channery silty clay loam
38 to 66 inches—brown extremely channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, very strongly acid or strongly acid

Organic matter content in the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Moderately deep Berks soils
- Shallow Weikert soils
- Moderately well drained soils
- Soils with slopes of more than 8 percent

Nonlimiting inclusions:
- Very deep Allegheny soils

Use and Management

Uses: Most areas of this map unit are used for cultivated crops or hay. A few areas are used for pasture or woodland.

Cropland
Suitability: Suited
Management concerns: Erosion and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Large stones
Management considerations:
- Sites for septic tank absorption fields should be backfilled with material that contains fewer stones.
- Excavating the sites for dwellings with and without basements helps to overcome the stoniness.
- The stones should be removed during the construction of roads and streets.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 4F

MaC—Macove channery silt loam, 8 to 15 percent slopes

Setting

Landscape position: Footslopes, benches, and alluvial fans

Composition

Macove soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 5 inches—brown channery loam

Subsoil:
5 to 8 inches—yellowish brown channery silt loam
8 to 15 inches—yellowish brown very channery silt loam
15 to 24 inches—yellowish brown very channery silty clay loam
24 to 38 inches—strong brown very channery silty clay loam
38 to 66 inches—brown extremely channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Moderately deep Berks soils
- Shallow Weikert soils
- Moderately well drained soils
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Very deep Allegheny soils
- Soils with slopes of less than 8 percent

Use and Management

Uses: Most areas of this map unit are used for hay and pasture. A few areas are used for cultivated crops or woodland.

Cropland
Suitability: Suited
Management concerns: Erosion and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Large stones and slope
Management considerations:
- Land shaping, installing the distribution lines across the slope, or installing the lines in areas of the less sloping included soils helps to overcome the limitations on sites for septic tank absorption fields.
- Sites for septic tank absorption fields should be backfilled with material that contains fewer stones.
- Land shaping, designing dwellings so that they conform to the setting and to the natural shape of the land, and removing the large stones during excavation of soil material help to overcome the limitations on sites for dwellings with or without basements.
- Constructing local roads and streets on the contour, land shaping and grading, adapting the design of the roads to the natural slope of the land, and removing the large stones help to overcome the limitations affecting local roads and streets.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 4F

MaD—Macove channery silt loam, 15 to 25 percent slopes

Setting

Landscape position: Footslopes, benches, and alluvial fans

Composition

Macove soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 5 inches—brown channery loam

Subsoil:
5 to 8 inches—yellowish brown channery silt loam
8 to 15 inches—yellowish brown very channery silt loam
15 to 24 inches—yellowish brown very channery silty clay loam
24 to 38 inches—strong brown very channery silty clay loam
38 to 66 inches—brown extremely channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Moderately steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Moderately deep Berks soils
- Shallow Weikert soils
- Moderately well drained soils
- Soils with slopes of more than 25 percent

Nonlimiting inclusions:
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this map unit are used for hay and pasture. A few areas are used for cultivated crops or woodland.

Cropland
Suitability: Limited
Management concerns: Erosion and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth.

Pasture and Hayland
Suitability: Suited

Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high on north aspects and moderate on south aspects
Management concerns: Erosion, slope, and soil strength
Management considerations:
- The hazard of erosion can be reduced by maintaining streamside filter strips; controlling surface runoff on roads and landings through the use of ditches, dips, or water bars; seeding bare areas; and constructing haul roads and skid roads on a gentle grade across the slope.
- Excavation of sites for haul roads, major skid roads, and landings helps to overcome the slope.
- Where feasible, landings should be located in areas of the less sloping included soils.
- Roads should not be used during wet periods unless they have been strengthened with gravel because rut formation is a hazard.

Community Development
Suitability: Limited
Management concerns: Large stones and slope
Management considerations:
- Land shaping, installing the distribution lines across the slope, or installing the lines in an area of the less sloping included soils helps to overcome the limitations affecting septic tank absorption fields.
- Sites for septic tank absorption fields should be backfilled with material that contains few stones.
- Land shaping, designing dwellings so that they conform to the setting and to the natural shape of the land, and removing the large stones during excavation of soil material help to overcome the limitations on sites for dwellings with or without basements.
- Constructing local roads and streets on the contour, land shaping and grading, adapting the design of the roads to the natural slope of the land, and removing the large stones help to overcome the limitations affecting local roads and streets.

Interpretive Groups

Land capability classification: 4e
Woodland ordination symbol: 4F on north aspects and 3F on south aspects

McC—Macove channery silt loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Footslopes, benches, and alluvial fans

Composition

Macove soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter

1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 5 inches—brown channery loam

Subsoil:
5 to 8 inches—yellowish brown channery silt loam
8 to 15 inches—yellowish brown very channery silt loam
15 to 24 inches—yellowish brown very channery silty clay loam
24 to 38 inches—strong brown very channery silty clay loam
38 to 66 inches—brown extremely channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Moderately deep Berks soils
- Shallow Weikert soils
- Moderately well drained soils
- Soils with slopes of more than 15 percent
- Soils that have stones covering more than 3 percent of the surface

Nonlimiting inclusions:
- Very deep Allegheny soils
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Stoniness, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high

Management concerns: Erosion and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Large stones and slope
Management considerations:
- Land shaping, installing the distribution lines across the slope, or installing the lines in an area of the less sloping, included soils helps to overcome the limitations on sites for septic tank absorption fields.
- Sites for septic tank absorption fields should be backfilled with material that contains fewer stones.
- Land shaping, designing dwellings so that they conform to the setting and to the natural shape of the land, and removing the large stones during excavation of soil material help to overcome the limitations on sites for dwellings with or without basements.
- Constructing local roads and streets on the contour, land shaping and grading, adapting the design of the roads to the natural slope of the land, and removing the large stones help to overcome the limitations affecting local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4F

McE—Macove channery silt loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Footslopes, benches, and alluvial fans

Composition

Macove soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 5 inches—brown channery loam

Subsoil:
5 to 8 inches—yellowish brown channery silt loam
8 to 15 inches—yellowish brown very channery silt loam
15 to 24 inches—yellowish brown very channery silty clay loam
24 to 38 inches—strong brown very channery silty clay loam
38 to 66 inches—brown extremely channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderately rapid
Available water capacity: Moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Moderately deep Berks soils
- Shallow Weikert soils
- Moderately well drained soils
- Soils with slopes of more than 35 percent
- Soils that have stones covering more than 3 percent of the surface

Nonlimiting inclusions:
- Soils with slopes of less than 15 percent
- Soils that have stones covering less than 0.1 percent of the surface

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high on north aspects and moderate on south aspects
Management concerns: Erosion, plant competition on north aspects, seedling mortality on south aspects, slope, and low soil strength
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Planting larger stock or planting containerized seedlings early in the year to take advantage of spring rains will help reduce the seedling mortality rate.
- Locating roads, skid trails, and landings in areas of the less sloping included soils and applying gravel on the surface of haul roads and skid trails help to overcome the slope and to prevent the damage caused by low soil strength.

Community Development
Suitability: Limited
Management concerns: Large stones and slope
Management considerations:
- The less sloping included soils that have fewer stones on the surface are better suited to community development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4F on north aspects and 3F on south aspects

MeF—Macove-Gilpin complex, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes, in the western half of the survey area

Composition

Macove soil: 55 percent
Gilpin soil: 30 percent
Inclusions: 15 percent

Typical Profile

Macove
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 5 inches—brown channery loam

Subsoil:
5 to 8 inches—yellowish brown channery silt loam
8 to 15 inches—yellowish brown very channery silt loam
15 to 24 inches—yellowish brown very channery silty clay loam
24 to 38 inches—strong brown very channery silty clay loam
38 to 66 inches—brown extremely channery silty clay loam

Gilpin
Surface layer:
0 to 2 inches—very dark grayish brown channery silt loam

Subsoil:
2 to 4 inches—brown channery silt loam
4 to 14 inches—yellowish brown channery silt loam
14 to 23 inches—yellowish brown channery silt loam
23 to 26 inches—yellowish brown very channery silt loam

Substratum:
26 to 35 inches—yellowish brown extremely channery silt loam

Bedrock:
35 inches—highly weathered, grayish brown, fractured siltstone

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Macove—moderately rapid; Gilpin—moderate
Available water capacity: Macove—moderate; Gilpin—moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, strongly acid to slightly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Macove—medium; Gilpin—very high
Depth to bedrock: Macove—more than 65 inches; Gilpin—20 to 40 inches
Bedrock type: Siltstone and fine grained sandstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 55 percent
- Moderately deep Dekalb soils

Nonlimiting inclusions:
- Deep and very deep, nonskeletal soils and soils with a thick, dark surface layer
- Soils with slopes of less than 35 percent
- Soils that have fewer stones on the surface

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion, stoniness, and slope
Management considerations:
- The stoniness and slope restrict the use of most types of farm machinery.

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Hay—stoniness and slope; pasture—erosion and overgrazing
Management considerations:
- Proper stocking rates and a rotation grazing system help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads and skid trails, the seedling mortality rate on south aspects, plant competition, and slope
Management considerations:
- Establishing roads and trails on a gentle grade across the slope, controlling surface runoff, seeding roads and trails after they are no longer being used, keeping the total mileage of roads and trails to a minimum, and seeding and mulching bare areas help to control erosion.
- Planting special nursery stock that is larger than is typical or planting containerized seedlings will reduce the seedling mortality rate.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The slope is the major limitation affecting most logging operations.

- When timber is harvested, the steepness of slope restricts the use of wheeled and tracked equipment in skidding operations.
- Cable yarding systems generally are safer and disturb the soil less than wheeled and tracked equipment.
- Logging roads require suitable surfacing for year-round use.
- Extra stone may need to be added during road construction in order to maintain a stable, uniform road surface.
- Unsurfaced roads are soft when wet and can be impassable during rainy periods.
- The use of wheeled and tracked equipment when the soil is wet causes excessive rutting.
- The use of special, low ground pressure equipment when the soil is wet minimizes damage to the soil.
- Cut and fill slopes along roads are somewhat erodible.

Community Development
Suitability: Limited
Management concerns: Slope, depth to bedrock, and slippage
Management considerations:
- Included soils with slopes of less than 15 percent and soils that are more than 40 inches deep over bedrock have fewer limitations affecting most urban development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

MkC—Mandy channery silt loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Ridgetops and broad benches, at the higher elevations

Composition

Mandy soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 4 inches—very dark brown channery silt loam

Subsurface layer:
4 to 6 inches—dark brown channery silt loam

Subsoil:
6 to 10 inches—dark yellowish brown channery silt loam
10 to 29 inches—yellowish brown very channery silt loam

Substratum:
29 to 37 inches—yellowish brown extremely channery silt loam

Bedrock:
37 inches—dark grayish brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate

Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe or moderate
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Poorly drained Trussel soils
- Moderately well drained Snowdog soils
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Moderately deep Gauley soils
- Soils with less than 0.1 percent stones on the surface

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion, stoniness, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, plant competition, and windthrow
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The periodic salvaging of trees affected by windthrow may be necessary.

Community Development
Suitability: Limited
Management concerns: Stones, depth to bedrock, erosion, and slope
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings.
- Revegetating during or soon after construction reduces the hazard of erosion.

- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- Constructing roads and streets on a gentle grade across the slope and removing the stones help to overcome the slope and stoniness on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4F

MkE—Mandy channery silt loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Side slopes and benches, at the higher elevations

Composition

Mandy soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 4 inches—very dark brown channery silt loam

Subsurface layer:
4 to 6 inches—dark brown channery silt loam

Subsoil:
6 to 10 inches—dark yellowish brown channery silt loam
10 to 29 inches—yellowish brown very channery silt loam

Substratum:
29 to 37 inches—yellowish brown extremely channery silt loam

Bedrock:
37 inches—dark grayish brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe or severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches

Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Poorly drained Trussel soils
- Moderately well drained Snowdog soils
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Soils with slopes of less than 15 percent
- Soils with less than 0.1 percent stones on the surface
- Soils with sandier textures

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion, slope, and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, stoniness, slope, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, plant competition, and windthrow
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The periodic salvaging of trees affected by windthrow may be necessary.

Community Development
Suitability: Limited
Management concerns: Stones, depth to bedrock, erosion, and slope
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

MkF—Mandy channery silt loam, 35 to 55 percent slopes, very stony

Setting

Landscape position: Side slopes, at the higher elevations

Composition

Mandy soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 4 inches—very dark brown channery silt loam

Subsurface layer:
4 to 6 inches—dark brown channery silt loam

Subsoil:
6 to 10 inches—dark yellowish brown channery silt loam
10 to 29 inches—yellowish brown very channery silt loam

Substratum:
29 to 37 inches—yellowish brown extremely channery silt loam

Bedrock:
37 inches—dark grayish brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface
- Moderately well drained Snowdog soils
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Soils with slopes of less than 35 percent
- Soils that have stones covering less than 0.1 percent of the surface
- Soils with sandier textures

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion, slope, and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture

Management concerns: Erosion, stoniness, slope, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion, plant competition, windthrow, and timber harvest operations
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- The periodic salvaging of trees affected by windthrow may be necessary.
- Specialized equipment or management techniques that are adapted to the very steep slopes should be used when timber is harvested.

Community Development
Suitability: Unsuited
Management concerns: Stones, depth to bedrock, erosion, and slope
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

MkG—Mandy channery silt loam, 55 to 80 percent slopes, very stony

Setting

Landscape position: Side slopes, at the higher elevations

Composition

Mandy soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 4 inches—very dark brown channery silt loam

Subsurface layer:
4 to 6 inches—dark brown channery silt loam

Subsoil:
6 to 10 inches—dark yellowish brown channery silt loam
10 to 29 inches—yellowish brown very channery silt loam

Substratum:
29 to 37 inches—yellowish brown extremely channery silt loam

Bedrock:
37 inches—dark grayish brown siltstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low to moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Extremely steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: In unlimed areas, extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: 20 to 40 inches
Bedrock type: Siltstone

Inclusions

Limiting inclusions:
- Soils with slopes of more than 80 percent

Nonlimiting inclusions:
- Soils with slopes of less than 55 percent
- Soils with sandier textures

Use and Management

Uses: All areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion, slope, and stoniness

Pasture and Hayland
Suitability: Unsuited
Management concerns: Erosion, stoniness, and slope

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and a severe equipment limitation
Management considerations:
- Conventional skidder or tractor logging operations and road construction are not recommended in areas of this map unit because of the hazard of erosion.
- Alternative logging systems that are adapted to extremely steep slopes, such as high lead cable logging, are acceptable in areas of this map unit.

Community Development
Suitability: Unsuited
Management concerns: Stones, depth to bedrock, erosion, and slope
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

MI—Melvin-Lindside complex

Setting

Landscape position: Flood plains

Composition

Melvin soil: 50 percent
Lindside soil: 35 percent
Inclusions: 15 percent

Typical Profile

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

Subsoil:
10 to 27 inches—dark grayish brown silt loam with strong brown and red redoximorphic concentrations
27 to 34 inches—dark grayish brown silt loam with strong brown and red redoximorphic concentrations and grayish brown redoximorphic depletions
34 to 58 inches—dark grayish brown silt loam with strong brown and red redoximorphic concentrations and bluish gray redoximorphic depletions

Substratum:
58 to 65 inches—bluish gray sandy loam with strong brown and red redoximorphic concentrations

Lindside
Surface layer:
0 to 9 inches—dark brown silt loam

Subsoil:
9 to 13 inches—dark brown silt loam
13 to 20 inches—brown silt loam
20 to 36 inches—brown silt loam with strong brown redoximorphic concentrations and grayish brown redoximorphic depletions
36 to 43 inches—dark yellowish brown silt loam with strong brown redoximorphic concentrations and grayish brown redoximorphic depletions
43 to 60 inches—yellowish brown silt loam with reddish brown redoximorphic concentrations and gray redoximorphic depletions

Substratum:
60 to 65 inches—brown very fine sandy loam with reddish yellow redoximorphic concentrations and gray redoximorphic depletions

Soil Properties and Qualities

Drainage class: Melvin—poorly drained; Lindside—moderately well drained
Permeability: Moderate
Available water capacity: High
Seasonal high water table: Melvin—within a depth of 1.0 foot; Lindside—at a depth of 1.5 to 3.0 feet
Flooding: Melvin—frequent; Lindside—occasional
Shrink-swell potential: Low
Erosion hazard: Slight
Slope class: Nearly level

Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction (in unlimed areas): Melvin—moderately acid to slightly alkaline; Lindside—strongly acid to slightly alkaline in the upper part of the profile and moderately acid to slightly alkaline in the lower part
Organic matter content of the surface layer: Moderate
Surface runoff: Melvin—very high; Lindside—low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained soils that are finer textured
- Very poorly drained soils

Nonlimiting inclusions:
- Somewhat poorly drained soils
- Soils with redder colors
- Moderately well drained Zoar soils

Use and Management

Uses: Most areas of this map unit have been cleared and are used as pasture (fig. 11). Scattered areas of woodland are mainly along drainageways.

Cropland
Suitability: Suited
Management concerns: Organic matter content and fertility and tilth
Management considerations:
- Minimizing tillage, applying a crop rotation that includes hay, delaying tillage until the soil is reasonably dry, and returning crop residue to the soil help to increase the organic matter content and to maintain fertility and tilth in cultivated areas.

Figure 11.—A pastured area of Melvin-Lindside complex near Rupert.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Melvin—high; Lindside—moderately high
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management considerations:
- Delaying harvesting activities until the soil is firm helps to overcome the equipment limitation.
- Planting water-tolerant trees reduces the seedling mortality rate.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Haul roads, skid trails, and logging areas may need to be graveled because of the limited soil strength.
- Installing streamside filter strips and revegetating bare areas following use help to overcome the limitations.

Community Development
Suitability: Unsuited
Management concerns: Flooding and wetness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: Melvin—3w; Lindside—2w
Woodland ordination symbol: Melvin—7W; Lindside—5A

MzC—Mertz channery silt loam, 8 to 15 percent slopes, very stony

Setting

Landscape position: Footslopes and benches

Composition

Mertz soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark grayish brown channery silt loam

Subsurface layer:
4 to 5 inches—dark grayish brown channery silt loam

Subsoil:
5 to 10 inches—dark yellowish brown channery silt loam
10 to 23 inches—yellowish brown channery silty clay loam
23 to 38 inches—yellowish brown very channery clay loam

38 to 56 inches—yellowish brown extremely channery silty clay loam

Substratum:
56 to 67 inches—yellowish brown extremely channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, strongly acid or moderately acid in the solum and very strongly acid or strongly acid in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Shallow Weikert soils
- Soils with a dense substratum
- Moderately well drained soils
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Very deep Elliber soils
- Soils with fewer rock fragments in the profile

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Stoniness, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition, seedling mortality, soil strength, and erosion
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains reduce the seedling mortality rate.

- In natural stands, a harvest method that does not expose the soil surface to the drying effects of the sun will also reduce the seedling mortality rate.
- Roads should not be used during wet periods unless they have been strengthened with gravel, possibly from nearby chert deposits, because rut formation is a hazard.
- Maintaining streamside filter strips, installing water bars, and revegetating disturbed areas after they are no longer being used help to control erosion.

Community Development
Suitability: Limited
Management concerns: Slope, slow permeability, and low strength
Management considerations:
- Land shaping and designing the structure to conform with the natural slope help to overcome the slope.
- Installing a larger filter field than is typical or installing an alternate system helps to compensate for the slow water movement.
- Suitable base material or special construction for adequate support helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4F

MzE—Mertz channery silt loam, 15 to 35 percent slopes, very stony

Setting

Landscape position: Footslopes and benches

Composition

Mertz soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark grayish brown channery silt loam

Subsurface layer:
4 to 5 inches—dark grayish brown channery silt loam

Subsoil:
5 to 10 inches—dark yellowish brown channery silt loam
10 to 23 inches—yellowish brown channery silty clay loam
23 to 38 inches—yellowish brown very channery clay loam
38 to 56 inches—yellowish brown extremely channery silty clay loam

Substratum:
56 to 67 inches—yellowish brown extremely channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Low or moderate
Seasonal high water table: None
Flooding: None

Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or moderately steep
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, strongly acid or moderately acid in the solum and very strongly acid or strongly acid in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Shallow Weikert soils
- Soils that have a dense substratum
- Moderately well drained soils
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Very deep Elliber soils
- Soils with fewer rock fragments in the profile
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness, slope, and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Stoniness, slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition, slope, soil strength, and erosion
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Harvesting so that a portion of the overstory is retained and applying herbicides reduce plant competition.
- Haul roads, skid trails, and log landings must be installed for equipment access because of the slope.
- Roads should not be used during wet periods unless they have been strengthened with gravel, possibly from nearby chert deposits, because rut formation is a hazard.
- The hazard of erosion can be reduced by establishing roads and trails on a gentle grade across the slope; controlling surface runoff; seeding roads, trails, and landings after they are no longer being used; and keeping the total mileage of roads and trails to a minimum.

Community Development
Suitability: Limited

Management concerns: Slope, slow water movement, and low strength
Management considerations:
- Land shaping and designing the structure to conform with the natural slope help to overcome the slope.
- Installing a larger filter field than is typical or installing an alternate system helps to compensate for the slow water movement.
- Suitable base material or special construction for adequate support helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

No—Nolin silt loam

Setting

Landscape position: Flood plains, along Kitchen Creek and Muddy Creek in the Blue Sulphur Springs area (fig. 12)

Composition

Nolin soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Figure 12.—An area of Nolin silt loam, along Kitchen Creek near Blue Sulphur Springs.

Subsoil:
5 to 10 inches—dark brown silt loam
10 to 37 inches—dark reddish brown silt loam

Substratum:
37 to 65 inches—dark reddish brown silt loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Depth to the seasonal high water table: 3.0 to 6.0 feet
Flooding: Occasional
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, slightly acid or neutral
Organic matter content in the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Moderately well drained soils
- Somewhat poorly drained soils

Nonlimiting inclusions:
- Sensabaugh soils in similar landscape positions

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used for hay or pasture.

Cropland
Suitability: Suited
Management concerns: Organic matter content and fertility and tilth
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content, maintain fertility and tilth, and control erosion in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: High
Management concerns: Plant competition

Management considerations:
- Harvesting so that a portion of the overstory is retained and applying herbicides reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Flooding
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 2w
Woodland ordination symbol: 8A

Ph—Philo silt loam

Setting

Landscape position: Flood plains

Composition

Philo soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
8 to 19 inches—yellowish brown silt loam
19 to 38 inches—dark yellowish brown silt loam with light brownish gray redoximorphic depletions and strong brown redoximorphic concentrations

Substratum:
38 to 65 inches—dark yellowish brown to dark grayish brown stratified sandy loam, fine sand, and silt loam with light brownish gray redoximorphic depletions

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to the seasonal high water table: 1.5 to 3.0 feet
Flooding: Occasional
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Low
Depth to bedrock: More than 65 inches

Inclusions

Limiting inclusions:
- Poorly drained soils
- Soils with a higher percentage of rock fragments in the profile
- Soils that have bedrock at a depth of less than 65 inches

Nonlimiting inclusions:
- Well drained Pope and Macove soils

Use and Management

Uses: Most areas of this map unit are used for cultivated crops or hay. A few areas are used as pasture or woodland.

Cropland
Suitability: Suited
Management concerns: Organic matter content and tilth
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content, maintain fertility and tilth, and control erosion in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing in the spring help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Plant competition and soil strength
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Haul roads, skid trails, and logging areas may need to be graveled because of the limited soil strength.

Community Development
Suitability: Unsuited
Management concerns: Flooding and ground-water pollution
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 2w
Woodland ordination symbol: 5A

Po—Pope fine sandy loam

Setting

Landscape position: Flood plain

Composition

Pope soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 10 inches—dark grayish brown fine sandy loam

Subsoil:
10 to 25 inches—dark yellowish brown fine sandy loam
25 to 40 inches—dark yellowish brown sandy loam

Substratum:
40 to 65 inches—stratified silt, sand, gravel, and some channery material

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or moderately low
Seasonal high water table: None
Flooding: Occasional
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, strongly acid or very strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained soils
- Soils with a higher percentage of rock fragments in the profile
- Philo soils

Nonlimiting inclusions:
- Macove soils

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used for hay or pasture.

Cropland
Suitability: Suited
Management concerns: Organic matter content and fertility and tilth
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: High
Management concerns: Plant competition
Management considerations:
- Harvesting so that a portion of the overstory is retained and applying herbicides reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Flooding
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 2w
Woodland ordination symbol: 7A

Pt—Potomac very gravelly fine sandy loam

Setting

Landscape position: Flood plains

Composition

Potomac soil: 85 percent
Inclusions: 15 percent

Typical Profile

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

Substratum:
6 to 23 inches—brown extremely gravelly loamy sand with pockets of sandy loam
23 to 31 inches—dark yellowish brown very gravelly loamy sand with pockets of sand
31 to 65 inches—brown extremely gravelly loamy sand with pockets of sandy loam

Soil Properties and Qualities

Drainage class: Somewhat excessively drained
Permeability: Rapid or very rapid
Available water capacity: Very low or low
Seasonal high water table: None
Flooding: Frequent
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: In unlimed areas, strongly acid to neutral
Organic matter content in the surface layer: Moderate
Surface runoff: Very low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained soils

Nonlimiting inclusions:
- Macove soils
- Sensabaugh soils

Use and Management

Uses: Most areas of this map unit are on wooded islands in the Greenbrier River. Some areas are used as pasture.

Cropland
Suitability: Limited
Management concerns: Organic matter and fertility and tilth
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Stream disturbance
Management considerations:
- Maintenance of streamside filter strips and revegetation of bare areas after they are no longer being used are recommended management practices.

Community Development
Suitability: Unsuited
Management concerns: Flooding, small stones, and droughtiness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 5s
Woodland ordination symbol: 4F

PuA—Purdy silt loam, 0 to 3 percent slopes

Setting

Landscape position: Terraces

Composition

Purdy soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown silt loam with yellowish brown redoximorphic concentrations

Subsoil:
8 to 20 inches—light brownish gray silty clay loam with yellowish brown redoximorphic concentrations

20 to 30 inches—gray silty clay with yellowish brown redoximorphic concentrations

Substratum:
30 to 60 inches—gray silty clay to clay

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Slow
Available water capacity: High
Seasonal high water table: Within a depth of 1.0 foot
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate to low
Reaction: In unlimed areas, strongly acid to extremely acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: More than 60 inches
Bedrock type: Mainly shale and siltstone

Inclusions

Limiting inclusions:
- Very poorly drained soils

Nonlimiting inclusions:
- Moderately well drained soils in similar landscape positions
- Somewhat poorly drained soils in similar landscape positions

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used for pasture or hay.

Cropland
Suitability: Suited
Management concerns: Wetness
Management considerations:
- A drainage system is needed in areas used for cultivated crops, hay, or pasture.
- Minimizing tillage, applying a crop rotation that includes hay, delaying tillage until the soil is reasonably dry, and returning crop residue to the soil help to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited to hay and pasture plants that can tolerate wetness
Management concerns: Overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing until the soil is firm are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Equipment limitation, seedling mortality, and plant competition

Management considerations:
- Delaying harvest activities until the soil is firm minimizes the equipment limitation.
- Planting water-tolerant trees minimizes the seedling mortality rate.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Wetness
Management considerations:
- A drainage system helps to overcome the wetness.

Interpretive Groups

Land capability classification: 4w
Woodland ordination symbol: 4W

Qu—Quarry, limestone

Setting

This map unit consists of active and abandoned quarries in scattered areas throughout the Greenbrier Valley. It occurs as areas of exposed limestone and rock fragments and of vertical highwalls.

Composition

Udorthents: 80 percent
Inclusions: 20 percent

Typical Profile

A typical profile for Quarry, limestone, is not given.

Properties and Qualities

Seasonal high water table: None
Slope class: Nearly level to extremely steep
Surface runoff: Medium in nearly level areas ranging to very high in extremely steep areas
Depth to bedrock: Varies but typically within 4 inches
Bedrock type: Limestone

Inclusions

Nonlimiting inclusions:
- Frankstown soils
- Caneyville soils
- Frederick soils

Use and Management

Uses: This map unit is unsuited to cropland, pasture, hayland, woodland, and community development. It is droughty, and plants cannot become established because most areas consist of exposed rock.

Interpretive Groups

Land capability classification: 8s
Woodland ordination symbol: Not assigned

Se—Sensabaugh loam

Setting

Landscape position: Flood plains, along small streams and drainageways throughout the survey area

Composition

Sensabaugh soil: 80 percent
Inclusions: 20 percent

Typical Profile

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

Subsoil:
6 to 25 inches—dark reddish brown gravelly loam
25 to 34 inches—dark reddish brown extremely gravelly loam

Substratum:
34 to 52 inches—dark reddish brown gravelly clay loam with strong brown mottles
52 to 65 inches—dark reddish brown extremely gravelly loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate or high
Depth to the seasonal high water table: 4.0 to 6.0 feet
Flooding: Occasional
Shrink-swell potential: Low
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, moderately acid to neutral
Organic matter content in the surface layer: Moderate
Surface runoff: Very low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Soils that have more rock fragments in the profile

Nonlimiting inclusions:
- Nolin soils in the same landscape position along Muddy Creek

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used for hay or pasture.

Cropland
Suitability: Suited
Management concerns: Flooding
Management considerations:
- If this soil is cultivated, minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase organic

matter content, maintain fertility and tilth, and protect the soil from scouring by floodwater.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: High
Management concerns: Plant competition and seedling mortality
Management considerations:
- Harvesting so that a portion of the overstory is retained and applying herbicides reduce plant competition.
- Planting containerized seedlings or more mature seedlings will reduce the seedling mortality rate.

Community Development
Suitability: Limited
Management concerns: Flooding
Management considerations:
- A better suited soil should be selected.

Interpretive Groups

Land capability classification: 2w
Woodland ordination symbol: 8A

SfB—Shouns channery silt loam, 3 to 8 percent slopes

Setting

Landscape position: Footslopes, benches, and alluvial fans

Composition

Shouns soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—dark brown channery silt loam

Subsoil:
4 to 8 inches—dark reddish brown channery silt loam
8 to 28 inches—reddish brown channery silty clay loam
28 to 38 inches—reddish brown very channery silty clay loam
38 to 54 inches—yellowish red very channery silty clay loam

Substratum:
54 to 65 inches—dark reddish brown channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate

Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate
Slope class: Gently sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Moderately deep Caneyville and Cateache soils
- Moderately well drained soils
- Soils with slopes of more than 8 percent

Nonlimiting inclusions:
- Soils with slopes of less than 3 percent
- Very deep Frederick soils

Use and Management

Uses: Most areas of this map unit are used for cultivated crops or hay. A few small areas are used as pasture or woodland.

Cropland
Suitability: Suited
Management concerns: Erosion and fertility and tilth.
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- The hazard of erosion can be reduced by establishing roads and trails on the contour; controlling surface runoff; seeding roads, trails, and landings after they are no longer being used; keeping the total mileage of roads and trails to a minimum; and seeding and mulching bare areas.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Large stones
Management considerations:
- Sites for septic tank absorption fields should be backfilled with material that contains fewer stones.
- Excavating the sites for dwellings with and without basements helps to overcome the stoniness.
- The stones should be removed during the construction of roads and streets.

Interpretive Groups

Land capability classification: 2e
Woodland ordination symbol: 4A

SfC—Shouns channery silt loam, 8 to 15 percent slopes

Setting

Landscape position: Footslopes, benches, and alluvial fans

Composition

Shouns soil: 85 percent
Inclusions: 15 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—dark brown channery silt loam

Subsoil:
4 to 8 inches—dark reddish brown channery silt loam
8 to 28 inches—reddish brown channery silt loam
28 to 38 inches—reddish brown very channery silty clay loam
38 to 54 inches—yellowish red very channery silty clay loam

Substratum:
54 to 65 inches—yellowish brown channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low or moderate
Reaction: In unlimed areas, very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Berks soils
- Dekalb soils
- Moderately well drained soils
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Allegheny soils
- Soils with slopes of less than 8 percent

Use and Management

Uses: Most areas of this map unit are used for hay and pasture. A few areas are used for cultivated crops or as woodland.

Cropland
Suitability: Suited
Management concerns: Erosion and fertility and tilth
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop rotation that includes hay, and returning crop residue to the soil help to control erosion and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on roads, skid trails, and log landings and plant competition
Management considerations:
- The hazard of erosion can be reduced by establishing roads and trails on the contour; controlling surface runoff; seeding roads, trails, and landings after they are no longer being used; keeping the total mileage of roads and trails to a minimum; and seeding and mulching bare areas.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Large stones and slope
Management considerations:
- Sites for septic tank absorption fields should be backfilled with material that contains fewer stones.
- Excavating the sites for dwellings with and without basements helps to overcome the stoniness.
- Land shaping and designing the structure to conform with the natural slope help to overcome the slope.
- The stones should be removed during the construction of roads and streets.

Interpretive Groups

Land capability classification: 3e
Woodland ordination symbol: 4F

ShC—Shouns channery silt loam, 3 to 15 percent slopes, extremely stony

Setting

Landscape position: Footslopes, benches, coves, and drainageways

Composition

Shouns soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—dark brown channery silt loam

Subsoil:
4 to 8 inches—dark reddish brown channery silt loam
8 to 28 inches—reddish brown channery silty clay loam
28 to 38 inches—reddish brown very channery silty clay loam
38 to 54 inches—yellowish red very channery silty clay loam

Substratum:
54 to 65 inches—dark reddish brown channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: In unlimed areas, very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Moderately deep Cateache and Caneyville soils
- Moderately well drained soils
- Soils with slopes of more than 15 percent
- Soils that have stones covering more than 15 percent of the surface

Nonlimiting inclusions:
- Very deep Frederick soils

- Soils that have stones covering less than 3 percent of the surface

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Stoniness and erosion

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Stoniness, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Large stones and slope
Management considerations:
- Land shaping, installing the distribution lines across the slope, or installing the lines in an area of less sloping, included soils helps to overcome the limitations affecting septic tank absorption fields.
- Sites for septic tank absorption fields should be backfilled with material that contains fewer stones.
- Land shaping, designing dwellings so that they conform to the setting and to the natural shape of the land, and removing the large stones during excavation of soil material help to overcome the limitations on sites for dwellings with or without basements.
- Constructing local roads and streets on the contour, land shaping and grading, adapting the design of the roads to the natural slope of the land, and removing the large stones help to overcome the limitations affecting local roads and streets.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4X

ShE—Shouns channery silt loam, 15 to 35 percent slopes, extremely stony

Setting

Landscape position: Footslopes, benches, coves, and drainageways

Composition

Shouns soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—dark brown channery silt loam

Subsoil:
4 to 8 inches—dark reddish brown channery silt loam
8 to 28 inches—reddish brown channery silty clay loam
28 to 38 inches—reddish brown very channery silty clay loam
38 to 54 inches—yellowish red very channery silty clay loam

Substratum:
54 to 65 inches—dark reddish brown channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or moderately steep
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: Very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Moderately deep Caneyville and Cateache soils
- Moderately well drained soils
- Soils that have boulders covering 3 to 15 percent of the surface
- Soils with slopes of more than 35 percent
- Soils that have stones covering more than 15 percent of the surface

Nonlimiting inclusions:
- Soils with slopes of less than 15 percent
- Soils that have stones covering less than 3 percent of the surface
- Very deep Frederick soils

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, overgrazing, and stoniness
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high on north aspects and moderate on south aspects
Management concerns: Erosion on roads, skid trails, and log landings; plant competition on north aspects; and seedling mortality on south aspects
Management considerations:
- The hazard of erosion can be reduced by establishing roads and trails on the contour; controlling surface runoff; seeding roads, trails, and landings after they are no longer being used; keeping the total mileage of roads and trails to a minimum; and seeding and mulching bare areas.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Planting larger stock or planting containerized seedlings early in the year to take advantage of spring rains will help reduce the seedling mortality rate.

Community Development
Suitability: Unsuited
Management concerns: Large stones and slope
Management considerations:
- The less sloping included soils that have fewer stones on the surface are not so severely limited as sites for community development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R on north aspects and 3R on south aspects

ShF—Shouns channery silt loam, 35 to 55 percent slopes, extremely stony

Setting

Landscape position: Footslopes, coves, and drainageways

Composition

Shouns soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—dark brown channery silt loam

Subsoil:
4 to 8 inches—dark reddish brown channery silt loam
8 to 28 inches—reddish brown channery silty clay loam
28 to 38 inches—reddish brown very channery silty clay loam
38 to 54 inches—yellowish red very channery silty clay loam

Substratum:
54 to 65 inches—dark reddish brown channery silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high

Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Moderate or high
Reaction: Very strongly acid to moderately acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Moderately deep Caneyville and Cateache soils
- Soils that have boulders covering 3 to 15 percent of the surface
- Soils with slopes of more than 55 percent
- Soils that have stones covering more than 15 percent of the surface

Nonlimiting inclusions:
- Soils with slopes of less than 35 percent
- Soils that have stones covering less than 3 percent of the surface

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, overgrazing, and stoniness restricts the use of most types of farm machinery
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferment of grazing in the spring until the soil is reasonably firm help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high on north aspects and moderate on south aspects
Management concerns: Erosion on roads, skid trails, and log landings; plant competition on north aspects; and seedling mortality on south aspects
Management considerations:
- The hazard of erosion can be reduced by establishing roads and trails on the contour; controlling surface runoff; seeding roads, trails, and landings after they are no longer being used; keeping the total mileage of roads and trails to a minimum; and seeding and mulching bare areas.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Planting larger stock or planting containerized seedlings early in the year to take advantage of spring rains will help reduce the seedling mortality rate.

Community Development
Suitability: Unsuited
Management concerns: Large stones and slope

Management considerations:
- The less sloping included soils that have fewer stones on the surface are not so severely limited as sites for community development.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4F on north aspects and 3F on south aspects

SmC—Simoda silt loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Broad ridgetops and upland depressions

Composition

Simoda soil: 75 percent
Inclusions: 25 percent

Typical Profile

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

Subsoil:
4 to 9 inches—brown silt loam
9 to 12 inches—dark yellowish brown silt loam
12 to 21 inches—yellowish brown channery silty clay loam
21 to 29 inches—yellowish brown channery silty clay loam with brownish gray redoximorphic depletions and strong brown redoximorphic concentrations
29 to 40 inches—dark yellowish brown extremely channery silt loam with light brownish gray redoximorphic depletions and strong brown redoximorphic concentrations

Substratum:
40 to 48 inches—dark yellowish brown channery silt loam with light brownish gray redoximorphic depletions and strong brown redoximorphic concentrations

Bedrock:
48 inches—sandstone

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: Low or moderate
Depth to the seasonal high water table: 1.5 to 2.5 feet
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: Extremely acid or very strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High

Depth to bedrock: 45 to 72 inches
Bedrock: Interbedded sandstone, siltstone, and shale

Inclusions

Limiting inclusions:
- Soils that are less than 40 inches deep over bedrock
- Somewhat poorly drained soils

Nonlimiting inclusions:
- Well drained Gauley soils
- Well drained Mandy soils
- Moderately well drained Snowdog soils
- Areas that are nonstony

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, stoniness, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Seedling mortality, windthrow, plant competition, low strength, and erosion
Management considerations:
- Planting nursery stock with a well developed root system and timing planting to take full advantage of the spring rains help to reduce the seedling mortality rate.
- Carefully thinning trees and protecting the surficial root system from damage help to prevent windthrow.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Haul roads, skid roads, and log landings should not be used during wet periods unless they have been strengthened with gravel because rut formation is a severe hazard.
- The hazard of erosion can be reduced by constructing haul roads and skid roads on a gentle grade across the slope; installing dips, ditches, water bars, and culverts to control surface runoff; and seeding grasses and legumes on roads and landings after they are no longer being used.

Community Development
Suitability: Limited
Management concerns: Wetness and erosion
Management considerations:
- Installing a tile drainage system, selecting a site in the well drained included soils, or installing a specially designed or alternate system helps to overcome the wetness affecting septic tank absorption fields.
- Selecting the well drained included soils as a site for dwellings helps to prevent the problems caused by wetness.

- Establishing a plant cover in unprotected areas and providing for the proper disposal of surface water help to control erosion.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 3X

SoC—Snowdog silt loam, 3 to 15 percent slopes, extremely stony

Setting

Landscape position: Lower side slopes, footslopes, and benches, at the higher elevations west of the Greenbrier River

Composition

Snowdog soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark brown silt loam

Subsoil:
4 to 6 inches—dark brown silt loam
6 to 18 inches—yellowish brown channery silt loam
18 to 42 inches—yellowish brown very channery loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations
42 to 57 inches—yellowish brown very channery sandy loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Substratum:
57 to 67 inches—yellowish brown channery silt loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate to slow
Available water capacity: Very low or low
Depth to the seasonal high water table: 1.5 to 2.5 feet
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Medium
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained Trussel soils

- Soils that have stones covering more than 15 percent of the surface
- Soils with slopes of more than 15 percent

Nonlimiting inclusions:
- Soils that have stones covering less than 3 percent of the surface

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Erosion, stoniness, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Plant competition can be reduced by site preparation following harvest, establishment of a new forest for tree crop production without delay, and the application of herbicides that help to control undesirable vegetation.

Community Development
Suitability: Limited
Management concerns: Slow water movement and wetness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4R

SoE—Snowdog silt loam, 15 to 35 percent slopes, extremely stony

Setting

Landscape position: Lower side slopes, footslopes, and benches, at the higher elevations west of the Greenbrier River

Composition

Snowdog soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark brown silt loam

Subsoil:
4 to 6 inches—dark brown silt loam
6 to 18 inches—yellowish brown channery silt loam
18 to 42 inches—yellowish brown very channery loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations
42 to 57 inches—yellowish brown very channery sandy loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Substratum:
57 to 67 inches—yellowish brown channery silt loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate to slow
Available water capacity: Very low or low
Depth to the seasonal high water table: 1.5 to 2.5 feet
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or moderately steep
Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained Trussel soils
- Soils that have stones covering more than 15 percent of the surface
- Soils with slopes of more than 35 percent

Nonlimiting inclusions:
- Soils that have stones covering less than 3 percent of the surface
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion, slope, and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Erosion, slope, stoniness, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and plant competition

Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Plant competition can be reduced by site preparation following harvest, establishment of a new forest for tree crop production without delay, and the application of herbicides that help to control undesirable vegetation.

Community Development
Suitability: Limited
Management concerns: Slope, slow water movement, and wetness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

SoF—Snowdog silt loam, 35 to 55 percent slopes, extremely stony

Setting

Landscape position: Lower side slopes and footslopes, at the higher elevations west of the Greenbrier River

Composition

Snowdog soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—very dark brown silt loam

Subsoil:
4 to 6 inches—dark brown silt loam
6 to 18 inches—yellowish brown channery silt loam
18 to 42 inches—yellowish brown very channery loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations
42 to 57 inches—yellowish brown very channery sandy loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Substratum:
57 to 67 inches—yellowish brown channery silt loam with grayish brown redoximorphic depletions and yellowish brown redoximorphic concentrations

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate to slow
Available water capacity: Very low or low
Depth to the seasonal high water table: 1.5 to 2.5 feet
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep

Stoniness: Extremely stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: High
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained Trussel soils
- Soils that have stones covering more than 15 percent of the surface
- Soils with slopes of more than 55 percent

Nonlimiting inclusions:
- Soils that have stones covering less than 3 percent of the surface
- Soils with slopes of less than 35 percent

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Erosion, slope, and stoniness

Pasture and Hayland
Suitability: Unsuited
Management concerns: Erosion, slope, stoniness, and overgrazing

Woodland
Potential productivity: Moderately high
Management concerns: Erosion and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.
- Plant competition can be reduced by site preparation following harvest, establishment of a new forest for tree crop production without delay, and the application of herbicides that help to control undesirable vegetation.

Community Development
Suitability: Unsuited
Management concerns: Slope, slow water movement, and wetness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: 4R

SvC—Summers very channery sandy loam, 0 to 15 percent slopes, very stony

Setting

Landscape position: Convex ridgetops, at the higher elevations west of the Greenbrier River

Composition

Summers soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 10 inches—very dark gray very channery sandy loam

Subsurface layer:
10 to 13 inches—dark brown very channery sandy loam

Subsoil:
13 to 20 inches—dark yellowish brown very channery sandy loam
20 to 28 inches—yellowish brown very channery sandy loam

Substratum:
28 to 30 inches—yellowish brown extremely channery sandy loam

Bedrock:
30 inches—fractured, grayish brown, medium grained sandstone

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Low or moderate
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope: Strongly sloping to nearly level
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Very strongly acid or strongly acid
Organic matter content in the surface layer: High
Surface runoff: Medium
Depth to bedrock: 20 to 40 inches
Bedrock: Sandstone

Inclusions

Limiting inclusions:
- Somewhat poorly drained Leatherbark soils
- Soils that have stones covering more than 3 percent of the surface

Nonlimiting inclusions:
- Moderately deep Mandy soils
- Soils that are more than 40 inches deep over bedrock
- Moderately deep Gauley soils

Use and Management

Uses: Most areas of this map unit are wooded (fig. 13).

Cropland
Suitability: Unsuited
Management concerns: Stoniness, erosion, and a short growing season

Figure 13.—A typical wooded area of Summers very channery sandy loam, 0 to 15 percent slopes, very stony.

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Stoniness, erosion, and a short growing season
Management considerations:
- The stoniness restricts the use of most types of farm machinery.
- The short growing season limits the number of days animals can graze pasture.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion
Management considerations:
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion in disturbed areas.
- Haul roads, skid roads, and log landings should be constructed in areas of the included soils that are less stony, less sandy, have bedrock at a greater depth, and, in the case of log landings, less sloping.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock, stoniness, frost action, erosion, and slope
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings with and without basements.

- Revegetating during or soon after construction reduces the hazard of erosion in areas cleared for construction.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- Constructing roads and streets on a gentle grade across the slope, clearing the surface of stones, and providing a coarse textured base material to frost depth help to overcome the limitations on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 4A

Tp—Tioga-Potomac complex

Setting

Landscape position: Flood plains

Composition

Tioga soil: 55 percent
Potomac soil: 35 percent
Inclusions: 10 percent

Typical Profile

Tioga
Surface layer:
0 to 1 inch—leaf litter
1 to 8 inches—dark brown fine sandy loam

Subsoil:
8 to 17 inches—dark yellowish brown fine sandy loam
17 to 29 inches—dark yellowish brown fine sandy loam with pockets of loamy fine sand

Substratum:
29 to 47 inches—dark yellowish brown loamy fine sand with pockets of fine sandy loam
47 to 68 inches—brown fine sandy loam with pockets of loamy fine sand

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

Substratum:
6 to 23 inches—brown extremely gravelly loamy sand with few pockets of fine sandy loam
23 to 31 inches—dark yellowish brown very gravelly loamy sand with pockets of sand
31 to 65 inches—brown extremely gravelly loamy sand with pockets of sandy loam

Soil Properties and Qualities

Drainage class: Tioga—well drained; Potomac—somewhat excessively drained
Permeability: Tioga—moderate to very rapid; Potomac—rapid or very rapid
Available water capacity: Tioga—low to high; Potomac—very low or low
Seasonal high water table: Tioga—at a depth of 3 to 6 feet; Potomac—none
Flooding: Tioga—occasional; Potomac—frequent

Shrink-swell potential: None
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Tioga—moderate or high; Potomac—moderate
Reaction: Strongly acid to neutral in the solum and very strongly acid to mildly alkaline in the substratum
Organic matter content in the surface layer: Moderate
Surface runoff: Very low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Poorly drained soils

Nonlimiting inclusions:
- Chavies soils on rarely flooded terraces

Use and Management

Uses: Most areas of this map unit are wooded. A few small areas have been cleared, but access to them is severely restricted by the high water channels of the Greenbrier River.

Cropland
Suitability: Tioga—well suited; Potomac—limited
Management concerns: Organic matter content and fertility and tilth
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content and to maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Tioga—well suited; Potomac—somewhat suited
Management concerns: Organic matter content, fertility and tilth, and overgrazing
Management considerations:
- Establishing and maintaining a mixture of grasses and legumes and applying a properly designed grazing system are pasture management needs.
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Tioga—moderately high; Potomac—moderately high
Management concerns: Stream disturbance
Management considerations:
- Installing streamside filter strips and revegetating bare areas help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Flooding
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: Tioga—2w; Potomac—5s
Woodland ordination symbol: Tioga—4A; Potomac—4F

TrC—Trussel silt loam, 3 to 15 percent slopes, very stony

Setting

Landscape position: Footslopes and benches

Composition

Trussel soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 2 inches—forest litter
2 to 4 inches—black silt loam

Subsurface layer:
4 to 8 inches—light brownish gray silt loam with brownish yellow redoximorphic concentrations

Subsoil:
8 to 13 inches—gray silt loam with brownish yellow and dark yellowish brown redoximorphic concentrations
13 to 20 inches—gray channery silt loam with yellowish brown and dark yellowish brown redoximorphic concentrations
20 to 37 inches—olive channery loam with gray redoximorphic depletions and strong brown redoximorphic concentrations
37 to 49 inches—light olive gray very channery loam with strong brown redoximorphic concentrations

Substratum:
49 to 67 inches—light olive brown very channery loam with gray redoximorphic depletions and strong brown redoximorphic concentrations

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Moderate to slow
Available water capacity: Very low or low
Seasonal high water table: Within a depth of 6 inches
Flooding: None or slight
Shrink-swell potential: Low
Hazard of erosion: Moderate or severe
Slope class: Strongly sloping or gently sloping
Stoniness: Very stony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Moderate
Surface runoff: Very high
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Soils that have stones covering more than 3 percent of the surface

Nonlimiting inclusions:
- Moderately well drained Snowdog soils
- Well drained Udifluvents

Use and Management

Uses: Most areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Wetness, erosion, and stoniness

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Wetness, erosion, stoniness, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: High for red spruce
Management concerns: Plant competition and wetness
Management considerations:
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.
- Logging should be deferred during wet seasons until the soil is reasonably firm.
- Applying gravel to the surface of the main roads helps to minimize the effects of the wetness.

Community Development
Suitability: Unsuited
Management concerns: Wetness, slow water movement, and frost action
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 6s
Woodland ordination symbol: 7W

Uf—Udifluvents-Fluvaquents complex

Setting

Landscape position: Flood plains, at an elevation of more than 3,000 feet
Note: The soils are so intermingled that it was not practical to map them separately; however, Udifluvents tend to be more common along larger drainageways, while Fluvaquents are most common along the smaller drainageways.

Composition

Udifluvents: 45 percent
Fluvaquents: 35 percent
Inclusions: 20 percent

Typical Profile

A typical pedon for Udifluvents and Fluvaquents is not given because the soils vary so much.

Soil Properties and Qualities

Drainage class: Well drained to poorly drained
Permeability: Varies
Available water capacity: Varies

Seasonal high water table: Udifluvents—at a depth of 1.5 to 3.0 feet; Fluvaquents—within a depth of 0.5 foot
Flooding: Udifluvents—rare to occasional; Fluvaquents—frequent or occasional
Shrink-swell potential: Varies
Erosion hazard: None or slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Varies
Reaction: Extremely acid to strongly acid
Organic matter content in the surface layer: Varies
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Soils that have stones covering 0.1 to 3 percent of the surface

Nonlimiting inclusions:
- Soils similar to Udifluvents but having a cambic horizon
- Soils similar to Fluvaquents but having a histic epipedon

Use and Management

Uses: All areas of this map unit are managed for woodland and wildlife habitat.

Cropland
Suitability: Unsuited
Management concerns: Flooding

Pasture and Hayland
Suitability: Unsuited
Management concerns: Flooding

Woodland
Potential productivity: Varies
Management concerns: Wetness and flooding
Management considerations:
- Conventional skidder or tractor logging equipment should not be operated in areas dominated by Fluvaquents.
- Conventional equipment can be used when timber is harvested during the drier periods of the year in areas dominated by Udifluvents if precautions are taken.
- Haul roads and landings are best located in areas of well drained soils in adjacent map units. If haul roads are built in areas of this map unit, some gravel surfacing may be needed.
- Skidding equipment should not pass through poorly drained areas or cross intermittent stream channels unless proper crossings have been developed.
- Maintaining streamside filter strips and seeding bare areas following use help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Flooding and wetness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: Unassigned
Woodland ordination symbol: Unassigned

Ux—Udorthents, smoothed-Rock outcrop complex

Setting

This map unit occurs as areas of soils that have been disturbed by road construction or industrial and urban development intermingled with areas of Rock outcrop. It is mainly along Interstate 64 and in the Lewisburg, Fairlea, Ronceverte, and Alderson areas.

Composition

Udorthents: 50 percent
Rock outcrop: 35 percent
Inclusions: 15 percent

Typical Profile

Udorthents

A typical pedon is not given because the soils vary so much.

Rock outcrop

The Rock outcrop occurs as areas of exposed bedrock.

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Varies
Available water capacity: Varies
Depth to the seasonal high water table: Varies
Flooding: Varies
Shrink-swell potential: Varies
Hazard of erosion: Varies
Slope class: Nearly level to extremely steep
Stoniness: Varies
Rockiness: Varies
Natural fertility: Low to high
Reaction: Varies
Organic matter content in the surface layer: Varies
Depth to bedrock: More than 60 inches in most fill areas
Bedrock: Varies

Inclusions

Nonlimiting inclusions:

- Frankstown soils
- Frederick soils
- Caneyville soils
- Culleoka soils
- Cateache soils
- Dekalb soils
- Lily soils

Use and Management

Uses: This map unit is used in association with building site development, or the acreage is idle land.

Cropland

Suitability: Undetermined

Management considerations:
- Onsite investigation is necessary.

Pasture and Hayland
Suitability: Undetermined
Management considerations:
- Onsite investigation is necessary.

Woodland
Potential productivity: Undetermined
Management considerations:
- Onsite investigation is necessary.

Community Development
Suitability: Undetermined
Management considerations:
- Onsite investigation is necessary.

Interpretive Groups

Land capability classification: Not assigned
Woodland ordination symbol: Not assigned

WeC—Weikert channery silt loam, 8 to 15 percent slopes

Setting

Landscape position: Convex ridgetops, adjacent to terraces

Composition

Weikert soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 7 inches—yellowish brown very channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam

Substratum:
12 to 16 inches—brownish yellow extremely channery silt loam

Bedrock:
16 inches—multicolored siltstone and shale

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low

Hazard of erosion: Severe
Slope class: Strongly sloping
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Very strongly acid or strongly acid
Organic matter content in the surface layer: Low
Surface runoff: Low
Depth to bedrock: 10 to 20 inches
Bedrock: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils that are less than 10 inches deep over bedrock
- Soils with slopes of more than 15 percent
- Soils that have stones covering 0.1 to 3 percent of the surface

Nonlimiting inclusions:
- Very deep Allegheny soils
- Moderately deep Berks soils
- Soils that have fewer rock fragments in the profile
- Soils with slopes of less than 8 percent

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture, and a few are used for hay or cultivated crops.

Cropland
Suitability: Limited
Management concerns: Slope, erosion, depth to bedrock, and droughtiness
Management considerations:
- Applying a conservation tillage system, cultivating on the contour, applying a crop sequence that includes hay, and returning crop residue to the soil help to control erosion and maintain fertility and tilth in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Erosion and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Depth to bedrock, droughtiness during the growing season, and erosion
Management considerations:
- Planting special nursery stock that is larger than is typical or that is containerized or applying special site preparation, such as furrowing, helps to overcome the depth to bedrock and reduce the seedling mortality rate.
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock, slope, erosion, and frost action

Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings with and without basements.
- Revegetating during or soon after construction reduces the hazard of erosion.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.
- Planning grades so that the removal of bedrock is not necessary, constructing roads and streets on the contour, and providing coarse grained base material help to overcome the depth to bedrock and slope and to prevent the damage caused by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 4e
Woodland ordination symbol: 2D

WeD—Weikert channery silt loam, 15 to 25 percent slopes

Setting

Landscape position: Ridgetops or side slopes, adjacent to terraces

Composition

Weikert soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 7 inches—yellowish brown very channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam

Substratum:
12 to 16 inches—brownish yellow extremely channery silt loam

Bedrock:
16 inches—multicolored siltstone and shale

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Severe
Slope class: Moderately steep
Stoniness: Nonstony
Rockiness: Nonrocky

Natural fertility: Low
Reaction: Very strongly acid or strongly acid
Organic matter content in the surface layer: Low
Surface runoff: Medium
Depth to bedrock: 10 to 20 inches
Bedrock: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils that are less than 10 inches deep over bedrock
- Soils with slopes of more than 25 percent
- Soils that have stones covering 0.1 to 3 percent of the surface

Nonlimiting inclusions:
- Very deep Allegheny soils
- Very deep Macove soils
- Moderately deep Berks soils
- Soils that have fewer rock fragments in the profile
- Soils with slopes of less than 15 percent

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, depth to bedrock, and droughtiness

Pasture and Hayland
Suitability: Unsuited to hay; suited to pasture
Management concerns: Slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Depth to bedrock, droughtiness during the growing season, slope, and erosion
Management considerations:
- Planting special nursery stock that is larger than is typical or that is containerized or applying special site preparation, such as furrowing, helps to overcome the depth to bedrock and reduce the seedling mortality rate.
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Limited
Management concerns: Depth to bedrock, slope, erosion, and frost action
Management considerations:
- Building above the bedrock, landscaping with additional fill material, and designing dwellings so that they conform to the setting and to the natural slope of the land help to overcome the limitations on sites for dwellings with and without basements.
- Revegetating during or soon after construction reduces the hazard of erosion.
- Increasing the size of lots so that they include areas of more favorable soils or installing an alternate system helps to overcome the limited depth to bedrock on sites for septic tank absorption fields.

- Planning grades so that the removal of bedrock is not necessary, constructing roads and streets on the contour, and providing coarse grained base material help to overcome the depth to bedrock and slope and to prevent the damage caused by frost action on sites for local roads and streets.

Interpretive Groups

Land capability classification: 6e
Woodland ordination symbol: 3D on north aspects and 2D on south aspects

WeF—Weikert channery silt loam, 25 to 55 percent slopes

Setting

Landscape position: Side slopes, generally adjacent to flood plains or terraces

Composition

Weikert soil: 75 percent
Inclusions: 25 percent

Typical Profile

Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 7 inches—yellowish brown very channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam

Substratum:
12 to 16 inches—brownish yellow extremely channery silt loam

Bedrock:
16 inches—multicolored siltstone and shale

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Seasonal high water table: None
Flooding: None
Shrink-swell potential: Low
Hazard of erosion: Very severe
Slope class: Steep or very steep
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Low
Reaction: Very strongly acid or strongly acid
Organic matter content in the surface layer: Low
Surface runoff: Medium
Depth to bedrock: 10 to 20 inches
Bedrock: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils that are less than 10 inches deep over bedrock

- Soils with slopes of more than 55 percent
- Areas where erosion has removed most of the original surface layer and the subsoil is exposed
- Soils that have stones covering 0.1 to 3 percent of the surface

Nonlimiting inclusions:
- Very deep soils
- Moderately deep Berks soils
- Soils that have fewer rock fragments in the profile
- Soils with slopes of less than 25 percent

Use and Management

Uses: Most areas of this map unit are wooded. Some are used as pasture.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, the limited depth to bedrock, and droughtiness during the growing season

Pasture and Hayland
Suitability: Unsuited to hay; limited for pasture
Management concerns: Slope, erosion, and overgrazing
Management considerations:
- Proper stocking rates that help to maintain desirable grasses and legumes and a rotation grazing system are major pasture management needs.

Woodland
Potential productivity: Moderate
Management concerns: Depth to bedrock, droughtiness, slope, and erosion
Management considerations:
- Planting special nursery stock that is larger than is typical or that is containerized or applying special site preparation, such as furrowing, helps to overcome the depth to bedrock and reduce the seedling mortality rate.
- Specialized equipment or management techniques that are adapted to steep slopes should be used when timber is harvested.
- Establishing roads and trails on a gentle grade across the slope and seeding and mulching bare areas help to control erosion.

Community Development
Suitability: Unsuited
Management concerns: Depth to bedrock, slope, erosion, and frost action
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7e
Woodland ordination symbol: 2R

WrG—Weikert-Berks-Rough complex, 55 to 80 percent slopes, very stony

Setting

Landscape position: Mountains and foothills

Composition

Weikert soil: 40 percent

Berks soil: 35 percent
Rough soil: 15 percent
Inclusions: 10 percent

Typical Profile

Berks
Surface layer:
0 to 1 inch—leaf litter
1 to 3 inches—dark brown channery loam

Subsoil:
3 to 6 inches—brown channery loam
6 to 12 inches—brownish yellow channery loam
12 to 19 inches—brownish yellow very channery silt loam
19 to 23 inches—yellowish brown very channery silt loam

Substratum:
23 to 30 inches—yellowish brown very channery silt loam

Bedrock:
30 inches—highly weathered, strong brown, gray, and olive siltstone

Weikert
Surface layer:
0 to 1 inch—forest litter
1 to 2 inches—dark brown channery silt loam

Subsurface layer:
2 to 7 inches—yellowish brown very channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam

Substratum:
12 to 16 inches—brownish yellow extremely channery silt loam

Bedrock:
16 inches—multicolored siltstone and shale

Rough
Surface layer:
0 to 2 inches—very dark grayish brown very channery silt loam

Subsoil:
2 to 4 inches—dark yellowish brown very channery silt loam

Substratum:
4 to 7 inches—dark yellowish brown extremely channery silt loam

Bedrock:
7 inches—fissile shale

Soil Properties and Qualities

Drainage class: Weikert and Berks—well drained; Rough—somewhat excessively drained
Permeability: Berks—moderate or moderately rapid; Weikert—moderately rapid; Rough—moderately rapid or rapid
Available water capacity: Berks—very low or low; Weikert and Rough—very low
Seasonal high water table: None
Flooding: None

Shrink-swell potential: Low
Erosion hazard: Very severe
Slope class: Extremely steep
Stoniness: Very stony
Rockiness: None
Natural fertility: Low
Reaction: Berks—extremely acid to strongly acid; Weikert and Rough—very strongly acid or strongly acid
Organic matter content of the surface layer: Low
Surface runoff: Weikert—medium; Berks—high; Rough—very high
Depth to bedrock: Weikert—10 to 20 inches; Berks—20 to 40 inches; Rough—4 to 10 inches
Bedrock: Siltstone and shale

Inclusions

Limiting inclusions:
- Soils with more than 60 percent channers
- Soils with an extremely stony surface
- Areas of rock outcrop

Nonlimiting inclusions:
- Soils that are loam or have less than 15 percent channers
- Gilpin soils
- Soils with a nonstony surface
- Very deep colluvial soils that have less than 35 percent rock fragments throughout

Use and Management

Uses: All areas of this map unit are wooded.

Cropland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Pasture and Hayland
Suitability: Unsuited
Management concerns: Slope, erosion, and stoniness

Woodland
Potential productivity: Moderate or moderately high on north aspects and moderate on south aspects
Management concerns: Slope and erosion
Management considerations:
- Log landings can only be located in adjacent, less sloping areas, such as on ridgetops or benches.
- Haul roads should be located in areas of adjacent, less sloping map units whenever possible.
- If haul roads and skid trails must be constructed in this unit, they should be located on a gentle grade across the slope. Full bench construction is recommended on haul roads.
- The hazard of erosion can be reduced by establishing wide, streamside filter strips; controlling surface runoff on roads, trails, and landings through the use of ditches, dips, or water bars; and seeding bare areas.
- Logging systems that are adapted to extremely steep slopes, such as high lead cable logging, are recommended because they allow timber to be

harvested without the use of skid trails, thus greatly reducing the hazard of erosion.

Community Development
Suitability: Unsuited
Management concerns: Slope, erosion, depth to bedrock, and stoniness
Management considerations:
- A suitable alternative site should be selected.

Interpretive Groups

Land capability classification: 7s
Woodland ordination symbol: Berks—3R; Weikert and Rough—2R

ZoA—Zoar silt loam, 0 to 3 percent slopes

Setting

Landscape position: Stream terraces

Composition

Zoar soil: 80 percent
Inclusions: 20 percent

Typical Profile

Surface layer:
0 to 9 inches—dark brown silt loam

Subsoil:
9 to 17 inches—brown silty clay loam
17 to 25 inches—strong brown silty clay with strong brown redoximorphic concentrations
25 to 43 inches—brown silty clay loam with gray redoximorphic depletions and strong brown redoximorphic concentrations

Substratum:
43 to 53 inches—brown silty clay loam with gray redoximorphic depletions and strong brown and brownish yellow redoximorphic concentrations
53 to 65 inches—brown silty clay with gray redoximorphic depletions and strong brown redoximorphic concentrations

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Slow
Available water capacity: Moderate or high
Depth to the seasonal high water table: 1.5 to 2.5 feet
Flooding: None
Shrink-swell potential: Moderate
Hazard of erosion: Slight
Slope class: Nearly level
Stoniness: Nonstony
Rockiness: Nonrocky
Natural fertility: Moderate
Reaction: Very strongly acid or strongly acid
Organic matter content in the surface layer: Moderate

Surface runoff: Low
Depth to bedrock: More than 60 inches

Inclusions

Limiting inclusions:
- Purdy soils in similar landscape positions
- Soils with slopes of more than 3 percent

Nonlimiting inclusions:
- Shouns soils on footslopes

Use and Management

Uses: Most areas of this map unit have been cleared. These areas are used as cropland, hay, or pasture.

Cropland
Suitability: Suited
Management concerns: Organic matter content, fertility and tilth, and erosion
Management considerations:
- Minimizing tillage, planting cover crops, and including grasses and legumes in the cropping sequence help to increase the organic matter content, maintain fertility and tilth, and control erosion in cultivated areas.

Pasture and Hayland
Suitability: Suited
Management concerns: Establishing and maintaining a mixture of grasses and legumes and applying proper grazing management
Management considerations:
- Proper stocking rates, a rotation grazing system, and deferred grazing help to maintain desirable grasses and legumes.

Woodland
Potential productivity: Moderately high
Management concerns: Erosion on trails and log landings and plant competition
Management considerations:
- Establishing roads and trails on a gentle grade across the slope to facilitate drainage and seeding and mulching bare areas help to control erosion.
- Site preparation following harvest and establishment of the new forest for tree crop production without delay reduce plant competition.

Community Development
Suitability: Limited
Management concerns: Wetness, slow water movement, and low strength
Management considerations:
- Installing a drainage system around septic tank absorption fields and constructing diversions that intercept water from upslope areas help to overcome the wetness.
- An alternate system or a specially designed system may be needed to minimize the effects of the slow water movement on sites for absorption fields.
- The wetness on sites for dwellings with and without basements can be overcome by installing tile drains by footings, adequately sealing the foundation, and, if possible, land shaping so that water moves away from the dwelling and runoff is diverted.
- Providing a suitable subgrade or base material or applying other suitable construction techniques helps to prevent the damage caused by low strength.

Interpretive Groups

Land capability classification: 2w
Woodland ordination symbol: 4A

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, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

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

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

Crops and Pasture

Thomas Vance, district conservationist, Natural Resources Conservation Service, helped to 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.

Some general principles of management apply to all of the soils suited to farm crops and pasture throughout the county, although individual soils or groups of soils require different kinds of management. The general principles of management are described in the following paragraphs.

Most of the soils in the county have a moderate or low supply of plant nutrients. As a result, applications of lime and fertilizer are necessary. The amounts to be applied depend on the type of soil, the cropping history, the type of crop grown, and the level of desired yields and should be determined by the results of soil tests and analyses.

The content of organic matter is low in most of the cultivated soils in the county. Increasing the content is not feasible; however, the content can be maintained by adding farm manure, returning crop residue to the soil, and growing sod crops, cover crops, and green manure crops.

Tillage tends to break down soil structure and should be kept to the minimum necessary to prepare the seedbed and control weeds. Maintaining the content of organic matter in the plow layer helps to maintain soil structure.

No-till farming is becoming more common when some annual crops and new stands of grasses and legumes are established. Winter cover crops also are being included as part of no-till systems when row crops are grown. These practices help to maintain the soil structure and the content of organic matter.

Runoff and erosion occur mainly while a cultivated crop is growing or soon after it has been harvested. If cultivated, all of the gently sloping and steeper soils in the county are subject to erosion. A suitable cropping system that helps to control erosion is needed on these soils. In areas where such a system is applied, the main management needs are proper crop rotations, minimum tillage, mulch planting, crop residue management, cover crops and green manure crops, and applications of lime and fertilizer. Other major erosion-control measures are contour farming, contour stripcropping, and grassed waterways. The effectiveness of a particular combination of these measures differs from one soil to another. Different combinations can be equally effective on the same soil.

Erosion is a critical problem in the county on some of the soils commonly used as pasture (fig. 14). Additional management concerns that are very difficult to overcome include the slope, the large size of the individual pastures, low fertility, encroachment of brush, and a lack of adequate water sources in proper locations.

A high level of pasture management, including applications of fertilizer, controlled grazing, and proper selection of forage species, is needed to prevent excessive erosion on some soils. The best controlled grazing system is rotating livestock from one pasture to another and allowing for regrowth of the pasture plants. Other means

Figure 14.—These soils are severely eroded because they have not been properly managed in the past.

of controlling grazing are varying the stocking rate according to forage production at different times in the growing season, deferring grazing to provide extra time for plant growth in areas grazed in the midsummer or fall, improving the grazing distribution in pastures by providing additional sources of water, and periodically moving the salt to areas that are undergrazed.

Generally, the quality of plant species in pastured areas varies in direct proportion to the level of management. In some situations it may be necessary to provide a seed source for better quality forage plants as the overall management level is improved. This is sometimes accomplished by feeding hay in areas where the ground cover is sparse or the species are undesirable. Frost seeding also is an option. The composition of the plant species also can be improved by increasing the level of available plant nutrients in areas of soils that have adequate pH. Applications of phosphate in pastured areas generally result in a higher percentage of white clover.

Personnel at the local office of the Natural Resources Conservation Service can provide information and assistance in choosing suitable practices for the management of the soils for crops and pasture.

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. 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 three levels—capability class, subclass, and unit (USDA 1961). Only class and subclass are used in this survey.

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

Class 1 soils have slight limitations that restrict their use.

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

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

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

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

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

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

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

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

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

The acreage of soils in each capability class or subclass is shown in table 6. 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.

About 38,204 acres in the survey area, or nearly 5.83 percent of the total acreage, meets the soil requirements for prime farmland. Most areas of this land are adjacent to the major drainageways or on the limestone flats that run in a north-south direction between Renick and Ronceverte, in the center of the county.

The map units in the survey area that are considered prime farmland are listed in table 7. 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."

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Tables 8a through 8c show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film.

Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Forest Productivity and Management

Thomas Halki, service forester, West Virginia Division of Forestry, helped to prepare this section.

Of the total 655,800 acres in the county, about 493,500 acres, or more than 75 percent of the total acreage, is used as commercial forestland. About 300 acres is noncommercial forestland, and the remaining 162,000 acres in the county is not forested. About 101,270 acres of the Monongahela National Forest is in Greenbrier County. Most of this land is included in the total acreage of commercial forestland described in the first sentence of this paragraph.

Greenbrier County has a significantly higher proportion of northern hardwood timber types, such as sugar maple, beech, and yellow birch, than most other counties in West Virginia. This type is, especially in the western portion of the county, on highly

productive sites and generally includes a significant proportion of black cherry. White oak, black oak, and northern red oak types tend to be on the drier sites in the eastern portion of the county. Much of the eastern portion of the county originally supported large stands of high-quality eastern white pine, and in many areas the current stands of white oak, black oak, and northern red oak type are reverting to eastern white pine through succession. The increased production of eastern white pine represents a long-term opportunity in the county. The higher elevations, generally above 3,500 feet, have an increasing amount of red spruce, either in relatively pure stands or mixed with northern hardwoods.

The principal product manufactured by sawmills in the county is green lumber, which is shipped to the manufacturing areas of North Carolina and Virginia, primarily for use in the production of furniture, flooring, and architectural woodworking. Lower grades of lumber are sold and used locally or in the manufacture of pallets. Some high-quality logs are sold for veneer manufactured outside the county. Greenbrier County is within the normal procurement area of the pulp and paper mill at Covington, Virginia.

In general, Greenbrier County has a major timber resource, particularly of hardwood species. The output of timber could be greatly increased on a sustained yield basis, especially through expanded use of smaller sized timber. Development of drying facilities and small to moderate sized secondary manufacturing would be especially desirable to improve the contribution of forest products to the local economy.

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 9, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet (http://soils.usda.gov/technical/nfmanual).

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forest Management

In tables 10a through 10e, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be

expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

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

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet (http://soils.usda.gov/technical/nfmanual).

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

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

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

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some

erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreation

Jim Miller, recreation technician, U.S. Department of Agriculture, Forest Service, helped to prepare this section.

Greenbrier County is within a day's drive of about one-half of the population of the United States, providing a demographic location high in potential use for recreation. It abounds with opportunities for outdoor recreation in a beautiful natural setting. The Greenbrier River and the associated Greenbrier River Trail, as well as the Monongahela National Forest, bring many outdoor visitors to this area. The Greenbrier River valley with karst topography and rolling farmland dominates the eastern part of the county, while the western part, which is part of the Appalachian Plateau, is characterized by deep gorges, rushing mountain streams, and elevations

of more than 4,000 feet. Another very unique area near the Meadow River consists of hardwood swamps that support a variety of vegetation and wildlife.

The Monongahela National Forest, the Greenbrier State Forest, and parts of the Calvin Price State Forest and Beartown State Park provide many areas for dispersed recreation, such as hiking, hunting, fishing, bird watching, mountain biking, driving for pleasure, horseback riding, and Nordic skiing. Camping, picnicking, swimming, and boating are available at Lake Sherwood (fig. 15) and Summit Lake in the national forest. Blue Bend Recreation Area, which was built by the Civilian Conservation Corps and is in an area of the national forest, provides opportunities for hiking, fishing, picnicking, camping, and swimming. The Greenbrier State Forest has camp areas, cabins to rent, and a swimming pool with lifeguards, as well as opportunities for picnicking, hiking, and attending seasonal naturalist programs.

The Greenbrier River and the associated Greenbrier River Trail State Park are heavily used by recreationists from West Virginia and elsewhere. Fishing, boating, tubing, and swimming are common activities in the river, and hiking, biking, and horseback riding are uses associated with the trail, which is an old railroad grade.

Greenbrier County has more than a thousand caves and is a prime area for spelunking and cave studies. Two fine commercial caves, Lost World Caverns and Organ Cave, provide tours for casual visitors and extended expeditions for the adventurous.

Golfing is very popular in the Greenbrier County area with three championship courses at the Greenbrier Resort, a 9-hole course at White Sulphur Springs, the Lewisburg Elks Country Club, Greenbrier Hills near Rainelle, and Oakhurst Links, which was the first organized golf club in the United States, near White Sulphur Springs (fig. 16).

Figure 15.—Lake Sherwood, which is part of Monongahela National Forest, is a major recreation destination in the county.

Figure 16.—Established in 1884, Oakhurst Links, near White Sulphur Springs, is the oldest established golf course in the United States.

The world renowned Greenbrier Resort is situated on 6,500 acres near White Sulphur Springs. Recreational opportunities include golf, tennis, swimming, horseback riding, carriage rides, hiking, fly fishing, hunting small game, mountain biking, croquet, falconry, skeet and trap shooting, billiards, and bowling.

The National Fish Hatchery at White Sulphur Springs has beautiful grounds for walking, a visitor center, display pond, and other ponds where trout, trout eggs, and endangered mussels are grown. It provides 10 million trout eggs annually for shipment to other hatcheries.

The State Fair of West Virginia is held for 10 days every August in Fairlea, near Lewisburg. Amusement rides, live entertainment, harness racing, exhibits, horse and livestock shows, and fireworks are a few of the attractions at this large event.

Carnegie Hall, located in Lewisburg, is one of only four Carnegie Halls still in continuous use in the world. It offers a wide variety of live performances throughout the year, including blues, Celtic, classical, folk, modern dance, family shows, musical theatre, choral, and more. Taste of Our Town (T.O.O.T.) is held every year in October as a fundraiser for the hall and brings a few thousand people to downtown Lewisburg.

The Greenbrier Valley Theatre presents live performances in downtown Lewisburg year round. Performances include Broadway musicals, classical and modern drama, new works, and children's theatre.

The soils of the survey area are rated in tables 11a and 11b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest

negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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

The information in tables 11a and 11b 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

Bill Igo, research wildlife biologist, West Virginia Division of Natural Resources, helped to prepare this section.

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 (fig. 17). The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

Figure 17.—Enhancement of wildlife habitat at Lake Tuckahoe, a constructed lake that helps to protect the city of White Sulphur Springs from flooding.

All wildlife species depend, directly or indirectly, on plants for survival. Herbivores rely on plants for food and cover, and carnivores and omnivores depend on herbivores as a food source and on plants for either food or cover, or both. The greater the number and variety of plants, the greater the number and variety of wildlife.

Greenbrier County is in two major land resource areas (MLRAs). These areas with their distinct vegetative components provide habitat for a wide diversity of wildlife species. The Eastern Allegheny Plateau and Mountains MLRA, which has northern hardwood forests, central hardwoods, and some isolated spruce tracts, comprises the western portion of the county. The Northern Appalachian Ridges and Valleys MLRA, with its oak-hickory-pine forest type, is primarily east of the Greenbrier River.

The dry oak-hickory-pine forests east of the Greenbrier River have a low to abundant population of gray squirrel, wild turkey, and white-tailed deer, depending upon acorn and hickory nut production. Fair numbers of ruffed grouse are in cutover lands, as well as in most forest stands containing mountain laurel or rhododendron. Black bear numbers have grown steadily, especially in areas of national forestland, since the forests have matured and public access has been controlled, providing more remote habitat conditions. Eastern cottontails are common in fields and bushy habitats in the valleys, while some scattered Appalachian cottontails, sometimes referred to as woods rabbits, inhabit recently regenerated and young growth stands at the higher elevations. Predators include the gray fox, primarily an interior woods species, and the red fox at the lower elevations. Bobcats are common around open habitats.

Typical songbirds include pine, golden-winged, cerulean, worm-eating, and black-and-white warblers; ovenbirds; Louisiana waterthrush; wood thrush; downy, hairy, and pileated woodpeckers; Acadian flycatcher; Eastern wood-pewee; red-eyed vireo; indigo bunting; rufous-sided towhee; black-capped chickadee; and scarlet tanager. The most common nuthatch species is the white-breasted, though some red-breasted nuthatches breed in white pine areas in this part of the county. Pine siskins have nested in the area in some years following late winters and heavy production of white pine cones, and red crossbills breed occasionally at pine sites at the higher elevations.

Northern fence lizards are common, particularly on warm, dry slopes having a west or south aspect. Found with the more common pickerel frogs and spring peepers is the upland chorus frog, which is mainly only in the Northern Appalachian Ridges and Valleys MLRA in Greenbrier County. The rare grizzled skipper butterfly also is in this part of the county.

The Greenbrier River Valley, one of the major river valleys in West Virginia, lies mainly to the west of the Greenbrier River. It is comprised primarily of agricultural fields, pastures, and scattered woodlots. Fox squirrels are common; white-tailed deer numbers have been increasing; and rabbits, all eastern cottontails, thrive, especially when adequate summer rains provide sufficient late season herbaceous cover. Most forest dwelling species, such as wild turkey, black bear, wood thrush, scarlet tanager, and eastern wood-pewee, are not so common as they are east of the Greenbrier River. The red fox is the most common mammalian predator; gray fox and bobcat are in the area but in lower numbers.

Carolina chickadees replace black-capped chickadees in the southern portion of the valley. Common songbirds here are associated with open areas. They include song, field, and chipping sparrows; meadowlarks; red-bellied woodpeckers; yellow-shafted flickers; red-winged blackbirds; brown-headed cowbirds; cardinals; catbirds; mockingbirds; yellow warblers; phoebes; robins; blackbirds; Baltimore and orchard orioles; and house and Carolina wrens. Savannah and grasshopper sparrows, red-headed woodpeckers, and loggerhead shrikes also breed here but in smaller numbers. In association with the considerable amount of limestone bedrock and well

developed karst topography in the valley, numerous cave systems occur and contain a number of unique wildlife species, including the Indiana bat, the West Virginia spring salamander (found only in the General Davis Cave), cave salamander, cave crawfish, and several endemic cave beetles and other cave arthropods. Another amphibian, the Valley and Ridge salamander, is also found under rocks, logs, or other debris and is usually restricted to the Greenbrier Valley.

The Cold Knob area with elevations of more than 4,300 feet is in the northwest part of the county in the Eastern Allegheny Plateau and Mountains MLRA. It has lower temperatures, more precipitation, and much deeper snowfall than other portions of Greenbrier County. The northern hardwood and mixed hardwood forests associated with this province are home to a good black bear population. Squirrel, turkey, and deer numbers are fair to low. Appalachian cottontails occur here in good numbers, along with a low population of snowshoe hares. Hares are closely associated with red spruce, hemlock, and dense rhododendron thickets, which afford protection from great-horned and barred owls, gray fox, and bobcat, all of which are common. Bird species here are typical of northern environments. They include black-throated green, black-throated blue, mourning, Canada, magnolia, and Blackburnian warblers; winter wren; solitary vireo; hermit and Swainson thrushes; veery; rose-breasted grosbreaks; golden-crowned kinglet; and purple finch. Saw-whet owls have also been heard here and probably breed in the area. Reptiles are less abundant in numbers and diversity than in the warmer, drier eastern and southern portions of the county. Mountain chorus frogs are in this area of the county.

The western portion of the county at the lower elevations contains the Meadow River and its unique pin oak swamps and other wetlands. Forest types are quite varied and include northern hardwoods, cover hardwoods, mixed oak, and mixed hardwood types. Squirrel, turkey, and bear maintain fair to good numbers, while deer populations are low but growing. Grouse numbers in this area appear to be less stable than those in other areas of the county: some years show abundant numbers while in other years ruffed grouse are scarce. Woodcock populations are good in this area, especially along the rich wetlands of the Meadow River and its tributaries. The birds in the western portion of the state are similar to those commonly found in the eastern portion of the county, except red-bellied woodpeckers, willow and least flycatchers, and Carolina chickadees are more common in the western portion.

The Greenbrier and Meadow Rivers and their tributaries provide habitat for good numbers of wood ducks. Canada geese are especially common breeders in ponds in the Greenbrier Valley and produce heavily along the Greenbrier River if spring flooding does not occur during nesting. The population of beaver, mink, and muskrat is good throughout the county, particularly along major tributaries. The recently reintroduced river otter appears to be established in both major rivers and their secondary drainages.

Another species that has recently established itself in Greenbrier County is the coyote. This animal entered the county from the south via Monroe County and from the east via Virginia. It now is in areas throughout the county and continues to expand its numbers. The Northern Appalachian Ridges and Valleys MLRA in Greenbrier County has a good population of coyote, and surprisingly high numbers occur in the Eastern Allegheny Plateau and Mountains MLRA in the county. There is some concern coyotes may displace red fox in habitats where they occur. The coyote's impact on other wildlife is thought to be minimal, but reports from some localities show they have had devastating effects on feral domestic cats and groundhog populations. Wildlife populations are the products of available habitat. The condition of the habitat is determined by such factors as land use and vegetation structure and type, and these factors are, in turn, related to climate, topography, elevation, and soil type. Thus, a relationship between the existing habitat and soils can be established based upon the common definitive features.

Engineering

Richard L. Judy, state conservation engineer, Natural Resources Conservation Service, helped to prepare this section.

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 (fig. 18), sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface,

Figure 18.—Housing development in an area of Frederick silt loam, karst, 3 to 8 percent slopes. Areas of this soil were used for agronomic purposes in the recent past.

soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 12a and 12b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

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

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

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding,

slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 13a and 13b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates

that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the

hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 14a and 14b give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill (fig. 19). Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 14a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not

Figure 19.—A limestone quarry west of Lewisburg. The material being quarried is in the Greenbrier Group geology.

evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. 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 15 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other

permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-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 shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 16 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading “Soil Series and Their Morphology.”

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 as much as about 15 percent, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-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 grain-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 grain-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 omitted in the table.

Physical and Chemical Properties

Tables 17 and 18 show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

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

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In table 17, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each major 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 greatly affect the fertility and physical condition of the soil. They determine 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-bar moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each major 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. A bulk density of more than 1.6 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 major soil layer. The capacity varies, depending on soil properties that affect retention of water and depth of the root zone. 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 this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based

primarily on percentage of silt, sand, and organic matter and on soil structure and 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 resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. 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.

In table 18, *cation-exchange capacity* is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliquivalents 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. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliquivalents 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 and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Soil and Water Features

Tables 19 and 20 give estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

In table 19, *hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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

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

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

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

If a soil is assigned to two hydrologic groups in the table, the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

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

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

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 19 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.

Table 20 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 of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

A *cemented pan* is a cemented or indurated subsurface layer within a depth of 5 feet. Such a pan causes difficulty in excavation. Pans are classified as thin or thick. A thin pan is less than 3 inches thick if continuously indurated or less than 18 inches thick if discontinuous or fractured. Excavations can be made by trenching machines, backhoes, or small rippers. A thick pan is more than 3 inches thick if continuously indurated or more than 18 inches thick if discontinuous or fractured. Such a pan is so thick or massive that blasting or special equipment is needed in excavation.

Potential 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 mainly to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves 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 in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff 1998, 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 21 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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

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

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

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

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

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each

series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff 1998). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Allegheny Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landscape position: Stream terraces, footslopes, and alluvial fans
Parent material: Alluvium derived mainly from acid sandstone, siltstone, and shale
Slope range: 3 to 15 percent
Classification: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Representative Pedon

Allegheny loam, 3 to 8 percent slopes, in a wooded area on the campus of the Greenbrier Youth Camp; USGS Anthony topographic quadrangle; lat. 37 degrees 54 minutes 24 seconds N. and long. 80 degrees 19 minutes 32 seconds W.

Oi—0 to 1 inch; slightly decomposed hardwood and conifer leaf litter.
Oe—1 to 2 inches; moderately decomposed hardwood and conifer leaf litter.
Oa—2 to 3 inches; highly decomposed hardwood and conifer leaf litter.
A—3 to 5 inches; very dark grayish brown (10YR 3/2) loam; weak very fine and fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 5 percent rock fragments; extremely acid; clear wavy boundary.
BA—5 to 10 inches; yellowish brown (10YR 5/4) loam; weak fine subangular blocky structure; very friable; many very fine, fine, medium, and coarse roots; 5 percent rock fragments; extremely acid; clear wavy boundary.
Bt1—10 to 20 inches; yellowish brown (10YR 5/6) loam; weak fine and medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; few faint clay films along faces of peds and in root channels; 5 percent rock fragments; very strongly acid; gradual wavy boundary.
Bt2—20 to 28 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; few distinct clay films along faces of peds and in pores; 10 percent rock fragments; very strongly acid; gradual wavy boundary.
Bt3—28 to 43 inches; strong brown (7.5YR 4/6) clay loam; moderate fine and medium subangular blocky structure; friable; few very fine, fine, and medium roots; common distinct clay films along faces of peds and in pores; 10 percent rock fragments; very strongly acid; gradual wavy boundary.
BC—43 to 49 inches; strong brown (7.5YR 4/6) gravelly loam; common medium distinct yellowish brown (10YR 5/6) redoximorphic concentrations; weak fine and medium subangular blocky structure; friable; few very fine, fine, and medium roots; 15 percent rock fragments; very strongly acid; gradual wavy boundary.
C—49 to 65 inches; mixed strong brown (7.5YR 4/6), yellowish brown (10YR 5/6), and yellowish red (5YR 4/6) gravelly loam; massive; firm; few very fine, fine, and medium roots; 20 percent rock fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 30 to more than 72 inches

Depth to bedrock: 60 to more than 120 inches
Reaction: In unlimed areas, strongly acid to extremely acid
Content of rock fragments: 0 to 15 percent, by volume, in the A horizon; 0 to 30 percent, by volume, in the BA and Bt horizons; 0 to 35 percent, by volume, in the BC and C horizons

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—loam, fine sandy loam, or silt loam

BA horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—loam or silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—loam, clay loam, or silty clay loam

BC horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—loam, clay loam, or silty clay loam

C horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 to 6
Chroma—5 or 6
Texture—loam, clay loam, or silty clay loam

Atkins Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow to moderate
Landscape position: Flood plains
Parent material: Alluvium derived mainly from acid shale, siltstone, and sandstone
Slope range: 0 to 3 percent
Classification: Fine-loamy, mixed, active, acid, mesic Fluvaquentic Endoaquepts

Representative Pedon

Atkins silt loam, in an area of Atkins-Philo-Potomac complex, in an abandoned pasture; about 2.25 miles southwest of Alvon along Fleming Creek; USGS Alvon topographic quadrangle; lat. 37 degrees 52 minutes 32 seconds N. and long. 80 degrees 13 minutes 41 seconds W.

A—0 to 4 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; friable; many very fine, fine, and medium roots; few fine prominent strong brown (7.5YR 5/6) redoximorphic concentrations and few fine distinct grayish brown (10YR 5/2) redoximorphic depletions; very strongly acid; gradual wavy boundary.

Bg1—4 to 8 inches; grayish brown (2.5Y 5/2) silt loam; weak fine subangular blocky structure; friable; common very fine, fine, and medium roots; many fine prominent strong brown (7.5YR 5/8) and common fine prominent dark yellowish brown (10YR 4/4) redoximorphic concentrations; very strongly acid; clear wavy boundary.

Bg2—8 to 29 inches; gray (2.5Y 5/1) silt loam; weak fine and medium subangular blocky structure; friable; few very fine and fine roots; many fine prominent strong brown (7.5YR 5/8) and common fine prominent yellowish red (5YR 5/8) redoximorphic concentrations; 5 percent rock fragments; strongly acid; diffuse wavy boundary.

Cg1—29 to 47 inches; bluish gray (10B 5/1) silty clay loam; massive; firm; few very fine roots; many coarse prominent yellowish brown (10YR 5/8) redoximorphic concentrations; 5 percent rock fragments; strongly acid; gradual wavy boundary.

2Cg2—47 to 65 inches; bluish gray (5PB 5/1) very gravelly silty clay loam; massive; firm; many coarse prominent yellowish brown (10YR 5/8) redoximorphic concentrations; 45 percent rock fragments; strongly acid.

Range in Characteristics

Thickness of the solum: 25 to 50 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid; ranges to moderately acid below a depth of 40 inches
Content of rock fragments: 0 to 20 percent, by volume, in the solum and 0 to 60 percent, by volume, in the substratum

A horizon:
Hue—10YR
Value—4 to 7
Chroma—1 to 4
Texture—loam, silt loam, fine sandy loam, or silty clay loam

B horizon:
Hue—7.5YR, 10YR, 2.5Y, 5Y, 10B, or 5PB or is neutral
Value—4 to 7
Chroma—0 to 2
Redoximorphic features—hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 8
Texture—Silt loam, loam, or silty clay loam

C horizon:
Hue—7.5YR, 10YR, 2.5Y, 5Y, 10B, or 5PB or is neutral
Value—4 to 7
Chroma—0 to 8
Texture—Silt loam, loam, or silty clay loam; sand and gravel below a depth of 36 inches

Belmont Series

Depth class: Deep
Drainage class: Well drained
Permeability: Moderate
Landscape position: Benches and side slopes
Parent material: Limestone with some interbedded layers of shale, siltstone, and sandstone; in areas of the Greenbrier geologic deposit
Slope range: 15 to 35 percent
Classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Representative Pedon

Belmont silt loam, in a pastured area; in Pocahontas County; about 1,500 feet north and 60 degrees west of the intersection of Back Mountain Road and Nottingham Road; USGS Durbin topographic quadrangle; lat. 38 degrees 31 minutes 44 seconds N. and long. 79 degrees 51 minutes 54 seconds W.

Oi—0 to 2 inches; slightly decomposed leaf litter.
A—2 to 5 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine and medium granular structure; friable; many very fine and fine and common medium roots; 5 percent rock fragments; moderately acid; clear smooth boundary.
BA—5 to 8 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine subangular blocky structure; friable; many very fine and fine and common medium roots; 10 percent rock fragments; moderately acid; clear wavy boundary.
Bt1—8 to 14 inches; brown (7.5YR 4/4) channery silt loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine and few medium roots; common distinct clay films on faces of peds and rock fragments and in pores and root channels; 15 percent rock fragments; moderately acid; clear wavy boundary.
Bt2—14 to 25 inches; brown (7.5YR 4/4) channery silty clay loam; moderate fine and medium subangular blocky structure; friable; few medium roots; many prominent clay films on faces of peds and rock fragments and in pores and root channels; 15 percent rock fragments; slightly acid; clear wavy boundary.
Bt3—25 to 37 inches; brown (7.5YR 4/4) channery silty clay; strong medium and coarse subangular blocky structure; firm, sticky and plastic; few medium roots; many prominent clay films on faces of peds and rock fragments and in pores and root channels; 20 percent rock fragments; slightly acid; gradual wavy boundary.
C—37 to 53 inches; brown (7.5YR 4/4) very channery silty clay; massive; firm, sticky and plastic; 45 percent rock fragments; slightly alkaline; abrupt irregular boundary.
R—53 inches; gray (N 5/) limestone interbedded with dark grayish brown (2.5Y 4/2) siltstone.

Range in Characteristics

Thickness of the solum: 30 to 40 inches
Depth to bedrock: 43 to 52 inches
Reaction: In unlimed areas, strongly acid to slightly acid in the A horizon and in the upper part of the B horizon; moderately acid to neutral in the lower part of the B horizon; and moderately acid to slightly alkaline in the C horizon
Content of rock fragments: 0 to 5 percent, by volume, in the A horizon; 0 to 20 percent, by volume, in the B horizon; and 20 to 45 percent, by volume, in the C horizon
Type of rock fragments: Limestone, shale, siltstone, and sandstone

A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—2 or 3
Texture—silt loam, loam, or silty clay loam

BA horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—4
Texture—silt loam or silty clay loam

Bt horizon:
Hue—5YR or 7.5YR

Value—4 or 5
Chroma—3 or 4
Texture—silt loam, silty clay loam, or silty clay

C horizon:
Hue—5YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay or silty clay loam

Berks Series

Depth class: Moderately deep (fig. 20)
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Uplands, mainly in the eastern half of the county
Parent material: Interbedded siltstone, shale, and fine grained sandstone; in areas of the Chemung, Pocono, Brallier, Millboro, McKenzie, and Clinton geologic deposits
Slope range: 3 to 80 percent
Classification: Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Representative Pedon

Berks channery loam, in an area of Berks-Dekalb complex, 35 to 55 percent slopes, very stony, in a wooded area on Greenbrier Mountain; about 3 miles northwest of the intersection of West Virginia Routes 36 and 36/2; USGS White Sulphur Springs topographic quadrangle; lat. 37 degrees 51 minutes 18 seconds N. and long. 80 degrees 19 minutes 04 seconds W.

Oi—0 to 1 inch; slightly decomposed leaf litter.
A—1 to 3 inches; dark brown (10YR 3/3) channery loam; weak very fine and fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 20 percent rock fragments; strongly acid; abrupt wavy boundary.
BA—3 to 6 inches; brown (10YR 5/3) channery loam; weak fine subangular blocky and weak very fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 20 percent rock fragments; strongly acid; clear wavy boundary.
Bw1—6 to 12 inches; brownish yellow (10YR 6/6) channery loam; weak fine subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 25 percent rock fragments; very strongly acid; clear wavy boundary.
Bw2—12 to 19 inches; brownish yellow (10YR 6/6) very channery silt loam; weak fine and medium subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 35 percent rock fragments; very strongly acid; clear wavy boundary.
BC—19 to 23 inches; yellowish brown (10YR 5/6) very channery silt loam; massive; friable; few very fine, fine, medium, and coarse roots; 50 percent rock fragments; very strongly acid; clear irregular boundary.
C—23 to 30 inches; yellowish brown (10YR 5/6) very channery silt loam; massive; friable; few very fine, fine, medium, and coarse roots; 50 percent rock fragments; very strongly acid; clear irregular boundary.
Cr—30 inches; highly weathered, strong brown (7.5YR 5/8), gray (10YR 6/1), and olive (5Y 5/3) siltstone.

Range in Characteristics

Thickness of the solum: 18 to 30 inches
Depth to bedrock: 20 to 40 inches

Figure 20.—Representative profile of a Berks soil. Olive brown sandstone bedrock is at a depth of about 30 inches. Rock fragments are dominantly less than ¾ inch in size. The content of rock fragments increases with increasing depth. Depth is marked in feet.

Reaction: Extremely acid or strongly acid
Content of rock fragments: 15 to 40 percent, by volume, in the A horizon; 15 to 60 percent, by volume, in the B horizon; and 50 to 80 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4

B horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—silt loam or loam

C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture—silt loam or loam

Blackthorn Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid above the 2Bt horizon and moderate or moderately slow in the 2Bt horizon
Landscape position: Footslopes
Parent material: Colluvium derived from acid sandstone and siltstone over limestone; on the Helderberg, Cayugan, and McKenzie geologic deposits
Slope range: 3 to 35 percent
Classification: Loamy-skeletal, mixed, semiactive, mesic Typic Hapludults

Representative Pedon

Blackthorn very channery loam, 15 to 35 percent slopes, extremely stony, in a wooded area east of Alderson; about 4 miles east of the intersection of West Virginia Routes 12 and 63 and about 0.15 mile north of West Virginia Route 63; USGS Fort Spring topographic quadrangle; lat. 37 degrees 44 minutes 20 seconds N. and long. 80 degrees 34 minutes 58 seconds W.

Oi—0 to 1 inch; slightly decomposed leaf litter.
A—1 to 6 inches; very dark gray (10YR 3/1) very channery loam; weak medium granular structure; very friable; few medium and many fine and very fine roots; 50 percent rock fragments; neutral; clear wavy boundary.
BA—6 to 12 inches; brown (10YR 4/3) channery sandy loam; weak medium subangular blocky structure; very friable; few medium and common fine and very fine roots; 20 percent rock fragments; strongly acid; gradual wavy boundary.
Bw—12 to 24 inches; yellowish brown (10YR 5/6) very channery loam; weak medium subangular blocky structure; friable; few fine and very fine roots; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bt1—24 to 31 inches; yellowish brown (10YR 5/8) very channery sandy clay loam; moderate medium subangular blocky structure; friable; few fine and very fine roots; few manganese coatings; few faint clay films on faces of peds and rock fragments; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bt2—31 to 37 inches; strong brown (7.5YR 5/6) very channery sandy clay loam; moderate medium subangular blocky structure; friable; few fine and very fine roots; few manganese coatings; few faint clay films on faces of peds and rock fragments; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bt3—37 to 44 inches; yellowish brown (10YR 5/8) very channery clay loam; weak medium subangular blocky structure; friable; few fine and very fine roots; many manganese coatings; few faint clay films on faces of peds and rock fragments; 50 percent rock fragments; strongly acid; abrupt wavy boundary.
2Bt4—44 to 53 inches; strong brown (7.5YR 5/8) silty clay; moderate medium subangular blocky structure; firm, sticky; few fine and very fine roots; common manganese coatings; few faint clay films on faces of peds; 5 percent highly weathered siltstone fragments; strongly acid; clear wavy boundary.
2Bt5—53 to 65 inches; strong brown (7.5YR 5/8) silty clay loam; moderate medium subangular blocky structure; firm, slightly sticky; few fine and very fine roots; common manganese coatings; few faint clay films on faces of peds; strongly acid.

Range in Characteristics

Thickness of the solum: 60 inches or more
Depth to the 2Bt horizon: 40 inches or more
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid to moderately acid above the 2Bt horizon and very strongly acid or strongly acid in the 2Bt horizon
Content of rock fragments: 5 to 65 percent in individual subhorizons above the 2Bt horizon and 0 to 25 percent in the 2Bt horizon

A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—sandy loam, loam, or the channery and very channery analogs of those textures

BA horizon:
Hue—5YR, 7.5YR, or 10YR
Value—3 to 5
Chroma—3 or 4
Texture—loam or sandy loam

Bw and Bt horizons:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture—loam, sandy loam, sandy clay loam, or clay loam

2Bt horizon:
Hue—2.5YR, 5YR, or 7.5YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay or silty clay loam

Briery Series

Depth class: Very deep (fig. 21)
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Uplands, at elevations above 3,500 feet
Parent material: Partly weathered shale, siltstone, sandstone, and some coal from the surface mining of coal seams; in areas of the Pocahontas, New River, and Kanawha geologic deposits
Slope range: 0 to 80 percent
Classification: Loamy-skeletal, mixed, active, nonacid, frigid Typic Udorthents

Representative Pedon

Briery very channery silt loam, in an area on a bench revegetated with crownvetch, birdsfoot trefoil, and orchardgrass; in Pocahontas County; about 4.5 miles south and 45 degrees west of Sharp Knob on Gauley Mountain; USGS Sharp Knob topographic quadrangle; lat. 38 degrees 22 minutes 36 seconds N. and long. 80 degrees 13 minutes 05 seconds W.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) very channery silt loam; weak very fine granular structure; very friable; many very fine, fine, and medium roots; 45 percent rock fragments; moderately acid; abrupt smooth boundary.

Figure 21.—Representative profile of a Briery soil. This soil has a very thin surface layer underlain by a loamy-skeletal substratum. The dominant rock is black siltstone. The red and gray colors are lithochromic. The photograph shows the profile to a depth of 60 inches.

C1—2 to 21 inches; brown (10YR 4/3) very channery silt loam; common distinct strong brown (7.5YR 5/8) and prominent gray (10YR 5/1) lithochromic mottles; massive; friable; few fine and medium roots; 55 percent rock fragments; neutral; gradual irregular boundary.

C2—21 to 65 inches; brown (10YR 4/3) extremely channery silty clay loam; massive; friable; few very fine and fine roots; 75 percent rock fragments; mildly alkaline.

Range in Characteristics

Depth to bedrock: More than 60 inches
Reaction: Strongly acid to slightly alkaline
Content of rock fragments: 15 to 85 percent, by volume, throughout the profile; averages 35 percent or more, by volume, in the particle-size control section; each type of rock fragment less than 65 percent, by volume, of the total rock fragments in the control section
Type of rock fragments: Siltstone, shale, sandstone, and coal; dominantly channers but includes stones and a few boulders

A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 3
Texture—silt loam or loam

C horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam, silty clay loam, or loam

Calvin Series

Depth class: Moderately deep (fig. 22)
Drainage class: Well drained
Permeability: Moderately rapid
Landscape position: Ridgetops, benches, and side slopes
Parent material: Shale, siltstone, and fine grained sandstone; in areas of the McKenzie, Clinton, and Juniata geologic deposits
Slope range: 3 to 80 percent
Classification: Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Representative Pedon

Calvin channery silt loam, in a wooded area; in Pocahontas County; about 1.5 miles south and 77 degrees east of where County Route 39/2 crosses Stillhouse Run; USGS Marlinton topographic quadrangle; lat. 38 degrees 12 minutes 14 seconds N. and long. 80 degrees 04 minutes 17 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
A—1 to 3 inches; dark reddish brown (5YR 3/2) channery silt loam; weak very fine granular structure; very friable; many very fine, fine, and medium roots; 25 percent rock fragments; very strongly acid; abrupt smooth boundary.
BA—3 to 5 inches; reddish brown (5YR 4/3) channery silt loam; weak fine subangular blocky structure parting to weak very fine granular; very friable; many very fine, fine, medium, and coarse roots; 18 percent rock fragments; very strongly acid; abrupt wavy boundary.
Bw1—5 to 14 inches; reddish brown (5YR 4/4) channery silt loam; weak fine and medium subangular blocky structure; very friable; common very fine, fine, medium, and coarse roots; 25 percent rock fragments; very strongly acid; clear smooth boundary.
Bw2—14 to 22 inches; reddish brown (5YR 4/4) channery silt loam; moderate medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; 25 percent rock fragments; very strongly acid; clear wavy boundary.

Figure 22.—Representative profile of a Calvin soil. Reddish brown, fine grained sandstone bedrock is at a depth of about 24 inches. Depth is marked in feet.

BC—22 to 28 inches; reddish brown (5YR 4/4) very channery silt loam; moderate medium subangular blocky structure; friable; few very fine, fine, and medium roots; 55 percent rock fragments; very strongly acid; gradual wavy boundary.

C—28 to 40 inches; reddish brown (5YR 4/4) extremely channery silt loam; massive; firm; few very fine, fine, and medium roots; 65 percent rock fragments; very strongly acid; clear smooth boundary.
Cr—40 inches; reddish brown (5YR 4/3), highly weathered siltstone.

Range in Characteristics

Thickness of the solum: 20 to 32 inches
Depth to bedrock: 20 to 40 inches
Reaction: Very strongly acid or strongly acid
Content of rock fragments: 5 to 25 percent, by volume, in the A and BA horizons; 25 to 55 percent, by volume, in the Bw and BC horizons; 55 to 70 percent, by volume, in the C horizon; averages more than 35 percent, by volume, in the particle-size control section

A horizon:
Hue—5YR or 7.5YR
Value—2 to 5
Chroma—2 to 4
Texture—silt loam or loam

BA horizon:
Hue—5YR
Value—4 or 5
Chroma—3 or 4
Texture—loam or silt loam

Bw and BC horizons:
Hue—2.5YR or 5YR
Value—4 or 5
Chroma—3 to 6
Texture—loam or silt loam

C horizon:
Hue—2.5YR or 5YR
Value—3 or 4
Chroma—3 or 4
Texture—loam or silt loam

Caneyville Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow or moderate
Landscape position: Uplands
Parent material: Limestone interbedded with thin layers of siltstone and shale; in areas of the Greenbrier geologic deposit
Slope range: 3 to 60 percent
Classification: Fine, mixed, active, mesic Typic Hapludalfs

Representative Pedon

Caneyville silt loam, in a pastured area of Frederick-Caneyville complex, karst, 15 to 35 percent slopes, very rocky; about 3.5 miles northwest of Lewisburg; USGS Asbury topographic quadrangle; lat. 37 degrees 50 minutes 26 seconds N. and long. 80 degrees 30 minutes 15 seconds W.

A—0 to 3 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure parting to weak fine granular; very friable; common fine and very

fine roots; less than 5 percent rock fragments; moderately acid; clear smooth boundary.

BA—3 to 6 inches; strong brown (7.5YR 5/6) silt loam; weak fine and medium subangular blocky structure; very friable; common very fine and few fine roots; less than 5 percent rock fragments; slightly acid; clear wavy boundary.

Bt1—6 to 10 inches; strong brown (7.5YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; common very fine and few fine roots; few faint clay films on faces of peds; few fine and medium, brown (10YR 4/3) krotovinas; less than 5 percent rock fragments; slightly acid; clear wavy boundary.

Bt2—10 to 15 inches; yellowish red (5YR 5/6) clay; moderate medium subangular blocky structure; firm; few fine and very fine roots; common distinct clay films on faces of peds; few fine and medium, brown (10YR 4/3) krotovinas; less than 5 percent rock fragments; neutral; clear wavy boundary.

Bt3—15 to 24 inches; yellowish red (5YR 4/6) clay; strong medium subangular blocky structure; firm; few very fine roots; many prominent clay films on faces of peds and in root channels; few manganese coatings on faces of peds; 10 percent highly weathered, red and yellow siltstone and limestone rock fragments; neutral; abrupt irregular boundary.

R—24 inches; limestone bedrock with a very thin, highly weathered, white, powdery coating.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Moderately acid to slightly alkaline
Content of rock fragments: 0 to 5 percent, by volume, in the A horizon and 0 to 10 percent, by volume, in the B horizon

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam, loam, silty clay loam, or silty clay

BA horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or loam

Bt horizon:
Hue—2.5YR, 5YR, or 7.5YR
Value—4 or 5
Chroma—4 to 8
Texture—silty clay loam, silty clay, or clay

Cateache Series

Depth class: Moderately deep (fig. 23)
Drainage class: Well drained
Permeability: Moderate
Landscape position: Ridgetops, benches, and side slopes
Parent material: Calcareous siltstone, shale, and fine grained sandstone; in areas of the Maccrady, Bluefield, and Hinton geologic deposits
Slope range: 3 to 55 percent
Classification: Fine-loamy, mixed, active, mesic Ultic Hapludalfs

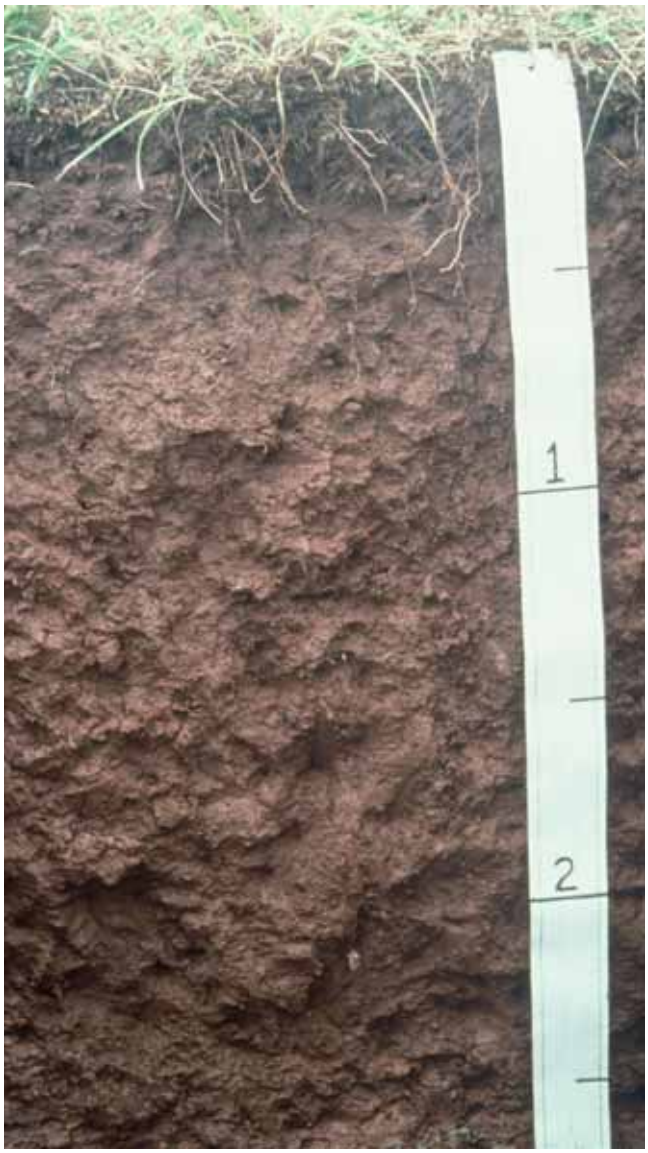

Figure 23.—Representative profile of a Cateache soil. An accumulation of clay is between depths of 8 and 24 inches. Dusky red, highly weathered sandstone bedrock is at a depth of about 30 inches. Depth is marked in feet.

Representative Pedon

Cateache silt loam, 35 to 55 percent slopes, very stony, in a wooded area on Bennett Mountain; about 2 miles southwest of the entrance to the Mountain View Farms subdivision; USGS Dawson topographic quadrangle; lat. 37 degrees 49 minutes 01 second N. and long. 80 degrees 40 minutes 49 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.

A—1 to 5 inches; dark brown (7.5YR 3/4) silt loam; weak fine granular structure; very friable; common very fine, fine, and medium roots; 5 percent rock fragments; very strongly acid; clear wavy boundary.

BA—5 to 11 inches; dark reddish brown (5YR 3/4) silt loam; moderate medium subangular blocky structure; friable; common very fine and fine and few

medium and coarse roots; 5 percent rock fragments; strongly acid; clear wavy boundary.
Bt1—11 to 19 inches; dark reddish brown (5YR 3/4) channery silty clay loam; moderate medium subangular blocky structure; friable; common very fine and fine roots; common distinct clay films on faces of peds; 20 percent rock fragments; strongly acid; clear wavy boundary.
Bt2—19 to 29 inches; dark reddish brown (5YR 3/4) very channery silty clay loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; common distinct clay films on faces of peds; 40 percent rock fragments; strongly acid; clear wavy boundary.
C—29 to 36 inches; reddish brown (5YR 5/4) extremely channery silty clay loam; massive; friable; few very fine roots; 70 percent rock fragments; strongly acid; clear irregular boundary.
Cr—36 inches; brown (7.5YR 4/2), fractured siltstone.

Range in Characteristics

Thickness of the solum: 18 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Very strongly acid to moderately acid
Content of rock fragments: 5 to 10 percent, by volume, in the A horizon; 5 to 20 percent, by volume, in the BA horizon; 10 to 45 percent, by volume, in the Bt1 horizon; 40 to 70 percent, by volume, in the Bt2 horizon; 35 to 80 percent, by volume, in the C horizon

A horizon:
Hue—5YR or 7.5YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam or loam

BA horizon:
Hue—2.5YR or 5YR
Value—3 to 5
Chroma—3 or 4
Texture—silt loam

Bt horizon:
Hue—2.5YR or 5YR
Value—3 or 4
Chroma—3 to 6
Texture—silt loam or silty clay loam

C horizon:
Hue—2.5YR or 5YR
Value—3 to 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

Chavies Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Landscape position: Low stream terraces, along Greenbrier River and its larger tributaries

Parent material: Alluvium derived from soils underlain by sandstone, siltstone, and limestone
Slope range: 0 to 3 percent
Classification: Coarse-loamy, mixed, active, mesic Ultic Hapludalfs

Representative Pedon

Chavies fine sandy loam, in a cultivated field, along the Greenbrier River west of Caldwell; about 0.4 mile northeast of the intersection of U.S. Route 60 and West Virginia Route 38 and 40 feet northwest of West Virginia Route 38; USGS Lewisburg topographic quadrangle; lat. 37 degrees 47 minutes 12 seconds N. and 80 degrees 23 minutes 43 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3) fine sandy loam; weak fine and medium granular structure; very friable; few very fine and fine roots; less than 5 percent rock fragments; moderately acid; clear smooth boundary.
AB—5 to 10 inches; brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure; very friable; few very fine and fine roots; less than 5 percent rock fragments; slightly acid; clear wavy boundary.
Bt1—10 to 25 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; few very fine and fine roots; few distinct clay films on faces of peds and in pores; less than 5 percent rock fragments; slightly acid; clear wavy boundary.
Bt2—25 to 45 inches; brown (7.5YR 4/4) loam; weak medium subangular blocky structure; friable; few very fine roots; common prominent clay films on faces of peds and in pores; less than 5 percent rock fragments; slightly acid; gradual wavy boundary.
BC—45 to 55 inches; brown (7.5YR 4/4) loam; weak medium and coarse subangular blocky structure; friable; less than 5 percent rock fragments; slightly acid; gradual wavy boundary.
C—55 to 65 inches; brown (7.5YR 5/4) loam; few fine prominent grayish brown (10YR 5/2) redoximorphic depletions; massive; friable; less than 5 percent rock fragments; moderately acid.

Range in Characteristics

Thickness of the solum: 30 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: In unlimed areas, very strongly acid to neutral in the A and Bt horizons and very strongly acid to slightly acid in the BC and C horizons
Content of rock fragments: 0 to 15 percent, by volume, in the solum and 0 to 30 percent, by volume, in the substratum
Kind of rock fragments: Dominantly sandstone pebbles

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—fine sandy loam, sandy loam, loam, silt loam, or loamy sand

Bt horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—fine sandy loam, loam, or silt loam

C horizon:
Hue—5YR, 7.5YR, or 10YR

Value—4 to 6
Chroma—3 to 6
Texture—fine sandy loam, sandy loam, loam, or silt loam

Cookport Series

Depth class: Deep
Drainage class: Moderately well drained
Permeability: Slow
Landscape position: Ridgetops
Parent material: Sandstone and some interbedded shales; mainly in areas on the Pocono and Bluefield geologic deposits
Slope range: 3 to 8 percent
Classification: Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults

Representative Pedon

Cookport loam, 3 to 8 percent slopes, in a wooded area on Muddy Creek Mountain; about 2.7 miles east-northeast of the intersection of West Virginia Routes 12 and 40 and about 0.5 mile southeast of West Virginia Route 40; USGS Fort Spring topographic quadrangle; lat. 37 degrees 44 minutes 47 seconds N. and long. 80 degrees 35 minutes 26 seconds W.

Oe—0 to 1 inch; moderately decomposed leaf litter.
A—1 to 3 inches; dark grayish brown (10YR 4/2) loam; moderate medium granular structure; very friable; few coarse and very coarse and many very fine, fine, and medium roots; very strongly acid; clear wavy boundary.
BA—3 to 9 inches; brown (10YR 4/3) loam; moderate fine subangular blocky structure; friable; few coarse and very coarse and many very fine, fine, and medium roots; very strongly acid; clear wavy boundary.
Bt1—9 to 17 inches; yellowish brown (10YR 5/6) loam; moderate medium and coarse subangular blocky structure; friable; few very fine, coarse, and very coarse and many fine and medium roots; few faint clay films on faces of peds and in pores; very strongly acid; clear wavy boundary.
Bt2—17 to 22 inches; yellowish brown (10YR 5/4) loam; common medium faint brown (10YR 5/3) and common medium distinct grayish brown (10YR 5/2) redoximorphic depletions and common medium distinct brownish yellow (10YR 6/6) redoximorphic concentrations; moderate medium subangular blocky structure; friable; few very fine, fine, and medium roots; few distinct clay films on faces of peds and in pores; very strongly acid; abrupt wavy boundary.
Btx—22 to 42 inches; brown (10YR 5/3) loam; common medium faint grayish brown (10YR 5/2) redoximorphic depletions and common medium distinct brownish yellow (10YR 6/6) redoximorphic concentrations in vertical streaks throughout the horizon; moderate coarse and very coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots along faces of peds; few faint clay films in pores; very strongly acid; clear wavy boundary.
C—42 to 49 inches; mixed yellowish brown (10YR 5/6), light yellowish brown (10YR 6/4), strong brown (7.5YR 4/6), and light brownish gray (10YR 6/2) loam; massive; firm; 10 percent rock fragments; very strongly acid; abrupt wavy boundary.
R—49 inches; hard, gray sandstone.

Range in Characteristics

Thickness of the solum: 28 to 40 inches
Depth to bedrock: 40 to 60 inches
Reaction: Strongly acid to extremely acid

Content of rock fragments: 0 to 30 percent, by volume, throughout the soil profile

A horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—2 to 4
Chroma—2 or 3
Texture—silt loam, loam, or sandy loam

BA horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—3 or 4
Texture—loam, silt loam, or sandy loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—4 to 8
Texture—loam, sandy loam, sandy clay loam, or clay loam

Btx horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 8
Texture—loam or sandy loam

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam or sandy loam

Culleoka Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Ridgetops, benches, and side slopes; mainly west of the Greenbrier River valley
Parent material: Calcareous siltstone, shale, and fine grained sandstone; in areas of the Greenbrier and Bluefield geologic deposits
Slope range: 3 to 55 percent
Classification: Fine-loamy, mixed, active, mesic Ultic Hapludalfs

Representative Pedon

Culleoka loam, 35 to 55 percent slopes, very stony, in a wooded area, on a southwest-facing slope on Miller Ridge; about 1.9 miles north of the intersection of U.S. Route 60 and West Virginia Route 60/15 (or 2.5 miles on West Virginia Route 60/15 and 30 feet east of the road); USGS Williamsburg topographic quadrangle; lat. 37 degrees 53 minutes 45 seconds N. and long. 80 degrees 29 minutes 08 seconds W.

Oi—0 to 1 inch; slightly decomposed hardwood leaf litter.
Oe—1 to 2 inches; moderately decomposed forest litter.
A—2 to 3 inches; very dark brown (10YR 2/2) loam; weak very fine and fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 10 percent rock fragments; moderately acid; abrupt wavy boundary.

BA—3 to 5 inches; brown (10YR 4/3) channery loam; weak fine subangular blocky structure parting to weak fine granular; very friable; many very fine, fine, medium, and coarse roots; 15 percent rock fragments; strongly acid; clear wavy boundary.
Bw—5 to 9 inches; yellowish brown (10YR 5/4) channery loam; weak fine subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 20 percent rock fragments; strongly acid; clear wavy boundary.
Bt1—9 to 21 inches; strong brown (7.5YR 5/6) channery silt loam; moderate fine and medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; few faint clay films in pores; 20 percent rock fragments; strongly acid; gradual wavy boundary.
Bt2—21 to 29 inches; strong brown (7.5YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; firm; common very fine, fine, medium, and coarse roots; few distinct clay films in pores and on rock fragments; 30 percent rock fragments; strongly acid; clear wavy boundary.
C—29 to 35 inches; yellowish brown (10YR 5/6) extremely channery silt loam; massive; friable; few fine and medium roots; 65 percent rock fragments; strongly acid; clear wavy boundary.
Cr—35 inches; olive (5Y 5/4) siltstone.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: In unlimed areas, strongly acid or moderately acid in the A and B horizons and strongly acid to slightly acid in the C horizon
Content of rock fragments: 0 to 20 percent, by volume, in the A horizon; 10 to 35 percent, by volume, in the BA, Bw, and Bt horizons; and 25 to 80 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—2 to 4
Chroma—2 or 3
Texture—loam or silt loam

BA, Bw, and Bt horizons:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam, loam, or silty clay loam

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—silt loam or silty clay loam

Dekalb Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Rapid
Landscape position: Uplands
Parent material: Acid material derived from sandstone; in areas of the Chemung, Hampshire, Pocono, Clinton, Tuscarora, and Oriskany geologic deposits
Slope range: 3 to 80 percent
Classification: Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Representative Pedon

Dekalb channery sandy loam, in a wooded area of Berks-Dekalb complex, 35 to 55 percent slopes, very stony, on Greenbrier Mountain; about 3 miles northwest of the intersection of West Virginia Routes 36 and 36/2 (or 3.7 miles on West Virginia Route 36/2 and then on a private timber road); USGS White Sulphur Springs topographic quadrangle; lat. 37 degrees 51 minutes 17 seconds N. and long. 80 degrees 19 minutes 05 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
A—1 to 2 inches; very dark brown (10YR 2/2) channery sandy loam; weak very fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 30 percent rock fragments; very strongly acid; abrupt wavy boundary.
E—2 to 4 inches; brown (10YR 5/3) channery sandy loam; weak very fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 30 percent rock fragments; very strongly acid; abrupt wavy boundary.
BE—4 to 8 inches; yellowish brown (10YR 5/4) very channery loam; weak very fine subangular blocky structure parting to weak very fine granular; very friable; many very fine, fine, medium, and coarse roots; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bw1—8 to 15 inches; brownish yellow (10YR 6/6) very channery loam; weak very fine and fine subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 35 percent rock fragments; very strongly acid; clear wavy boundary.
Bw2—15 to 23 inches; yellowish brown (10YR 5/8) very channery sandy loam; weak fine and medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; 50 percent rock fragments; very strongly acid; clear wavy boundary.
C—23 to 34 inches; strong brown (7.5YR 5/6) extremely channery sandy loam; massive; friable; few fine and medium roots; 75 percent rock fragments; very strongly acid; clear wavy boundary.
R—34 inches; fractured, gray (10YR 6/1), medium grained sandstone.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 10 to 30 percent, by volume, in the A horizon; 10 to 60 percent, by volume, in the B horizon; and 50 to 90 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—loam, fine sandy loam, or sandy loam

E horizon:
Hue—10YR
Value—5 or 6
Chroma—1 to 4
Texture—loam, fine sandy loam, or sandy loam

Bw horizon:
Hue—7.5YR or 10YR
Value—5 to 8
Chroma—4 to 8

Texture—loam, fine sandy loam, or sandy loam

C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 6
Texture—sandy loam or loamy sand

Dunning Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
Landscape position: Depressions
Parent material: Limestone and siltstone; in areas of the Greenbrier geologic deposit
Slope range: 0 to 3 percent
Classification: Fine, mixed, active, mesic Fluvaquentic Endoaquolls

Representative Pedon

Dunning silty clay loam, karst, in a pasture; about 400 feet northeast of the intersection of U.S. Route 60 and West Virginia Route 60/12; USGS Lewisburg topographic quadrangle; lat. 37 degrees 51 minutes 17 seconds N. and long. 80 degrees 28 minutes 27 seconds W.

A—0 to 10 inches; black (N 2.5/) silty clay loam; common fine distinct yellowish red (5YR 4/6) redoximorphic concentrations; weak medium subangular blocky structure parting to moderate coarse and very coarse granular; friable; many fine and very fine roots; slightly acid; clear wavy boundary.

Bg1—10 to 20 inches; very dark gray (10YR 3/1) silty clay loam; few fine prominent yellowish red (5YR 4/6) redoximorphic concentrations; moderate medium subangular blocky structure; friable, sticky and plastic; common fine and very fine roots; slightly alkaline; clear wavy boundary.

Bg2—20 to 28 inches; gray (10YR 5/1) clay; common medium distinct yellowish brown (10YR 5/6) redoximorphic concentrations; weak medium subangular blocky structure; firm, sticky and plastic; few fine and very fine roots; common medium prominent black (N 2.5/) coatings on faces of peds; less than 5 percent rock fragments; slightly alkaline; clear wavy boundary.

BCg—28 to 38 inches; gray (2.5Y 5/1) clay; few medium distinct yellowish brown (10YR 5/6) redoximorphic concentrations; weak medium subangular blocky structure; firm, sticky and plastic; few very fine roots; 10 percent rock fragments; slightly alkaline; clear wavy boundary.

Cg1—38 to 46 inches; gray (2.5Y 5/1) clay; common medium distinct strong brown (7.5YR 5/8) redoximorphic concentrations; massive; firm, sticky and plastic; 10 percent rock fragments; slightly alkaline; clear wavy boundary.

Cg2—46 to 65 inches; gray (2.5Y 5/1) gravelly clay; many medium distinct light olive brown (2.5Y 5/6) redoximorphic concentrations; massive; firm, sticky and plastic; 15 percent rock fragments; slightly alkaline; abrupt wavy boundary.

R—65 inches; a thin layer of yellowish brown (10YR 5/8) siltstone overlying gray limestone.

Range in Characteristics

Thickness of the solum: 30 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Moderately acid to slightly alkaline

Content of rock fragments: 0 to 15 percent, by volume, in the solum and 0 to 30 percent, by volume, in the substratum

A horizon:
Hue—10YR, 2.5Y, or 5Y or is neutral
Value—2 or 3
Chroma—0 to 3
Texture—silt loam, silty clay loam, or silty clay

Bg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y or is neutral
Value—3 to 6
Chroma—0 to 2
Texture—clay, silty clay, or silty clay loam

BCg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y or is neutral
Value—3 to 6
Chroma—0 to 2
Texture—clay, silty clay, or silty clay loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y or is neutral
Value—4 to 6
Chroma—0 to 2
Texture—clay, silty clay, or silty clay loam

Elliber Series

Depth class: Very deep (fig. 24)
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Side slopes
Parent material: Chert interbedded with shale and sandstone; in areas of the Huntersville Chert geologic deposit
Slope range: 35 to 55 percent
Classification: Loamy-skeletal, mixed, semiactive, mesic Typic Hapludults

Representative Pedon

Elliber extremely channery silt loam, 35 to 55 percent slopes, in a wooded area; in Pocahontas County; about 5,000 feet north and 86 degrees east of the intersection of County Route 21 and Violet Road, south of Huntersville; USGS Marlinton topographic quadrangle; lat. 38 degrees 08 minutes 41 seconds N. and long. 80 degrees 02 minutes 45 seconds W.

Oi—0 to 2 inches; slightly decomposed forest litter.
A—2 to 4 inches; very dark grayish brown (10YR 3/2) extremely channery silt loam; weak fine granular structure; friable; many very fine, fine, medium, and coarse roots; 65 percent chert fragments; extremely acid; abrupt smooth boundary.
BA—4 to 7 inches; yellowish brown (10YR 5/4) extremely channery silt loam; weak fine granular structure; friable; many very fine, fine, medium, and coarse roots; 65 percent chert fragments; extremely acid; abrupt wavy boundary.
Bw1—7 to 12 inches; yellowish brown (10YR 5/4) very channery loam; weak fine granular structure; friable; many very fine, fine, and medium roots; 60 percent chert fragments; very strongly acid; clear smooth boundary.

Figure 24.—Representative profile of an Elliber soil. Fragments of chert are throughout the profile but are most easily seen at a depth of about 24 inches. An accumulation of clay begins at a depth of about 30 inches and extends to a depth of more than 65 inches. Depth is marked in feet.

Bw2—12 to 25 inches; yellowish brown (10YR 5/6) extremely channery loam; weak fine granular structure; friable; many very fine, fine, and medium and few coarse roots; 75 percent chert fragments; very strongly acid; abrupt wavy boundary.

Bw3—25 to 32 inches; yellowish brown (10YR 5/4) very channery loam; weak fine subangular blocky structure parting to weak fine granular; friable; many very fine and common fine roots; 45 percent chert fragments; very strongly acid; clear wavy boundary.
Bt1—32 to 37 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine subangular blocky structure; friable; few very fine, fine, medium, and coarse roots; few distinct clay films on faces of peds and rock fragments; 55 percent chert fragments; extremely acid; clear smooth boundary.
Bt2—37 to 43 inches; yellowish brown (10YR 5/4) very channery loam; weak fine subangular blocky structure parting to weak fine granular; friable; few very fine, fine, and medium roots; few faint clay films on rock fragments and in root channels; 50 percent chert fragments; extremely acid; gradual wavy boundary.
Bt3—43 to 50 inches; yellowish brown (10YR 5/4) very channery loam; weak fine and medium subangular blocky structure; friable; few very fine, fine, and medium roots; few faint clay films on faces of peds; 50 percent chert fragments; very strongly acid; abrupt smooth boundary.
Bt4—50 to 64 inches; yellowish brown (10YR 5/4) very channery clay loam; moderate fine and medium subangular blocky structure; friable; few fine roots; common faint clay films on faces of peds; 60 percent chert fragments; very strongly acid; abrupt wavy boundary.
Bt5—64 to 67 inches; yellowish brown (10YR 5/6) very channery clay loam; weak fine and medium subangular blocky structure; friable; few fine roots; common distinct clay films on faces of peds; 40 percent chert fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 70 inches
Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 40 to 65 percent, by volume, in the A horizon; 40 to 80 percent, by volume, in the B horizon; averages more than 35 percent, by volume, in the particle-size control section

A horizon:
Hue—10YR
Value—3
Chroma—1 or 2
Texture—loam, sandy loam, or silt loam

B horizon:
Hue—10YR
Value—5 or 6
Chroma—4 to 8
Texture—silt loam, loam, or clay loam

Ernest Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow or moderately slow
Landscape position: Footslopes and benches
Parent material: Colluvium derived from acid shale, siltstone, and small amounts of sandstone; mainly on the Brallier geologic deposit
Slope range: 3 to 15 percent
Classification: Fine-loamy, mixed, superactive, mesic Aquic Fragiudults

Representative Pedon

Ernest silt loam, 3 to 8 percent slopes, in an area of woodland; near White Sulphur Springs.

Oi—0 to 1.75 inches; hardwood leaf litter.
Oe—1.75 to 2 inches; partly decomposed leaf litter.
A—2 to 4 inches; very dark gray (10YR 3/1) silt loam; weak fine granular structure; very friable; 10 percent rock fragments; many very fine, fine, medium, and coarse roots; strongly acid; clear wavy boundary.
BA—4 to 10 inches; brown (10YR 5/3) silt loam; weak fine granular structure and weak fine subangular blocky; friable; 10 percent rock fragments; common very fine, fine, medium, and coarse roots; very strongly acid; clear wavy boundary.
Bw—10 to 16 inches; yellowish brown (10YR 5/6) channery silt loam; weak fine subangular blocky structure; friable; 15 percent rock fragments; common fine, medium, and coarse roots; strongly acid; clear wavy boundary.
Bt1—16 to 23 inches; yellowish brown (10YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; friable; 15 percent rock fragments; few fine, medium, and coarse roots; common faint clay films on faces of peds and in pores; strongly acid; gradual wavy boundary.
Bt2—23 to 28 inches; yellowish brown (10YR 5/4) channery silty clay loam; moderate medium and coarse subangular blocky structure; friable to firm; common medium distinct light brownish gray (10YR 6/2) redoximorphic depletions and strong brown (7.5YR 5/8) redoximorphic concentrations; 20 percent rock fragments; few very fine, fine, medium, and coarse roots; common faint clay films on faces of peds and in pores; strongly acid; gradual wavy boundary.
Btx—28 to 44 inches; variegated light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8) channery silt loam; weak very coarse prismatic structure parting to weak medium platy; firm; 20 percent rock fragments; few faint clay films on faces of peds; few medium roots; strongly acid; gradual wavy boundary.
C—44 to 62 inches; variegated light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8) channery silt loam; massive; very firm; 25 percent rock fragments; strongly acid.

Range in Characteristics

Thickness of the solum: 36 to 72 inches
Depth to bedrock: More than 60 inches
Reaction: Strongly acid or very strongly acid
Content of rock fragments: 0 to 25 percent, by volume, in the A horizon; 0 to 30 percent, by volume, in the BA, Bw, and Bt horizons; 5 to 40 percent, by volume, in the Btx horizon; and 5 to 50 percent, by volume, in the C horizon

A horizon:
Hue—7.5YR or 10YR
Value—2 to 5
Chroma—1 to 4
Texture—silt loam

BA, Bw, and Bt horizons:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—silt loam or silty clay loam

Bx horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6

Chroma—2 to 8
Texture—silt loam, loam, or silty clay loam

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—2 to 8
Texture—loam, silt loam, clay loam, silty clay loam, or silty clay

Faywood Series

Depth class: Moderately deep (fig. 25)
Drainage class: Well drained
Permeability: Slow or moderately slow
Landscape position: Uplands
Parent material: Limestone interbedded with thin layers of shale and siltstone; in areas of the Helderberg, Cayugan, and McKenzie geologic deposits
Slope range: 15 to 55 percent
Classification: Fine, mixed, active, mesic Typic Hapludalfs

Representative Pedon

Faywood silt loam, in a pasture; in Pocahontas County; about 1 mile north and 40 degrees west of the intersection of West Virginia Routes 92 and 84 at Frost; USGS Clover Lick topographic quadrangle; lat. 38 degrees 16 minutes 55 seconds N. and long. 79 degrees 53 minutes 34 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; many very fine and fine roots; 2 percent rock fragments; slightly acid; clear wavy boundary.
BA—5 to 8 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure parting to moderate fine granular; friable; common fine roots; 5 percent rock fragments; slightly acid; clear wavy boundary.
Bt—8 to 21 inches; strong brown (7.5YR 5/6) silty clay loam; strong fine and medium angular blocky structure; firm; few fine roots; many prominent clay films on faces of peds and in pores; 5 percent rock fragments; slightly acid; gradual wavy boundary.
C—21 to 28 inches; strong brown (7.5YR 5/6) clay; olive (5Y 5/4) and black (10YR 2/1), highly weathered siltstone fragments; massive; firm; 10 percent rock fragments; slightly alkaline; clear wavy boundary.
Cr—28 to 30 inches; light olive brown (2.5Y 5/4), highly weathered siltstone.
R—30 inches; limestone.

Range in Characteristics

Thickness of the solum: 20 to 30 inches
Depth to bedrock: 20 to 40 inches
Reaction: Slightly acid to slightly alkaline
Content of rock fragments: 0 to 5 percent, by volume, in the A horizon; 0 to 15 percent, by volume, in the B horizon; and 5 to 15 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam, silty clay loam, or silty clay

Figure 25.—Representative profile of a Faywood soil. Clay has accumulated in layers in the subsoil, directly below the surface soil. These layers have strong structure. The depth to limestone bedrock ranges from 20 to 40 inches. It varies significantly within short distances. Depth is marked in feet.

BA horizon:
Hue—10YR
Value—4 or 5
Chroma—4
Texture—silt loam

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6
Chroma—4 to 6
Texture—silty clay loam, silty clay, or clay

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture—clay or silty clay

Fluvaquents

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Varies
Landscape position: Flood plains, in minor drainageways at elevations above 3,000 feet
Parent material: Alluvium derived from soils underlain by siltstone, sandstone, and limestone
Slope range: 0 to 3 percent
Classification: Fluvaquents

Representative Pedon

A typical pedon for Fluvaquents is not given because the soils vary so much.

Range in Characteristics

Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid

A horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 to 3
Texture—loam, silt loam, or sandy loam

Underlying horizons:
Hue—2.5Y, 5Y, or 5GY
Value—4 to 6
Chroma—1 to 3
Texture—loam, sandy loam, loamy sand, clay loam, or sandy clay loam

Frankstown Series

Depth class: Deep or very deep
Drainage class: Well drained
Permeability: Moderate
Landscape position: Gently sloping to steep uplands
Parent material: Siliceous limestone and interbedded limy shale; in areas of the Greenbrier geologic deposit
Slope range: 3 to 35 percent
Classification: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Representative Pedon

Frankstown silt loam, karst, 3 to 8 percent slopes, in a recently developed pasture east of Frankford; about 0.1 mile north-northwest of the intersection of West Virginia

Routes 21 and 15; USGS Anthony topographic quadrangle; lat. 37 degrees 55 minutes 10 seconds N. and long. 80 degrees 22 minutes 27 seconds W.

A—0 to 1 inch; dark brown (10YR 3/3) silt loam; moderate medium granular structure; friable; many very fine and fine roots; 5 percent rock fragments; strongly acid; abrupt wavy boundary.

E—1 to 2 inches; brown (10YR 5/3) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; common medium dark brown (10YR 3/3) krotovinas; 5 percent rock fragments; strongly acid; abrupt wavy boundary.

BE—2 to 4 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable to firm; few fine roots; common medium dark brown (10YR 3/3) krotovinas; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bw—4 to 12 inches; brownish yellow (10YR 6/6) silt loam; moderate fine and medium subangular blocky structure; friable; few very fine and fine roots; few medium dark brown (10YR 3/3) krotovinas; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bt1—12 to 19 inches; brownish yellow (10YR 6/6) channery silty clay loam; moderate medium subangular blocky structure; friable to firm; few very fine and fine roots; common distinct clay films on faces of peds and in pores; few medium dark brown (10YR 3/3) krotovinas; 15 percent rock fragments; very strongly acid; clear wavy boundary.

Bt2—19 to 31 inches; brownish yellow (10YR 6/8) channery silty clay loam; moderate medium and coarse subangular blocky structure; friable; many prominent clay films on faces of peds and in pores; 25 percent strong brown (7.5YR 5/6), light yellowish brown (2.5Y 6/4), and pale yellow (2.5Y 7/3), highly weathered rock fragments; very strongly acid; gradual wavy boundary.

BC—31 to 35 inches; strong brown (7.5YR 5/8) very channery silt loam; moderate medium subangular blocky structure; friable; 35 percent light yellowish brown (10YR 6/4), highly weathered rock fragments; very strongly acid; gradual wavy boundary.

C—35 to 45 inches; brownish yellow (10YR 6/8) very channery silt loam; common thin reddish yellow (7.5YR 6/8) layers of silty clay loam in streaks throughout the horizon; massive; friable; 40 percent brown (7.5YR 5/4) and pale brown (10YR 6/3), highly weathered rock fragments; very strongly acid; abrupt wavy boundary.

Cr—45 inches; weathered, strong brown (7.5YR 5/8) siltstone.

Range in Characteristics

Thickness of the solum: 40 to 60 inches

Depth to bedrock: 40 to more than 60 inches

Reaction: In unlimed areas, very strongly acid to moderately acid

Content of rock fragments: 0 to 25 percent, by volume, in the A and E horizons; 0 to 40 percent, by volume, in the BE, Bw, Bt, and BC horizons; and 20 to 50 percent, by volume, in the C horizon

Kind of rock fragments: Limestone, siltstone, and chert

Ap horizon:

Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

A horizon:

Hue—10YR
Value—3

Chroma—2 or 3
Texture—silt loam

E horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 or 3
Texture—silt loam or loam

BE horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silt loam or loam

Bw, Bt, and BC horizons:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture—silt loam or silty clay loam

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—6 to 8
Texture—silt loam ranging to clay
Note—stratified with different colors and textures in some pedons

Frederick Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landscape position: Uplands
Parent material: Limestone; in areas of the Greenbrier geologic deposit
Slope range: 3 to 60 percent
Classification: Fine, mixed, semiactive, mesic Typic Paleudults

Representative Pedon

Frederick silt loam, in a pastured area of Frederick-Caneyville complex, karst, 15 to 35 percent slopes, very rocky; about 3.5 miles northwest of Lewisburg; USGS Asbury topographic quadrangle; lat. 37 degrees 50 minutes 21 seconds N. and long. 80 degrees 30 minutes 11 seconds W.

A—0 to 4 inches; dark yellowish brown (10YR 3/4) silt loam; moderate fine and medium granular structure; friable; many very fine, fine, and medium roots; slightly acid; clear wavy boundary.
BA—4 to 8 inches; brown (7.5YR 4/4) silt loam; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; few fine and medium and common very fine roots; slightly acid; clear wavy boundary.
Bt1—8 to 23 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium and coarse subangular blocky structure; friable; few very fine and fine roots; common faint clay films in pores and few distinct clay films on faces of peds; common fine manganese nodules; common fine and medium tubular krotovinas; slightly acid; clear wavy boundary.

Bt2—23 to 29 inches; yellowish red (5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct clay films on faces of peds and in pores; common fine manganese nodules; common fine and medium tubular krotovinas; neutral; clear wavy boundary.
Bt3—29 to 44 inches; yellowish red (5YR 4/6) channery clay; strong medium and coarse subangular blocky structure; firm; few very fine, fine, and medium roots; many prominent clay films on faces of peds and in pores; few fine manganese nodules; few medium tubular krotovinas; 15 percent limestone fragments; neutral; gradual wavy boundary.
Bt4—44 to 57 inches; red (2.5YR 4/6) channery clay; strong medium and coarse subangular blocky structure; firm; common prominent light olive brown (2.5Y 5/4) coatings on faces of peds and in pores; many prominent clay films on faces of peds and in pores; common fine manganese coatings; 15 percent limestone fragments; neutral; gradual wavy boundary.
Bt5—57 to 63 inches; red (2.5YR 4/6) channery clay; moderate medium subangular blocky structure; firm; many prominent light olive brown (2.5Y 5/4) coatings on faces of peds and in pores; many prominent clay films on faces of peds and in pores; many fine manganese coatings; 15 percent limestone fragments and 10 percent highly weathered siltstone fragments; neutral; gradual wavy boundary.
C—63 to 80 inches; mixed red (2.5YR 4/6) and light olive brown (2.5Y 5/4) channery silty clay; massive; firm; many prominent clay films on faces of peds and in pores; many fine manganese coatings; 15 percent limestone fragments; neutral.

Range in Characteristics

Thickness of the solum: More than 60 inches
Depth to bedrock: More than 72 inches
Reaction: Strongly acid to slightly acid in the upper part of the profile and strongly acid to neutral in the lower part
Content of rock fragments: 0 to 60 percent, by volume, in the upper part of the profile and as much as 35 percent, by volume, in the lower part

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam

BA horizon:
Hue—7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam

Bt horizon:
Hue—2.5YR, 5YR, or 7.5YR
Value—4 or 5
Chroma—4 to 8
Texture—silty clay loam, silty clay, or clay

C horizon:
Hue—2.5YR, 5YR, 7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—silty clay or clay

Gauley Series

Depth class: Moderately deep (fig. 26)
Drainage class: Well drained
Permeability: Moderately rapid
Landscape position: Broad ridgetops and upper side slopes
Parent material: Acid sandstone; west of the Greenbrier River, at elevations above 4,000 feet; in areas of the Kanawha and New River geologic deposits
Slope range: 3 to 35 percent but dominantly 3 to 15 percent
Classification: Loamy-skeletal, siliceous, superactive, frigid Typic Haplorthods

Figure 26.—Representative profile of a Gauley soil. Organic matter and iron and aluminum compounds have been leached from the light colored layer that is at a depth of about 6 inches and have been deposited in the upper part of the subsoil. Depth is marked in feet.

Representative Pedon

Gauley channery sandy loam, in a young stand of red spruce; in Pocahontas County; about 1.25 miles north and 28 degrees east of the Bald Knob fire tower on Back Allegheny Mountain; USGS Cass topographic quadrangle; lat. 38 degrees 27 minutes 50 seconds N. and long. 79 degrees 55 minutes 15 seconds W.

Oi—0 to 3 inches; slightly decomposed forest litter.
Oa—3 to 6 inches; black (5YR 2.5/1), highly decomposed forest litter.
A—6 to 8 inches; black (N 2.5/) channery sandy loam; weak fine and medium granular structure; friable; many fine, medium, and coarse roots; 30 percent rock fragments; very strongly acid; abrupt wavy boundary.
E—8 to 12 inches; brown (7.5YR 5/2) very channery sandy loam; weak fine and medium granular structure; firm; few fine, medium, and coarse roots; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bhs—12 to 15 inches; dark reddish brown (5YR 3/2) very channery sandy loam; weak medium subangular blocky structure; firm; moderately smeary; few fine, medium, and coarse roots; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bs—15 to 26 inches; strong brown (7.5YR 5/6) very channery loam; weak fine and medium subangular blocky structure; friable; weakly smeary; 40 percent rock fragments; very strongly acid; gradual wavy boundary.
C—26 to 38 inches; yellowish brown (10YR 5/6) extremely channery loam; massive; friable; 70 percent rock fragments; very strongly acid; abrupt wavy boundary.
R—38 inches; olive gray (5Y 4/2) sandstone bedrock.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 5 to 90 percent, by volume, in the individual horizons; averages from 35 to 60 percent, by volume, in the particle-size control section

A horizon:
Hue—10YR or is neutral
Value—2.5 or 2
Chroma—0 or 1
Texture—sandy loam

E horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 to 6
Chroma—1 or 2
Texture—loam, sandy loam, or loamy sand

Bhs horizon:
Hue—5YR, 7.5YR, or 10YR
Value—2 to 4
Chroma—1 to 4
Texture—loam or sandy loam

Bs horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam or sandy loam

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—loam, sandy loam, or loamy sand

Gilpin Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Ridgetops, benches, and side slopes, mainly west of the Greenbrier River valley
Parent material: Siltstone, shale, and fine grained sandstone; in areas of the Princeton, Bluestone, Pocahontas, Kanawha, and New River geologic deposits
Slope range: 3 to 55 percent
Classification: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Representative Pedon

Gilpin channery loam, in a wooded area of Macove-Gilpin complex, 35 to 55 percent slopes, very stony, on a southeast-facing slope; about 0.4 mile northwest of Crichton School; USGS Quinwood topographic quadrangle; lat. 38 degrees 03 minutes 30 seconds N. and long. 80 degrees 42 minutes 55 seconds W.

Oi—0 to 1 inch; slightly decomposed hardwood leaf litter.
Oe—1 to 2 inches; moderately decomposed forest litter.
A—2 to 3 inches; very dark grayish brown (10YR 3/2) channery loam; strong fine and medium granular structure; very friable; many very fine, fine, medium, and coarse roots; 15 percent rock fragments; very strongly acid; abrupt wavy boundary.
E—3 to 5 inches; brown (10YR 4/3) channery loam; strong fine and medium subangular blocky structure parting to strong fine and medium granular; friable; many very fine, fine, medium, and coarse roots; 15 percent rock fragments; strongly acid; abrupt wavy boundary.
Bt1—5 to 15 inches; yellowish brown (10YR 5/6) channery loam; moderate medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; few faint clay films in pores; 30 percent rock fragments; strongly acid; clear wavy boundary.
Bt2—15 to 24 inches; yellowish brown (10YR 5/6) channery loam; moderate medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; few faint clay films in pores and on rock fragments; 30 percent rock fragments; strongly acid; clear wavy boundary.
BC—24 to 27 inches; yellowish brown (10YR 5/6) very channery loam; moderate medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; 40 percent rock fragments; strongly acid; clear wavy boundary.
C—27 to 36 inches; yellowish brown (10YR 5/6) extremely channery loam; massive; firm; common very fine, fine, medium, and coarse roots; 65 percent rock fragments; strongly acid; clear wavy boundary.
Cr—36 inches; grayish brown (2.5Y 5/2) siltstone and fine grained sandstone.

Range in Characteristics

Thickness of the solum: 20 to 36 inches
Depth to bedrock: 20 to 40 inches
Reaction: In unlimed areas, extremely acid to strongly acid throughout

Content of rock fragments: 5 to 40 percent, by volume, in the A horizon; 10 to 15 percent, by volume, in the E horizon; 5 to 40 percent, by volume, in the Bt horizon; and 30 to 90 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 4
Texture—silt loam

E horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 8
Texture—silt loam, loam, silty clay loam, or clay loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam, loam, silty clay loam, or clay loam

C horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 6
Texture—silt loam, loam, or silty clay loam

Hazleton Series

Depth class: Deep
Drainage class: Well drained
Permeability: Moderately rapid or rapid
Landscape position: Uplands
Parent material: Acid material derived from sandstone; in areas of the Oriskany geologic deposit
Slope range: 3 to 55 percent
Classification: Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

Representative Pedon

Hazleton channery loam, in a wooded area; in Pocahontas County; about 1 mile north and 85 degrees east of the intersection of County Route 21 and Violet Road, south of Huntersville; USGS Marlinton topographic quadrangle; lat. 38 degrees 08 minutes 42 seconds N. and long. 80 degrees 02 minutes 39 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
Oe—1 to 2 inches; moderately decomposed forest litter.
A—2 to 3 inches; black (10YR 2/1) channery loam; weak fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 20 percent rock fragments; extremely acid; abrupt wavy boundary.
E—3 to 4 inches; brown (10YR 4/3) channery loam; weak fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 20 percent rock fragments; extremely acid; abrupt wavy boundary.
BE—4 to 7 inches; dark yellowish brown (10YR 4/4) channery loam; weak fine subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 25 percent rock fragments; extremely acid; abrupt wavy boundary.

Bw1—7 to 13 inches; yellowish brown (10YR 5/4) channery fine sandy loam; weak fine subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; 25 percent rock fragments; very strongly acid; clear wavy boundary.
Bw2—13 to 20 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak fine and medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; 40 percent rock fragments; strongly acid; clear wavy boundary.
Bw3—20 to 32 inches; yellowish brown (10YR 5/8) very channery sandy loam; weak fine and medium subangular blocky structure; friable; few fine and medium roots; 55 percent rock fragments; strongly acid; clear wavy boundary.
C—32 to 52 inches; strong brown (7.5YR 5/6) extremely channery sandy loam; massive; friable; few fine and medium roots; 75 percent rock fragments; strongly acid; clear wavy boundary.
R—52 inches; yellowish brown (10YR 5/6), massive sandstone.

Range in Characteristics

Thickness of the solum: 25 to 50 inches
Depth to bedrock: 40 to 60 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 5 to 70 percent, by volume, in the solum; 35 to 80 percent, by volume, in the substratum; averages more than 35 percent, by volume, in the particle-size control section

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—loam or sandy loam

B horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, fine sandy loam, or sandy loam

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam or loamy sand

Holly Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderately slow or moderate
Landscape position: Flood plains
Parent material: Alluvium
Slope range: 0 to 3 percent
Classification: Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Representative Pedon

Holly silt loam, in a pasture; in Pocahontas County; about 1.25 miles south and 68 degrees east of the intersection of U.S. Route 219 and the Airport Road, north of Marlinton; USGS Marlinton topographic quadrangle; lat. 38 degrees 13 minutes 48 seconds N. and long. 80 degrees 04 minutes 03 seconds W.

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many very fine and fine roots; many fine distinct dark brown (7.5YR 3/4) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt smooth boundary.

Bg1—4 to 9 inches; dark gray (10YR 4/1) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; common fine distinct dark yellowish brown (10YR 3/4) and common fine prominent dark brown (7.5YR 3/4) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt wavy boundary.

Bg2—9 to 11 inches; dark gray (10YR 4/1) sandy loam; weak medium subangular blocky structure; friable; common very fine and fine roots; few fine prominent dark brown (7.5YR 3/4) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt wavy boundary.

Bg3—11 to 15 inches; dark gray (10YR 4/1) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common fine prominent dark brown (7.5YR 3/4) redoximorphic concentrations; 2 percent rock fragments; strongly acid; abrupt wavy boundary.

Bg4—15 to 21 inches; grayish brown (2.5Y 5/2) silt loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots; many fine prominent dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/6) and common fine prominent brown (7.5YR 4/4) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt wavy boundary.

Bg5—21 to 42 inches; light brownish gray (2.5Y 6/2) silt loam; moderate medium and coarse prismatic structure parting to moderate medium and coarse subangular blocky; friable; few very fine roots; many medium prominent dark yellowish brown (10YR 4/6) and common medium prominent brown (7.5YR 4/4) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt smooth boundary.

Cg1—42 to 44 inches; grayish brown (2.5Y 5/2) sandy loam; massive; friable; common fine and medium distinct brown (10YR 5/3) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt smooth boundary.

Cg2—44 to 52 inches; gray (10YR 5/1) silt loam; massive; friable; many medium prominent dark brown (7.5YR 3/4) and brown (7.5YR 4/4) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt smooth boundary.

Cg3—52 to 54 inches; grayish brown (10YR 5/2) sandy loam; massive; friable; many fine and medium faint brown (10YR 5/3), many fine and medium distinct yellowish brown (10YR 5/6), and few fine and medium prominent dark brown (7.5YR 3/4) redoximorphic concentrations; 2 percent rock fragments; moderately acid; abrupt smooth boundary.

Cg4—54 to 65 inches; gray (5Y 5/1) silt loam; massive; friable; few medium prominent yellowish brown (10YR 5/6) redoximorphic concentrations; 2 percent rock fragments; moderately acid.

Range in Characteristics

Thickness of the solum: 20 to 44 inches
Depth to bedrock: More than 60 inches

Reaction: Moderately acid or slightly acid in the A horizon, strongly acid to slightly acid in the upper part of the B horizon, and moderately acid or slightly acid in the lower part of the B horizon and in the C horizon
Content of rock fragments: 0 to 10 percent, by volume, in the A horizon; 0 to 15 percent, by volume, in the B horizon; and 0 to 25 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—2 to 6
Chroma—1 or 2
Texture—silt loam

B horizon:
Hue—10YR or 2.5Y or is neutral
Value—4 to 6
Chroma—0 to 2
Texture—silt loam, loam, sandy loam, or silty clay loam

C horizon:
Hue—10YR, 2.5Y, or 5Y or is neutral
Value—4 to 6
Chroma—0 to 2
Texture—silt loam, loam, sandy loam, or silty clay loam

Kaymine Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Uplands
Parent material: Partly weathered shale, siltstone, sandstone, and some coal from the surface mining of coal seams; in areas of the Pocahontas and New River geologic deposits
Slope range: 0 to 80 percent
Classification: Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents

Representative Pedon

Kaymine extremely channery loam, in an area of Kaymine-Rock outcrop complex, very steep, on an outslope revegetated with crownvetch and orchardgrass; about 2.6 miles north and 10 degrees west of Charmco; USGS Corliss topographic quadrangle; lat. 38 degrees 02 minutes 25 seconds N. and long. 80 degrees 45 minutes 07 seconds W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) extremely channery loam; weak very fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 80 percent rock fragments; slightly acid; clear broken boundary.
AC—5 to 13 inches; dark grayish brown (10YR 4/2) extremely channery loam; common fine and medium faint dark gray (10YR 4/1) and common fine and medium distinct yellowish brown (10YR 5/6) lithochromic mottles; weak fine subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 70 percent rock fragments; neutral; clear broken boundary.
C1—13 to 36 inches; dark grayish brown (10YR 4/2) very channery loam; common fine and medium faint dark gray (10YR 4/1) and common fine and medium distinct yellowish brown (10YR 5/6) lithochromic mottles; massive; friable;

common very fine, fine, medium, and coarse roots; 60 percent rock fragments; neutral; clear wavy boundary.
C2—36 to 65 inches; dark grayish brown (10YR 4/2) extremely channery loam; common fine and medium faint dark gray (10YR 4/1) lithochromic mottles; massive; friable; few fine, medium, and coarse roots; 80 percent rock fragments; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches
Reaction: Moderately acid to slightly alkaline
Content of rock fragments: 15 to 80 percent, by volume, throughout the profile; averages 35 percent or more, by volume, in the particle-size control section; each type of fragment less than 65 percent, by volume, of the total rock fragments in the control section
Type of rock fragments: Siltstone, shale, sandstone, and coal; dominantly channers but includes stones and a few boulders

A horizon:
Hue—7.5YR or 10YR or is neutral
Value—3 to 5
Chroma—0 to 4
Texture—loam

C horizon:
Hue—7.5YR or 10YR
Value—2 to 6
Chroma—1 to 8
Texture—loam or silt loam

Leatherbark Series

Depth class: Moderately deep (fig. 27)
Drainage class: Somewhat poorly drained
Permeability: Moderately slow or slow
Landscape position: Broad ridgetops and upland depressions
Parent material: Interbedded sandstone, siltstone, and shale; west of the Greenbrier River, at elevations above 3,500 feet; in areas of the Kanawha and New River geologic deposits
Slope range: 0 to 15 percent
Classification: Fine-loamy, mixed, subactive, frigid Aquic Dystrudepts

Representative Pedon

Leatherbark silt loam, in a wooded area; in Pocahontas County; about 4,000 feet north and 38 degrees west of Bald Knob and 1.1 miles north and 66 degrees west of the Cass Scenic Railroad observation platform; USGS Cass topographic quadrangle; lat. 38 degrees 27 minutes 25 seconds N. and long. 79 degrees 56 minutes 25 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
Oe—1 to 2 inches; moderately decomposed forest litter.
A—2 to 4 inches; very dark brown (10YR 2/2) silt loam; weak fine granular structure; friable; many very fine, fine, medium, and coarse roots; 5 percent rock fragments; extremely acid; abrupt smooth boundary.

Figure 27.—Representative profile of a Leatherbark soil. Redoximorphic depletions are at a depth of about 8 inches. Black, gray, and reddish brown siltstone and shale are at a depth of about 38 inches. Depth is marked in feet.

E—4 to 7 inches; grayish brown (10YR 5/2) silt loam; weak fine subangular blocky structure parting to weak fine granular; friable; many very fine, fine, medium, and coarse roots; 5 percent rock fragments; extremely acid; clear smooth boundary.
Bw1—7 to 11 inches; yellowish brown (10YR 5/6) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; continuous prominent brown (10YR 5/3) coatings on faces of peds and few distinct coatings in pores; common coarse prominent gray (10YR 6/1) redoximorphic depletions and few fine faint yellowish brown (10YR 5/8) iron concentrations; 5 percent rock fragments; extremely acid; clear wavy boundary.
Bw2—11 to 20 inches; brownish yellow (10YR 6/6) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; few distinct coatings in pores; common medium faint brownish yellow (10YR 6/8) iron concentrations and common medium distinct light brownish gray (10YR 6/2) redoximorphic depletions; 5 percent rock fragments; very strongly acid; gradual irregular boundary.
Bw3—20 to 37 inches; light olive brown (2.5Y 5/4) channery silt loam; moderate coarse prismatic structure; firm; few distinct coatings on rock fragments and in pores; many coarse distinct grayish brown (2.5Y 5/2) redoximorphic depletions and many coarse prominent dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/8) iron concentrations; 20 percent rock fragments; very strongly acid; clear wavy boundary.
C—37 to 40 inches; brown (10YR 4/3) very channery silt loam; massive; friable; many medium distinct gray (10YR 5/1) redoximorphic depletions and common medium prominent yellowish brown (10YR 5/8) iron concentrations; 35 percent rock fragments; very strongly acid; clear wavy boundary.
Cr—40 inches; black (10YR 2/1), gray (10YR 5/1), and reddish brown (2.5YR 4/4), fractured siltstone and shale.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 5 to 20 percent, by volume, in the A and E horizons; 5 to 35 percent, by volume, in the Bw horizon; and 20 to 55 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam or loam

Bw horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 8
Chroma—1 to 8
Texture—silty clay loam, clay loam, silt loam, or loam

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 8

Chroma—1 to 8
Texture—silty clay loam, silt loam, or loam

Lily Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Landscape position: Upland flats, ridgetops, and side slopes
Parent material: Acid sandstone; in areas of the Pocono and Bluefield geologic deposits
Slope range: 3 to 35 percent
Classification: Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

Representative Pedon

Lily sandy loam, 3 to 8 percent slopes, in a wooded area on Miller Ridge; about 2.0 miles north-northeast of the intersection of U.S. Route 60 and West Virginia Route 60/15 (or 3.2 miles on West Virginia Route 60/15 and about 200 feet south of the road); USGS Williamsburg topographic quadrangle; lat. 37 degrees 53 minutes 47 seconds N. and long. 80 degrees 29 minutes 31 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
A—1 to 3 inches; dark brown (7.5YR 3/2) sandy loam; weak fine granular structure; very friable; common very fine and fine roots; very strongly acid; clear smooth boundary.
E—3 to 8 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium and coarse granular structure; very friable; common fine and medium and few coarse roots; very strongly acid; clear smooth boundary.
BE—8 to 11 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.
Bt1—11 to 19 inches; yellowish brown (10YR 5/8) loam; weak medium subangular blocky structure; friable; common fine and few medium and coarse roots; few faint clay films in pores; very strongly acid; gradual wavy boundary.
Bt2—19 to 25 inches; yellowish brown (10YR 5/8) loam; weak coarse subangular blocky structure; friable; few fine and medium roots; few faint clay films in pores; very strongly acid; clear smooth boundary.
C—25 to 33 inches; strong brown (7.5YR 5/6) loamy sand; massive; friable; few fine roots; 5 percent rock fragments; very strongly acid; abrupt smooth boundary.
R—33 inches; variegated very pale brown (10YR 8/4), strong brown (7.5YR 5/6), and yellow (10YR 7/8), fine grained, hard sandstone.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 0 to 10 percent, by volume, in the A and E horizons; 0 to 25 percent, by volume, in the B horizon; and 5 to 35 percent, by volume, in the C horizon

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—sandy loam

E horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—fine sandy loam, sandy loam, or loam

BE horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—1 to 8
Texture—fine sandy loam, sandy loam, or loam

Bt horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—loam, sandy clay loam, or clay loam

C horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loamy sand, sandy loam, fine sandy loam, or loam

Lindside Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow or moderate
Landscape position: Flood plains
Parent material: Alluvium derived from soils underlain by siltstone, shale, limestone, and sandstone
Slope range: 0 to 3 percent
Classification: Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts

Representative Pedon

Lindside silt loam, in a pastured area of Melvin-Lindside complex; about 2,700 feet south of Shawvers Crossing, east of Rupert; USGS Rupert topographic quadrangle; lat. 37 degrees 56 minutes 44 seconds N. and long. 80 degrees 39 minutes 26 seconds W.

Ap—0 to 9 inches; dark brown (10YR 3/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; very friable; many very fine and fine roots; slightly acid; clear smooth boundary.
BA—9 to 13 inches; brown (10YR 4/3) silt loam; moderate fine and medium subangular blocky structure parting to moderate very fine granular; very friable; many very fine and fine roots; slightly acid; clear wavy boundary.
Bw1—13 to 20 inches; brown (7.5YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; moderately acid; diffuse wavy boundary.
Bw2—20 to 36 inches; brown (7.5YR 5/3) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; many fine distinct strong brown (7.5YR 5/8) iron concentrations and few very fine distinct grayish

brown (10YR 5/2) redoximorphic depletions; moderately acid; gradual wavy boundary.

Bw3—36 to 43 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine and medium subangular blocky structure; friable; few very fine roots; few fine prominent strong brown (7.5YR 5/8) iron concentrations and many coarse distinct grayish brown (10YR 5/2) redoximorphic depletions; common fine manganese coatings; moderately acid; diffuse wavy boundary.

BC—43 to 60 inches; yellowish brown (10YR 5/4) silt loam; moderate very coarse prismatic structure; firm; few very fine roots; many coarse prominent reddish brown (7.5YR 6/8) iron concentrations and many coarse distinct gray (10YR 6/1) redoximorphic depletions; moderately acid; diffuse wavy boundary.

C—60 to 65 inches; brown (7.5YR 4/3) very fine sandy loam; massive; firm; common fine distinct reddish yellow (7.5YR 6/8) iron concentrations and few fine prominent gray (10YR 6/1) redoximorphic depletions; many fine manganese coatings; moderately acid.

Range in Characteristics

Thickness of the solum: 25 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Strongly acid to slightly alkaline in the upper part of the profile and moderately acid to slightly alkaline in the lower part
Content of rock fragments: 0 to 5 percent, by volume, within a depth of 40 inches and 0 to 30 percent, by volume, below a depth of 40 inches

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 to 6 within 20 inches of the surface and 1 to 4 below a depth of 20 inches
Texture—silt loam, loam, silty clay loam, or fine sandy loam

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam, silty clay loam, loam, or very fine sandy loam

Lobdell Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Landscape position: Flood plains
Parent material: Alluvium derived from soils underlain by sandstone, siltstone, shale, limestone, and chert
Slope range: 0 to 3 percent
Classification: Fine-loamy, mixed, active, mesic Fluvaquentic Eutrudepts

Representative Pedon

Lobdell silt loam, in a pasture; in Pocahontas County; about 1 mile north and 52 degrees east of the intersection of West Virginia Routes 92 and 39, north of Minnehaha Springs; USGS Minnehaha Springs topographic quadrangle; lat. 38 degrees 10 minutes 24 seconds N. and long. 79 degrees 58 minutes 10 seconds W.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure parting to moderate fine granular; friable; many very fine and fine roots; 2 percent rock fragments; strongly acid; clear wavy boundary.

Bw1—10 to 19 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; common very fine and fine roots; common dark grayish brown (10YR 4/2) krotovinas; 2 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—19 to 28 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; few very fine and fine roots; common medium distinct grayish brown (10YR 5/2) redoximorphic depletions and yellowish brown (10YR 5/6) iron concentrations; 2 percent rock fragments; moderately acid; gradual wavy boundary.

C1—28 to 47 inches; light olive brown (2.5Y 5/3) sandy loam; massive; friable; few very fine and fine roots; common medium faint grayish brown (2.5Y 5/2) redoximorphic depletions and common medium prominent strong brown (7.5YR 5/6) iron concentrations; 5 percent rock fragments; neutral; clear wavy boundary.

C2—47 to 65 inches; yellowish brown (10YR 5/6) very gravelly silt loam; massive; friable; few medium prominent grayish brown (2.5Y 5/2) and olive brown (2.5Y 4/3) redoximorphic depletions and common medium distinct yellowish brown (10YR 5/8) iron concentrations; 50 percent rock fragments; neutral.

Range in Characteristics

Thickness of the solum: 24 to 40 inches

Depth to bedrock: More than 60 inches

Reaction: Strongly acid to neutral in the A and Bw horizons and moderately acid to neutral in the C horizon

Content of rock fragments: 0 to 5 percent, by volume, in the A horizon and 0 to 15 percent, by volume, in the Bw and C horizons with a greater content of rock fragments below a depth of 40 inches

A horizon:

Hue—10YR
Value—2 to 4
Chroma—1 to 3
Texture—silt loam

B horizon:

Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silt loam, loam, or fine sandy loam

C horizon:

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam, loam, or sandy loam

Macove Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Landscape position: Footslopes and benches
Parent material: Colluvium derived from acid shale, siltstone, and sandstone; on the Pocano, Chemung, and Brallier geologic deposits
Slope range: 3 to 55 percent
Classification: Loamy-skeletal, mixed, active, mesic Typic Hapludults

Representative Pedon

Macove channery silt loam, in a wooded area; in Pocahontas County; about 1.2 miles west of the intersection of West Virginia Route 28 and Thorny Creek Road; USGS Clover Lick topographic quadrangle; lat. 38 degrees 16 minutes 02 seconds N. and long. 79 degrees 59 minutes 25 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
A—1 to 2 inches; dark brown (10YR 3/3) channery silt loam; weak fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 20 percent rock fragments; very strongly acid; abrupt wavy boundary.
E—2 to 5 inches; brown (10YR 5/3) channery loam; weak fine subangular blocky structure parting to weak fine granular; friable; many very fine, fine, medium, and coarse roots; 30 percent rock fragments; very strongly acid; clear wavy boundary.
BE—5 to 8 inches; yellowish brown (10YR 5/6) channery silt loam; weak fine and medium subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 30 percent rock fragments; very strongly acid; clear wavy boundary.
Bt1—8 to 15 inches; yellowish brown (10YR 5/8) very channery silt loam; weak medium subangular blocky structure; friable; common fine, medium, and coarse roots; few distinct clay films in pores; 35 percent rock fragments; very strongly acid; clear wavy boundary.
Bt2—15 to 24 inches; yellowish brown (10YR 5/8) very channery silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine, medium, and coarse roots; common distinct clay films on faces of peds and rock fragments and in pores and root channels; 45 percent rock fragments; very strongly acid; clear wavy boundary.
Bt3—24 to 38 inches; strong brown (7.5YR 5/6) very channery silty clay loam; weak fine and medium subangular blocky structure; friable; few fine and medium roots; common distinct clay films on faces of peds and rock fragments and in pores and root channels; 50 percent rock fragments; very strongly acid; gradual wavy boundary.
Bt4—38 to 65 inches; brown (7.5YR 5/4) extremely channery silty clay loam; weak medium and coarse subangular blocky structure; friable; few fine and medium roots; common distinct clay films on faces of peds and rock fragments and in pores and root channels; common medium black concretions; 65 percent rock fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 30 to more than 60 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid
Content of rock fragments: 15 to 35 percent, by volume, in the A and E horizons; 15 to 70 percent, by volume, in the BE and Bt horizons; averages more than 35 percent, by volume, in the particle-size control section

A horizon:
Hue—10YR
Value—2 to 4
Chroma—2 or 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—loam or silt loam

BE horizon:
Hue—10YR
Value—4 to 6
Chroma—4 to 6
Texture—loam or silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay loam, silt loam, or loam
Note—redoximorphic depletions and concentrations in some pedons

Mandy Series

Depth class: Moderately deep (fig. 28)
Drainage class: Well drained
Permeability: Moderate
Landscape position: Uplands
Parent material: Interbedded siltstone, shale, and fine grained sandstone; generally at elevations above 3,000 feet; on the Kanawha, New River, Bluestone, and Princeton geologic deposits
Slope range: 3 to 80 percent but dominantly 35 to 55 percent
Classification: Loamy-skeletal, mixed, active, frigid Typic Dystrudepts

Representative Pedon

Mandy channery silt loam, in a wooded area; in Pocahontas County; about 1.1 miles south and 60 degrees east of the confluence of Abes Run and the East Fork of the Greenbrier River; USGS Thornwood topographic quadrangle; lat. 38 degrees 36 minutes 33 seconds N. and long. 79 degrees 39 minutes 35 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
A—1 to 4 inches; very dark brown (10YR 2/2) channery silt loam; moderate fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 15 percent rock fragments; extremely acid; abrupt wavy boundary.
E—4 to 6 inches; dark brown (7.5YR 3/4) channery silt loam; moderate fine and medium granular structure; very friable; many very fine, fine, medium, and coarse roots; 15 percent rock fragments; very strongly acid; abrupt wavy boundary.
BE—6 to 10 inches; dark yellowish brown (10YR 4/6) channery silt loam; weak fine subangular blocky structure; very friable; many very fine, fine, medium, and coarse roots; 25 percent rock fragments; very strongly acid; clear wavy boundary.

Figure 28.—Representative profile of a Mandy soil. Olive brown, platy, fine grained sandstone bedrock is at a depth of about 26 inches. Depth is marked in feet.

Bw1—10 to 17 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine subangular blocky structure; friable; common very fine, fine, and medium roots; 35 percent rock fragments; very strongly acid; clear wavy boundary.

Bw2—17 to 29 inches; yellowish brown (10YR 5/4) very channery silt loam; weak

fine and medium subangular blocky structure; friable; few very fine, fine, and medium roots; 45 percent rock fragments; very strongly acid; clear wavy boundary.
C—29 to 37 inches; yellowish brown (10YR 5/4) extremely channery silt loam; massive; friable; few fine roots; 65 percent rock fragments; very strongly acid; clear wavy boundary.
Cr—37 inches; dark grayish brown (2.5Y 4/2), highly weathered siltstone.

Range in Characteristics

Thickness of the solum: 20 to 33 inches
Depth to bedrock: 20 to 40 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 10 to 20 percent, by volume, in the A and E horizons; 25 to 50 percent, by volume, in the B horizon; 60 to 90 percent, by volume, in the C horizon; averages more than 35 percent, by volume, in the particle-size control section

A horizon:
Hue—10YR
Value—2 to 4
Chroma—2 to 4
Texture—silt loam

E horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—3 or 4
Texture—silt loam or loam

BE horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—4 to 6
Texture—silt loam or loam

Bw horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 6
Texture—silt loam or loam

C horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture—silt loam or loam

Melvin Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Landscape position: Flood plains
Parent material: Alluvium derived from soils underlain by siltstone, shale, limestone, and sandstone
Slope range: 0 to 3 percent
Classification: Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Representative Pedon

Melvin silt loam, in a pastured area of Melvin-Lindside complex; about 2,800 feet south of Shawvers Crossing, east of Rupert; USGS Rupert topographic quadrangle; lat. 37 degrees 56 minutes 43 seconds N. and long. 80 degrees 39 minutes 25 seconds W.

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; many very fine and fine distinct strong brown (7.5YR 5/6) and many very fine and fine prominent red (2.5YR 4/6) redoximorphic concentrations; moderate fine subangular blocky structure; friable; common very fine and fine roots; moderately acid; diffuse wavy boundary.

Bg1—10 to 27 inches; dark grayish brown (10YR 4/2) silt loam; many medium and coarse distinct strong brown (7.5YR 5/6) and many very fine, fine, medium, and coarse prominent red (2.5YR 4/6) redoximorphic concentrations; moderate medium subangular blocky structure; friable; common very fine and fine roots; moderately acid; diffuse wavy boundary.

Bg2—27 to 34 inches; dark grayish brown (10YR 4/2) silt loam; many medium and coarse distinct strong brown (7.5YR 5/6) and many very fine, fine, medium, and coarse prominent red (2.5YR 4/6) redoximorphic concentrations and few fine and medium faint grayish brown (10YR 5/2) redoximorphic depletions; moderate medium subangular blocky structure; friable; few very fine and fine roots; moderately acid; clear wavy boundary.

BCg—34 to 58 inches; dark grayish brown (10YR 4/2) silt loam; many medium and coarse distinct strong brown (7.5YR 5/6) and many very fine, fine, medium, and coarse prominent red (2.5YR 4/6) redoximorphic concentrations and common very fine prominent bluish gray (5PB 5/1) redoximorphic depletions; moderate very coarse prismatic structure; friable; few very fine and fine roots; moderately acid; clear wavy boundary.

Cg—58 to 65 inches; bluish gray (10B 5/1) sandy loam; common medium and coarse prominent strong brown (7.5YR 5/6) and common very fine, fine, medium, and coarse prominent red (2.5YR 4/6) redoximorphic concentrations; massive; friable; few very fine and fine roots; slightly acid.

Range in Characteristics

Thickness of the solum: 20 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Moderately acid to slightly alkaline
Content of rock fragments: 0 to 5 percent, by volume, within 30 inches of the surface and 0 to 20 percent, by volume, below a depth of 30 inches

A horizon:
- Hue—10YR or 2.5Y
- Value—4 to 6
- Chroma—2 to 4
- Texture—silt loam

B horizon:
- Hue—10YR or 2.5Y or is neutral
- Value—4 to 7
- Chroma—0 to 2
- Texture—silt loam or silty clay loam

C horizon:
- Hue—10YR, 2.5Y, or 10B or is neutral
- Value—4 to 7

Chroma—0 to 2
Texture—silt loam, loam, or silty clay loam; stratified layers of loams, clays, and sands or of sand and gravel below a depth of 40 inches in some pedons

Mertz Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Landscape position: Footslopes and benches
Parent material: Cherty colluvium with various amounts of sandstone, siltstone, and shale; on the Huntersville and Oriskany geologic deposits
Slope range: 8 to 35 percent
Classification: Loamy-skeletal, mixed, semiactive, mesic Typic Hapludults

Representative Pedon

Mertz channery silt loam, in a wooded area; in Pocahontas County; about 4,200 feet north and 62 degrees east of the intersection of County Route 21 and the south entrance to Watoga State Park, in Calvin Price State Forest; USGS Lake Sherwood topographic quadrangle; lat. 38 degrees 05 minutes 31 seconds N. and long. 80 degrees 06 minutes 06 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
Oe—1 to 2 inches; moderately decomposed forest litter.
A—2 to 4 inches; very dark grayish brown (10YR 3/2) channery silt loam; weak very fine and fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 30 percent rock fragments; strongly acid; abrupt wavy boundary.
E—4 to 5 inches; dark grayish brown (10YR 4/2) channery silt loam; weak fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 30 percent rock fragments; moderately acid; abrupt wavy boundary.
BE—5 to 10 inches; dark yellowish brown (10YR 4/6) channery silt loam; weak fine subangular blocky structure; friable; many fine, medium, and coarse roots; 20 percent rock fragments; strongly acid; clear wavy boundary.
Bt1—10 to 23 inches; yellowish brown (10YR 5/6) channery silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine, medium, and coarse roots; few faint clay films on faces of peds and rock fragments and in pores; 30 percent rock fragments; strongly acid; clear wavy boundary.
Bt2—23 to 38 inches; yellowish brown (10YR 5/6) very channery clay loam; weak fine subangular blocky structure; friable; common medium and coarse roots; common distinct clay films on rock fragments and in pores; 50 percent rock fragments; strongly acid; clear wavy boundary.
Bt3—38 to 56 inches; yellowish brown (10YR 5/8) extremely channery silty clay loam; weak medium subangular blocky structure; firm; few fine roots; few faint clay films on rock fragments and in pores; 65 percent rock fragments; strongly acid; clear wavy boundary.
C—56 to 65 inches; yellowish brown (10YR 5/8) extremely channery silty clay loam; massive; firm; few fine roots; 75 percent rock fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Strongly acid or moderately acid within a depth of 40 inches and very strongly acid or strongly acid below a depth of 40 inches

Content of rock fragments: 15 to 45 percent, by volume, in the A and E horizons; 15 to 50 percent, by volume, in the upper part of the B horizon; 15 to 75 percent, by volume, in the lower part of the B horizon and in the C horizon; averages more than 35 percent, by volume, in the particle-size control section

A horizon:
Hue—10YR
Value—2 to 5
Chroma—2 or 3
Texture—silt loam

E horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

B horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, silt loam, clay loam, or silty clay loam

C horizon:
Hue—10YR
Value—5 or 6
Chroma—4 to 8
Texture—loam, silt loam, clay loam, or silty clay loam

Nolin Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landscape position: Flood plains, along Muddy Creek and its tributaries
Parent material: Alluvium derived mainly from soils underlain by limestone and siltstone
Slope range: 0 to 3 percent
Classification: Fine-silty, mixed, active, mesic Dystric Fluventic Eutrudepts

Representative Pedon

Nolin silt loam, in a hayfield, along Kitchen Creek, near Blue Sulphur Springs; about 3.4 miles west of West Virginia Routes 12 and 31; USGS Asbury topographic quadrangle; lat. 37 degrees 49 minutes 18 seconds N. and long. 80 degrees 36 minutes 56 seconds W.

Ap—0 to 5 inches; dark brown (7.5YR 3/4) silt loam; weak fine and medium granular structure; very friable; common very fine and fine roots; slightly acid; clear smooth boundary.
BA—5 to 10 inches; dark brown (7.5YR 3/4) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine and few fine roots; common very fine tubular pores; less than 5 percent dark yellowish brown (10YR 4/4), highly weathered siltstone fragments; slightly acid; clear wavy boundary.
Bw1—10 to 16 inches; dark brown (7.5YR 3/3) silt loam; weak medium subangular blocky structure; friable; few very fine and fine roots; common very fine tubular pores; few distinct silt coatings on faces of peds and in pores; common fine

krotovinas; less than 5 percent dark yellowish brown (10YR 4/4), highly weathered siltstone fragments; slightly acid; clear wavy boundary.

Bw2—16 to 37 inches; dark brown (7.5YR 3/3) silt loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots; common very fine tubular pores; many prominent dark yellowish brown (10YR 4/4) silt coatings on faces of peds; few fine krotovinas; few pockets of black charcoal fragments; less than 5 percent dark yellowish brown (10YR 4/4) and red (2.5YR 4/6), highly weathered siltstone fragments; slightly acid; abrupt wavy boundary.

Bw3—37 to 65 inches; dark brown (7.5YR 3/3) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; few coarse irregularly shaped macropores; common very fine tubular pores; few prominent dark yellowish brown (10YR 4/4) silt coatings in macropores and in root channels; few pockets of black charcoal fragments; less than 5 percent dark yellowish brown (10YR 4/4) and red (2.5YR 4/6), highly weathered siltstone fragments; neutral.

Range in Characteristics

Thickness of the solum: 40 inches or more
Depth to bedrock: More than 60 inches
Reaction: Slightly acid or neutral
Content of rock fragments: 0 to 5 percent, by volume, in the A and B horizons

A horizon:
Hue—7.5YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam

BA horizon:
Hue—7.5YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam

Bw horizon:
Hue—7.5YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam or silty clay loam

Philo Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Landscape position: Flood plains
Parent material: Recent alluvium
Slope range: 0 to 3 percent
Classification: Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts

Representative Pedon

Philo silt loam, in a meadow, near Neola.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; very friable; many fine roots; less than 5 percent pebbles; moderately acid; abrupt smooth boundary.

Bw1—8 to 19 inches; yellowish brown (10YR 5/4) silt loam; very weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.
Bw2—19 to 38 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable and firm; common medium distinct light brownish gray (10YR 6/2) redoximorphic depletions and strong brown (7.5YR 5/8) iron concentrations; less than 5 percent pebbles; very strongly acid; clear wavy boundary.
2C—38 to 65 inches; dark yellowish brown (10YR 4/4) to dark grayish brown (10YR 4/2) stratified sandy loam, fine sand, and silt loam; less than 5 percent pebbles and shale fragments; common medium and coarse distinct light brownish gray (10YR 6/2) redoximorphic depletions; very strongly acid.

Range in Characteristics

Thickness of the solum: 20 to 48 inches
Depth to bedrock: More than 60 inches
Reaction: Moderately acid to very strongly acid
Content of rock fragments: 0 to 20 percent, by volume, in the A and Bw horizons; 0 to 40 percent, by volume, in the 2C horizon; averages less than 20 percent, by volume, in the particle-size control section

A horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam

Bw horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 6
Chroma—3 to 6
Redoximorphic features—10YR 4/2 to 10YR 6/1 and 7.5YR 4/4 to 7.5YR 5/8
Texture—silt loam, loam, or fine sandy loam

2C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y or is neutral
Value—4 to 6
Chroma—0 to 4
Redoximorphic features—7.5YR 5/6, 7.5YR 5/8, 5YR 4/6, or redder
Texture—sand to silt loam

Pope Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Flood plains
Parent material: Recent alluvium
Slope range: 0 to 3 percent
Classification: Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts

Representative Pedon

Pope fine sandy loam, in a meadow, near Neola.

A—0 to 10 inches; brown (10YR 4/3) fine sandy loam; very weak medium granular structure; very friable; many fine roots; moderately acid; clear wavy boundary.

Bw1—10 to 25 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium granular and weak fine subangular blocky structure; friable; common fine roots; strongly acid; gradual smooth boundary.
Bw2—25 to 40 inches; dark yellowish brown (10YR 4/4) sandy loam; very weak fine subangular blocky structure; very friable; less than 5 percent pebbles; strongly acid; gradual wavy boundary.
2C—40 to 65 inches; stratified silt, sand, gravel, and some channery material; few large rounded stones; loose; strongly acid.

Range in Characteristics

Thickness of the solum: 30 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Strongly acid or very strongly acid
Content of rock fragments: 0 to 30 percent, by volume, within 40 inches of the surface and 0 to 70 percent, by volume, below a depth of 40 inches

A horizon:
Hue—10YR
Value—3 to 6
Chroma—3 to 6
Texture—fine sandy loam

B horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—sand to sandy clay loam

Potomac Series

Depth class: Very deep (fig. 29)
Drainage class: Somewhat excessively drained
Permeability: Rapid or very rapid
Landscape position: Flood plain
Parent material: Coarse textured alluvium
Slope range: 0 to 3 percent
Classification: Sandy-skeletal, mixed, mesic Typic Udifluvents

Representative Pedon

Potomac fine sandy loam, in an area of Tioga-Potomac complex, on an island; about 0.1 mile south of the West Virginia Route 21/2 bridge at Anthony; USGS Anthony topographic quadrangle; lat. 37 degrees 53 minutes 44 seconds N. and long. 80 degrees 19 minutes 33 seconds W.

A—0 to 6 inches; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; very friable; common very fine, fine, and medium roots; neutral; abrupt wavy boundary.
2C1—6 to 23 inches; brown (10YR 4/3) extremely gravelly loamy sand with pockets of sandy loam; massive; very friable; common very fine, fine, medium, and coarse roots; 75 percent pebbles and cobbles; neutral; clear wavy boundary.

Figure 29.—Representative profile of a Potomac soil. The surface layer is about 10 inches thick. It is underlain by a sandy-skeletal substratum. Depth is marked in feet.

2C2—23 to 31 inches; dark yellowish brown (10YR 4/4) very gravelly loamy sand with pockets of sand; massive; very friable; common very fine, fine, and medium roots; 45 percent pebbles and cobbles; neutral; clear wavy boundary.

2C3—31 to 65 inches; brown (10YR 4/3) extremely gravelly loamy sand with pockets of sandy loam; massive; very friable; few very fine, fine, and medium roots; 70 percent pebbles and cobbles; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches

Reaction: Very strongly acid to slightly alkaline
Content of rock fragments: 0 to 50 percent, by volume, in the A horizon; dominantly more than 50 percent, by volume, in the C horizon but ranges from 35 to 70 percent; the C horizon has subhorizons that are nearly free of rock fragments in some pedons and as much as 80 percent, by volume, in others

A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 to 4
Texture—fine sandy loam

C horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 or 4
Texture—loamy sand or sand with subhorizons of sandy loam in some pedons

Purdy Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
Landscape position: Terraces
Parent material: Alluvium deposited by slack water
Slope range: 0 to 3 percent
Classification: Fine, mixed, active, mesic Typic Endoaquults

Representative Pedon

Purdy silt loam, 0 to 3 percent slopes, in a meadow, near Hughart.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular and weak fine subangular blocky structure; friable and firm; fine distinct yellowish brown (10YR 5/8) iron concentrations; moderately acid; abrupt wavy boundary.
Btg1—8 to 20 inches; light brownish gray (10YR 6/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few medium distinct yellowish brown (10YR 5/6 and 5/8) iron concentrations; common faint clay films on faces of peds and in pores; very strongly acid; clear wavy boundary.
Btg2—20 to 30 inches; gray (10YR 5/1) silty clay; moderate medium and coarse subangular blocky structure; many medium distinct yellowish brown (10YR 5/6) iron concentrations; firm, slightly sticky; few faint clay films on faces of peds and in pores; very strongly acid; gradual wavy boundary.
Cg—30 to 65 inches; gray (10YR 5/1) stratified silty clay, silty clay loam, and clay; massive; firm, slightly sticky; very strongly acid.

Range in Characteristics

Thickness of the solum: 28 to 50 inches
Depth to bedrock: More than 60 inches
Reaction: In unlimed areas, strongly acid to extremely acid
Content of rock fragments: None

A horizon:
Hue—10YR or 2.5Y or is neutral
Value—4 or 5
Chroma—0 to 2
Texture—silt loam

Btg horizon:
Hue—10YR, 2.5Y, or 5Y or is neutral
Value—4 to 6
Chroma—0 to 2
Texture—silty clay, silty clay loam, or clay

Cg horizon:
Hue—10YR, 2.5Y, or 5Y or is neutral
Value—4 to 6
Chroma—0 to 3
Texture—silty clay, silty clay loam, or clay

Rough Series

Depth class: Very shallow
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Landscape position: Mountains and foothills
Parent material: Shale and fine grained sandstone; in areas of the Brallier and Millboro geologic deposits
Slope range: 55 to 80 percent
Classification: Loamy-skeletal, mixed, active, acid, mesic Lithic Udorthents

Representative Pedon

Rough very channery silt loam, in an area of woodland; in Alleghany County, Virginia; about 1,650 feet south and 41 degrees east of the intersection of Virginia Routes 18 and 613, near the confluence of Potts Creek and Bens Run; USGS Jordan Mines topographic quadrangle; lat. 37 degrees 41 minutes 19 seconds N. and long. 80 degrees 05 minutes 18 seconds W.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) very channery silt loam; weak fine granular structure; very friable; many very fine and fine and common medium roots; 36 percent rock fragments; strongly acid; abrupt smooth boundary.
Bw—2 to 4 inches; dark yellowish brown (10YR 4/4) very channery silt loam; weak fine granular structure; very friable; common very fine, fine, and medium roots; 40 percent rock fragments; strongly acid; abrupt smooth boundary.
C—4 to 7 inches; dark yellowish brown (10YR 4/4) extremely channery silt loam; massive; very friable; few very fine and fine roots; 60 percent rock fragments; strongly acid; clear smooth boundary.
R—7 inches; fissile shale.

Range in Characteristics

Thickness of the solum: 0 to 8 inches
Depth to bedrock: 4 to 9 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 15 to 60 percent, by volume, in the A horizon; 35 to 75 percent, by volume, in the B horizon; and 60 to 90 percent, by volume, in the C horizon

A horizon:
Hue—10YR
Value—2 to 4
Chroma—1 to 4
Texture—silt loam

B horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—4 to 6
Texture—silt loam or loam

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—silt loam or loam

Sensabaugh Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Landscape position: Flood plains and alluvial fans
Parent material: Alluvium derived mainly from soils underlain by limestone, sandstone, and siltstone
Slope range: 0 to 3 percent
Classification: Fine-loamy, mixed, semiactive, mesic Dystric Fluventic Eutrudepts

Representative Pedon

Sensabaugh loam, in a hayfield, along Kitchen Creek; about 850 feet southeast of the intersection of West Virginia Routes 25 and 25/3; USGS Dawson topographic quadrangle; lat. 37 degrees 49 minutes 53 seconds N. and long. 80 degrees 38 minutes 33 seconds W.

Ap—0 to 6 inches; dark reddish brown (5YR 3/3) loam; moderate fine subangular blocky structure parting to moderate medium granular; friable; many very fine and fine roots; 10 percent rock fragments; neutral; clear smooth boundary.
Bw1—6 to 13 inches; dark reddish brown (5YR 3/4) gravelly loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; many medium krotovinas; 15 percent rock fragments; slightly acid; clear wavy boundary.
Bw2—13 to 25 inches; dark reddish brown (5YR 3/4) gravelly loam; moderate medium and coarse subangular blocky structure; friable; few very fine and fine roots; many medium krotovinas; 20 percent rock fragments; neutral; clear wavy boundary.
BC—25 to 34 inches; dark reddish brown (5YR 3/3) extremely gravelly loam; weak coarse subangular blocky structure; friable; few very fine roots; 50 percent rock fragments; slightly acid; clear wavy boundary.
C1—34 to 52 inches; dark reddish brown (5YR 3/3) gravelly clay loam; common medium distinct strong brown (7.5YR 4/6) redoximorphic concentrations; massive; friable; 30 percent rock fragments; neutral; clear wavy boundary.
C2—52 to 65 inches; dark reddish brown (5YR 3/3) extremely gravelly loam; massive; friable; 65 percent rock fragments; neutral.

Range in Characteristics

Thickness of the solum: 24 to 42 inches
Depth to bedrock: More than 60 inches
Reaction: Moderately acid to neutral

Content of rock fragments: 0 to 10 percent, by volume, in the A horizon; 15 to 40 percent, by volume, in the B horizon; 15 to 50 percent, by volume, in the BC horizon; and 30 to 70 percent, by volume, in the C horizon

A horizon:
Hue—5YR
Value—3 or 4
Chroma—3 or 4
Texture—loam

B horizon:
Hue—5YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam or loam

BC horizon:
Hue—5YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam or clay loam

C horizon:
Hue—5YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam, loam, or clay loam

Shouns Series

Depth class: Very deep (fig. 30)
Drainage class: Well drained
Permeability: Moderate
Landscape position: Footslopes and benches
Parent material: Colluvium derived from shale, siltstone, and sandstone; mainly on the Hampshire, Maccrady, Greenbrier, Bluefield, and Hinton geologic deposits
Slope range: 3 to 55 percent
Classification: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Representative Pedon

Shouns channery silt loam, 15 to 35 percent slopes, extremely stony, in a wooded area, west of Cordova; USGS Trout topographic quadrangle; lat. 38 degrees 04 minutes 05 seconds N. and long. 80 degrees 22 minutes 30 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
Oe—1 to 2 inches; moderately decomposed forest litter.
A—2 to 4 inches; dark brown (7.5YR 3/3) channery silt loam; moderate very fine and fine granular structure; friable; many very fine, fine, and medium roots; 25 percent rock fragments; strongly acid; abrupt wavy boundary.
BA—4 to 8 inches; dark reddish brown (5YR 3/4) channery silt loam; moderate fine subangular blocky structure; friable; many very fine, fine, and medium roots; 20 percent rock fragments; strongly acid; clear wavy boundary.
Bt1—8 to 28 inches; reddish brown (5YR 4/4) channery silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine, fine, and medium roots; few distinct clay films on faces of peds and rock fragments

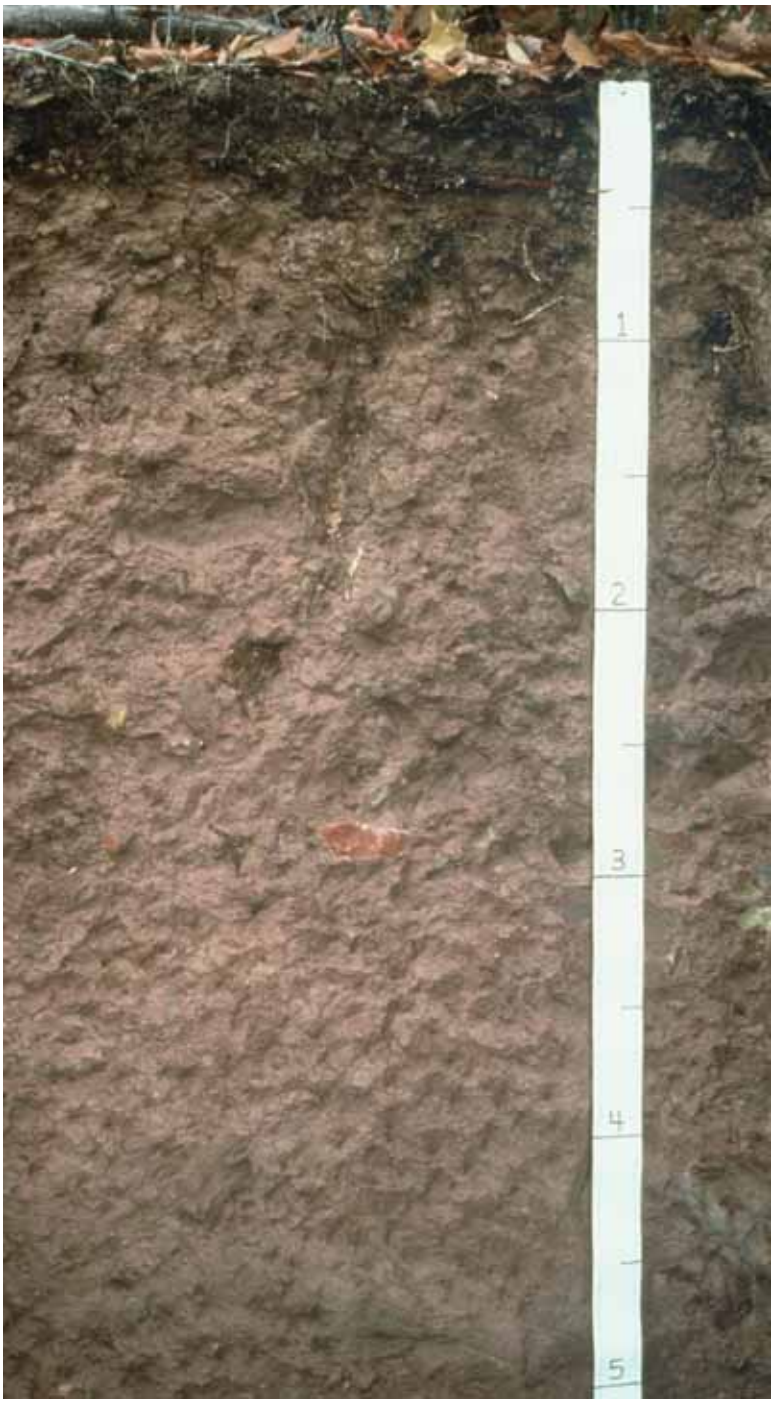

Figure 30.—Representative profile of a Shouns soil. Clay has accumulated in layers in the subsoil. These layers begin at a depth of about 12 inches and extend to a depth of about 54 inches. The rock fragments are siltstone and sandstone. Depth is marked in feet.

and in pores; 30 percent rock fragments; very strongly acid; clear wavy boundary.

Bt2—28 to 38 inches; reddish brown (5YR 4/4) very channery silty clay loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; common prominent clay films on faces of peds and rock fragments and in

pores and root channels; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bt3—38 to 54 inches; yellowish red (5YR 4/6) very channery silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common prominent clay films on faces of peds and rock fragments and in pores and root channels; 45 percent rock fragments; strongly acid; clear wavy boundary.
C—54 to 65 inches; dark reddish brown (2.5YR 3/4) channery silty clay loam; massive; firm; few very fine roots; 25 percent rock fragments; moderately acid.

Range in Characteristics

Thickness of the solum: 45 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid to moderately acid
Content of rock fragments: 0 to 35 percent, by volume, in the A and BA horizons and in the upper 20 inches of the Bt horizon and as much as 45 percent, by volume, below that depth

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam

BA horizon:
Hue—5YR or 7.5YR
Value—3 to 5
Chroma—4
Texture—loam or silt loam

Bt horizon:
Hue—2.5YR or 5YR
Value—4 or 5
Chroma—4 to 8
Texture—silty clay loam, silt loam, or loam

C horizon:
Hue—2.5YR or 5YR
Value—3 or 4
Chroma—4 to 8
Texture—silty clay loam, silt loam, and loam

Simoda Series

Depth class: Deep or very deep
Drainage class: Moderately well drained
Permeability: Slow
Landscape position: Broad ridgetops and upland depressions
Parent material: Acid material derived from interbedded sandstone, siltstone, and shale; mainly from soils in areas of the Kanawha and New River geologic deposits
Slope range: 3 to 15 percent
Classification: Fine-loamy, mixed, semiactive, frigid Typic Fragiudepts

Representative Pedon

Simoda silt loam, 3 to 15 percent slopes, very stony, in a wooded area, at a campground at Summit Lake; USGS Fork Mountain topographic quadrangle;

lat. 38 degrees 14 minutes 58 seconds N. and long. 80 degrees 26 minutes 39 seconds W.

Oi—0 to 1 inch; slightly decomposed leaf litter.
Oe—1 to 2 inches; moderately decomposed leaf litter.
A—2 to 4 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 10 percent rock fragments; extremely acid; abrupt wavy boundary.
BA—4 to 9 inches; brown (10YR 4/3) silt loam; moderate fine granular and weak medium subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 10 percent rock fragments; extremely acid; clear wavy boundary.
Bw1—9 to 12 inches; dark yellowish brown (10YR 4/6) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine, fine, medium, and coarse roots; 10 percent rock fragments; extremely acid; clear wavy boundary.
Bw2—12 to 21 inches; yellowish brown (10YR 5/6) channery silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine, medium, and coarse roots; 15 percent rock fragments; extremely acid; gradual wavy boundary.
Bw3—21 to 29 inches; yellowish brown (10YR 5/6) channery silty clay loam; common fine light brownish gray (10YR 6/2) redoximorphic depletions and common fine and medium strong brown (7.5YR 5/8) redoximorphic concentrations; moderate medium and coarse subangular blocky structure; friable; few fine, medium, and coarse roots; 35 percent rock fragments; very strongly acid; clear wavy boundary.
Bx—29 to 40 inches; dark yellowish brown (10YR 4/4) extremely channery silt loam; common light brownish gray (10YR 6/2) redoximorphic depletions and strong brown (7.5YR 5/8) redoximorphic concentrations; weak very coarse prismatic structure parting to weak coarse platy; very firm and brittle; 35 percent rock fragments; very strongly acid; gradual wavy boundary.
C—40 to 48 inches; dark yellowish brown (10YR 4/4) channery silt loam; many medium light brownish gray (10YR 6/2) redoximorphic depletions and strong brown (7.5YR 5/8) redoximorphic concentrations; massive; firm; 45 percent rock fragments; very strongly acid; abrupt wavy boundary.
R—48 inches; hard sandstone bedrock.

Range in Characteristics

Thickness of the solum: 20 to 50 inches
Depth to bedrock: 45 to 60 inches
Reaction: Extremely acid or very strongly acid
Content of rock fragments: 5 to 35 percent, by volume, in the solum and 5 to 50 percent, by volume, in the substratum

A horizon:
Hue—10YR
Value—2 or 3
Chroma—2 or 3
Texture—silt loam

BA horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam

Bw horizon:
Hue—7.5YR or 10YR

Value—4 or 5
Chroma—4 to 6
Texture—loam, silt loam, or silty clay loam

Bx horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—loam, silt loam, or silty clay loam

C horizon
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—loam, silt loam, or silty clay loam

Snowdog Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow to moderately rapid
Landscape position: Footslopes and benches
Parent material: Colluvium derived from acid shale, siltstone, and sandstone; at elevations generally above 3,000 feet; on the Kanawha, New River, Bluestone, and Princeton geologic deposits
Slope range: 3 to 55 percent
Classification: Fine-loamy, siliceous, active, frigid Typic Fragiudepts

Representative Pedon

Snowdog silt loam, in a wooded area; in Pocahontas County; about 1 mile north and 68 degrees east of the confluence of the Cherry River and Left Branch, near the Falls of Hills Creek Scenic Area; USGS Lobelia topographic quadrangle; lat. 38 degrees 12 minutes 16 seconds N. and long. 80 degrees 20 minutes 40 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.
Oe—1 to 2 inches; moderately decomposed forest litter.
A—2 to 4 inches; very dark brown (10YR 2/2) silt loam; weak fine and medium granular structure; friable; many very fine, fine, medium, and coarse roots; 5 percent rock fragments; extremely acid; abrupt smooth boundary.
BA—4 to 6 inches; brown (10YR 4/3) silt loam; moderate fine and medium subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; 10 percent rock fragments; very strongly acid; clear wavy boundary.
Bw—6 to 18 inches; yellowish brown (10YR 5/6) channery silt loam; moderate fine and medium subangular blocky structure; friable; many very fine, fine, medium, and coarse roots; few distinct coatings on rock fragments and in root channels; 15 percent rock fragments; very strongly acid; abrupt smooth boundary.
Bx—18 to 42 inches; yellowish brown (10YR 5/4) very channery loam; weak very coarse prismatic structure parting to weak medium platy; very firm, brittle; common distinct coatings on rock fragments and in pores; few fine distinct grayish brown (10YR 5/2) redoximorphic depletions and prominent yellowish brown (10YR 5/8) iron concentrations; 45 percent rock fragments; very strongly acid; clear smooth boundary.
BC—42 to 57 inches; yellowish brown (10YR 5/4) very channery sandy loam; weak very coarse prismatic structure parting to weak coarse subangular blocky; friable; common distinct coatings on rock fragments and in pores; few medium prominent

grayish brown (2.5Y 5/2) redoximorphic depletions and few fine distinct yellowish brown (10YR 5/8) iron concentrations; 45 percent rock fragments; very strongly acid; gradual wavy boundary.

C—57 to 67 inches; yellowish brown (10YR 5/6) channery silt loam; massive; friable; common distinct coatings on rock fragments and in pores; few fine prominent grayish brown (2.5Y 5/2) redoximorphic depletions and few fine distinct yellowish brown (10YR 5/8) iron concentrations; 25 percent rock fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 50 to 65 inches
Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 5 to 45 percent, by volume, in the A, BA, Bw, and BC horizons and 20 to 70 percent, by volume, in the Bx and C horizons

A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 to 4
Texture—silt loam

BA horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam or loam

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or loam

Bx horizon:
Hue—10YR
Value—3 to 6
Chroma—2 to 8
Texture—loam or sandy loam

BC and C horizons:
Hue—10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, loam, silt loam, or silty clay loam

Summers Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Landscape position: Upland ridgetops
Parent material: Acid material derived from sandstone; in areas of the Kanawha and New River geologic deposits
Slope range: 0 to 15 percent
Classification: Loamy-skeletal, siliceous, active, frigid Humic Dystrudepts

Representative Pedon

Summers very channery sandy loam, 0 to 15 percent slopes, very stony, in a wooded area on Clear Creek Mountain; about 3.75 miles southeast of Duo; USGS Duo topographic quadrangle; lat. 38 degrees 02 minutes 05 seconds N. and long. 80 degrees 32 minutes 40 seconds W.

L—0.25 inch to 0; hardwood leaf mat.
Oi—0 to 1 inch; slightly decomposed forest litter.
Oe—1 to 1.5 inches; moderately decomposed forest litter.
Oa—1.5 to 2 inches; highly decomposed forest litter.
A1—2 to 10 inches; very dark gray (10YR 3/1) very channery sandy loam; moderate fine and medium granular structure; very friable; many very fine, fine, and medium roots; 40 percent rock fragments; very strongly acid; clear wavy boundary.
A2—10 to 13 inches; dark brown (7.5YR 3/2) very channery sandy loam; moderate fine and medium granular structure; very friable; many very fine, fine, and medium roots; 40 percent rock fragments; very strongly acid; abrupt wavy boundary.
BA—13 to 20 inches; dark yellowish brown (10YR 4/6) very channery sandy loam; weak medium subangular blocky structure; friable; common very fine, fine, and medium roots; 40 percent rock fragments; very strongly acid; clear wavy boundary.
Bw—20 to 28 inches; yellowish brown (10YR 5/6) very channery sandy loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; 40 percent rock fragments; strongly acid; clear wavy boundary.
C—28 to 30 inches; yellowish brown (10YR 5/6) extremely channery sandy loam; common fine prominent strong brown (7.5YR 5/8) mottles; massive; friable; few very fine roots; 65 percent rock fragments; strongly acid; abrupt wavy boundary.
R—30 inches; fractured, grayish brown (10YR 5/2), medium grained sandstone.

Range in Characteristics

Thickness of the solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Reaction: Very strongly acid or strongly acid
Content of rock fragments: 20 to 50 percent, by volume, in the A horizon; 20 to 40 percent, by volume, in the B horizon; and 50 to 70 percent, by volume, in the C horizon

A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 to 3
Texture—sandy loam

B horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, fine sandy loam, or sandy loam

C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 6
Texture—loam, fine sandy loam, or sandy loam

Tioga Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate to rapid
Landscape position: Flood plains
Parent material: Recent alluvium
Slope range: 0 to 3 percent
Classification: Coarse-loamy, mixed, active, mesic Dystric Fluventic Eutrudepts

Representative Pedon

Tioga fine sandy loam, in an area of Tioga-Potomac complex, on an island; about 0.1 mile south of the West Virginia Route 21/2 bridge at Anthony; USGS Anthony topographic quadrangle; lat. 37 degrees 53 minutes 41 seconds N. and long. 80 degrees 19 minutes 35 seconds W.

Oi—0 to 1 inch; slightly decomposed leaf litter.
A—1 to 8 inches; dark brown (10YR 3/3) fine sandy loam; weak medium and coarse granular structure; very friable; few coarse and common very fine, fine, and medium roots; moderately acid; clear wavy boundary.
Bw1—8 to 17 inches; dark yellowish brown (10YR 3/4) fine sandy loam; weak fine and medium subangular blocky structure; very friable; few coarse and very coarse and common fine and medium roots; slightly acid; clear wavy boundary.
Bw2—17 to 29 inches; dark yellowish brown (10YR 4/4) fine sandy loam with pockets of loamy fine sand; weak medium subangular blocky structure; very friable; few fine, medium, and very coarse roots; moderately acid; clear wavy boundary.
C1—29 to 47 inches; dark yellowish brown (10YR 4/4) loamy fine sand with thin layers of brown (7.5YR 4/4) fine sandy loam; massive; very friable; few fine and medium roots; moderately acid; clear wavy boundary.
C2—47 to 65 inches; brown (7.5YR 4/4) fine sandy loam with pockets of loamy fine sand; massive; very friable; few fine and medium roots; moderately acid.

Range in Characteristics

Thickness of the solum: 18 to 44 inches
Depth to bedrock: More than 60 inches
Reaction: Strongly acid to neutral in the solum and moderately acid to slightly alkaline in the substratum
Content of rock fragments: 0 to 35 percent, by volume, in individual layers of the solum and 0 to 60 percent, by volume, in individual layers of the substratum

A horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—2 to 4
Texture—fine sandy loam

Bw horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—2 to 4
Texture—fine sandy loam to silt loam with horizons of sandy loam or loamy sand

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5

Chroma—2 to 4
Texture—loamy sand to silt loam

Trussel Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow to moderate
Landscape position: Footslopes and benches
Parent material: Colluvium derived from acid shale, siltstone, and sandstone; at elevations generally above 3,000 feet; on the Kanawha, New River, Bluestone, and Princeton geologic deposits
Slope range: 3 to 15 percent
Classification: Fine-loamy, mixed, semiactive, frigid Aeric Fragiaquepts

Representative Pedon

Trussel silt loam, in a wooded area; in Pocahontas County; about 1.5 miles south and 47 degrees east of the confluence of Abes Run and the East Fork of the Greenbrier River; USGS Thornwood topographic quadrangle; lat. 38 degrees 36 minutes 10 seconds N. and long. 79 degrees 39 minutes 25 seconds W.

Oe—0 to 2 inches; moderately decomposed forest litter.
A—2 to 4 inches; black (10YR 2/1) silt loam; weak fine and medium granular structure; very friable; many very fine, fine, and medium roots; 5 percent rock fragments; extremely acid; abrupt smooth boundary.
E—4 to 8 inches; light brownish gray (10YR 6/2) silt loam; moderate medium subangular blocky structure; friable; common very fine, fine, and medium roots; common medium prominent brownish yellow (10YR 6/8) iron concentrations; many prominent very dark grayish brown (10YR 3/2) coatings on faces of peds; 5 percent rock fragments; extremely acid; clear wavy boundary.
Bw1—8 to 13 inches; gray (10YR 6/1) silt loam; moderate medium and coarse prismatic structure; friable; few very fine, fine, and medium roots; many medium prominent brownish yellow (10YR 6/8) and many fine prominent dark yellowish brown (10YR 4/6) iron concentrations; 10 percent rock fragments; extremely acid; clear wavy boundary.
Bw2—13 to 20 inches; gray (10YR 6/1) channery silt loam; moderate medium and coarse prismatic structure; friable; few very fine and fine roots; many medium prominent yellowish brown (10YR 5/6) and common medium distinct dark yellowish brown (10YR 4/4) iron concentrations; 15 percent rock fragments; very strongly acid; gradual wavy boundary.
Bx—20 to 37 inches; olive (5Y 5/3) channery loam; weak very coarse prismatic structure parting to weak medium platy; firm, brittle; few very fine roots; common medium prominent gray (10YR 6/1) redoximorphic depletions and many coarse prominent strong brown (7.5YR 5/8) iron concentrations; 30 percent rock fragments; very strongly acid; gradual wavy boundary.
BC—37 to 49 inches; light olive gray (5Y 6/2) very channery loam; weak medium and coarse platy structure; firm; few very fine roots; common medium prominent strong brown (7.5YR 5/8) iron concentrations; 45 percent rock fragments; very strongly acid; gradual wavy boundary.
C—49 to 67 inches; light olive brown (2.5Y 5/3) very channery loam; massive; firm; common fine prominent gray (10YR 6/1) redoximorphic depletions and common medium prominent strong brown (7.5YR 5/8) iron concentrations; 50 percent rock fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 40 to 60 inches
Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid
Content of rock fragments: 0 to 30 percent, by volume, in the A, E, and Bw horizons and 20 to 60 percent, by volume, in the Bx and C horizons

A horizon:
Hue—10YR or 2.5Y
Value—2 to 5
Chroma—1 to 4
Texture—silt loam

E horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—silt loam or loam

Bw horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam, loam, silty clay loam, or sandy clay loam

Bx horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—silt loam or loam

BC and C horizons:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—silt loam or loam

Udifluvents

Depth class: Very deep
Drainage class: Well drained to poorly drained
Permeability: Varies
Landscape position: Flood plains, along minor drainageways, at elevations above 3,000 feet
Parent material: Alluvium derived from soils underlain by siltstone, sandstone, and limestone
Slope range: 0 to 3 percent
Classification: Udifluvents

Representative Pedon

A typical pedon for Udifluvents is not given because the soils vary too much.

Range in Characteristics

Depth to bedrock: More than 60 inches
Reaction: Extremely acid to strongly acid

Content of rock fragments: 0 to 35 percent, by volume, in the A horizon and 0 to 70 percent, by volume, in the underlying horizons

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—loam or sandy loam

Underlying horizons:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam or loamy sand

Udorthents

Depth class: Very deep
Drainage class: Somewhat excessively drained or well drained
Permeability: Varies
Location: Excavations, filled areas, or other disturbed areas used for highways or as construction sites
Parent material: Mixture of soil materials and rock fragments derived from soils underlain by siltstone, sandstone, and limestone
Slope range: 0 to 80 percent
Classification: Udorthents

Representative Pedon

A typical pedon for Udorthents is not given because the soils vary too much.

Range in Characteristics

Depth to bedrock: More than 60 inches
Reaction: Extremely acid to moderately alkaline
Content of rock fragments: 0 to 35 percent, by volume, in the A horizon and 0 to 70 percent, by volume, in the underlying horizons

A horizon:
Hue—2.5YR, 5YR, 7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 7
Chroma—1 to 8
Texture—loam, sandy loam, silt loam, clay loam, silty clay loam, or silty clay

Underlying horizons:
Hue—2.5YR, 5YR, 7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 7
Chroma—1 to 8
Texture—loam, sandy loam, silt loam, clay loam, silty clay loam, or silty clay

Weikert Series

Depth class: Shallow (fig. 31)
Drainage class: Well drained
Permeability: Moderately rapid
Landscape position: Uplands

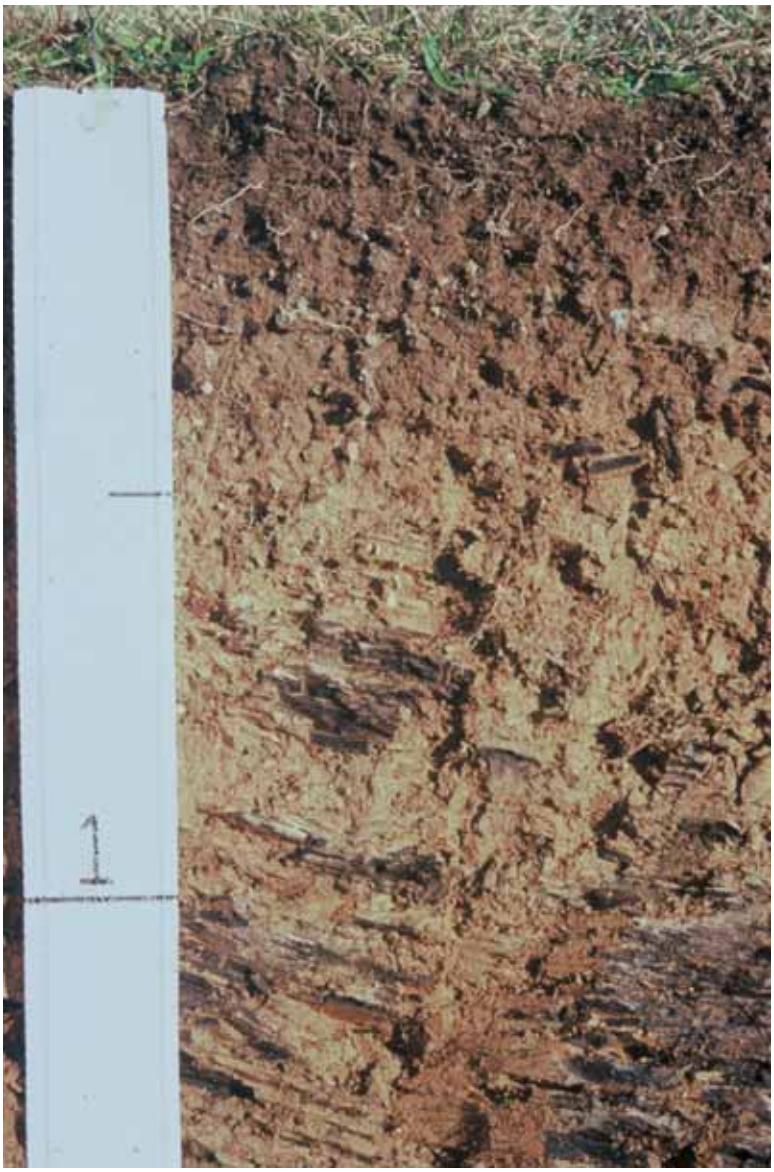

Figure 31.—Representative profile of a Weikert soil. Black and yellowish brown, highly folded, soft shale and siltstone bedrock is at a depth of about 12 inches. Depth is marked in feet.

Parent material: Acid material derived from siltstone, shale, and fine grained sandstone; primarily on the Brallier and Millboro geologic deposits
Slope range: 8 to 80 percent
Classification: Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

Representative Pedon

Weikert channery silt loam, in a wooded area; in Pocahontas County; about 600 feet north and 38 degrees west of the intersection of West Virginia Routes 39 and 92 at Rimel; USGS Minnehaha Springs topographic quadrangle; lat. 38 degrees 07 minutes 32 seconds N. and long. 79 degrees 57 minutes 10 seconds W.

Oi—0 to 1 inch; slightly decomposed forest litter.

A—1 to 2 inches; dark brown (10YR 3/3) channery silt loam; weak very fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 30 percent rock fragments; very strongly acid; abrupt smooth boundary.
E—2 to 7 inches; yellowish brown (10YR 5/4) very channery silt loam; weak very fine granular structure; very friable; many very fine, fine, medium, and coarse roots; 45 percent rock fragments; very strongly acid; abrupt smooth boundary.
Bw—7 to 12 inches; yellowish brown (10YR 5/6) very channery silt loam; moderate medium and fine subangular blocky structure; friable; common fine, medium, and coarse roots; 45 percent rock fragments; very strongly acid; abrupt smooth boundary.
C—12 to 16 inches; brownish yellow (10YR 6/6) extremely channery silt loam; massive; friable; few fine, medium, and coarse roots; 65 percent rock fragments; strongly acid; clear smooth boundary.
R—16 inches; multicolored siltstone and shale.

Range in Characteristics

Thickness of the solum: 8 to 20 inches
Depth to bedrock: 10 to 20 inches
Reaction: Very strongly acid or strongly acid
Content of rock fragments: 15 to 35 percent, by volume, in the A horizon; 35 to 60 percent, by volume, in the B horizon; 60 to 85 percent, by volume, in the C horizon; averages more than 35 percent, by volume, in the particle-size control section

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam

E horizon:
Hue—10YR
Value—5
Chroma—4 to 8
Texture—silt loam or loam

B horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or loam

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture—silt loam or loam

Zoar Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow
Landscape position: Stream terraces
Parent material: Alluvium

Slope range: 0 to 3 percent
Classification: Fine, mixed, active, mesic Aquic Hapludults

Representative Pedon

Zoar silt loam, 0 to 3 percent slopes, in a meadow southwest of Williamsburg; USGS Cornstalk topographic quadrangle; lat. 37 degrees 57 minutes 32 seconds N. and long. 80 degrees 31 minutes 02 seconds W.

Ap—0 to 9 inches; dark brown (7.5YR 3/3) silt loam; moderate fine subangular blocky structure; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Bt1—9 to 17 inches; brown (7.5YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; few very fine and fine roots; few distinct clay films on faces of peds and in pores; strongly acid; clear wavy boundary.

Bt2—17 to 25 inches; strong brown (7.5YR 4/6) silty clay; moderate medium subangular blocky structure; friable; few very fine roots; common fine faint strong brown (7.5YR 5/6) iron concentrations; common distinct clay films on faces of peds and in pores; very strongly acid; clear wavy boundary.

Bt3—25 to 43 inches; brown (7.5YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable and firm; few very fine roots; many prominent brown (7.5YR 5/3) clay films on faces of peds and in pores; common prominent black (10YR 2/1) manganese coatings; few fine prominent gray (N 6/) redoximorphic depletions and common medium distinct strong brown (7.5YR 5/6) iron concentrations; 2 percent rock fragments; very strongly acid; gradual irregular boundary.

2C—43 to 53 inches; brown (7.5YR 4/3) silty clay loam; massive; firm; common prominent black (10YR 2/1) manganese coatings; few fine prominent gray (N 6/) redoximorphic depletions and few medium distinct strong brown (7.5YR 5/6) and few fine distinct brownish yellow (10YR 6/8) iron concentrations; 35 percent rock fragments; very strongly acid; clear wavy boundary.

2Cg—53 to 65 inches; brown (7.5YR 5/2) silty clay; massive; friable; many medium prominent gray (N 6/) redoximorphic depletions and many medium distinct strong brown (7.5YR 5/6) iron concentrations; 2 percent rock fragments; very strongly acid.

Range in Characteristics

Thickness of the solum: 30 to 50 inches
Depth to bedrock: More than 60 inches
Reaction: Strongly acid or very strongly acid
Content of rock fragments: 0 to 3 percent, by volume, in the solum and as much as 35 percent, by volume, below a depth of 40 inches

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay loam or silty clay
Note—redoximorphic depletions and concentrations in lower part of horizon

C horizon:
Hue—5YR, 7.5YR, or 10YR
Value—4 to 7
Chroma—1 to 6
Texture—clay loam, silty clay loam, silty clay, or clay

Formation of the Soils

The origin and development of the soils in Greenbrier County are explained in this section. The five major factors of soil formation are identified, and their influence on the soils in the county is described. Also, the morphology of the soils is related to horizon nomenclature and the processes of horizon development.

Factors of Soil Formation

The soils in Greenbrier County formed as a result of the interaction of five major factors of soil formation—parent material, time, climate, living organisms, and topography. Each factor modifies the effect of the others. Parent material, topography, and time have resulted in the major differences among the soils in the county. Climate and living organisms generally influence soil formation uniformly throughout broad areas.

Parent Material, Time, and Climate

The character of the parent material strongly influences the time required for soil formation and the nature of the soil that forms. The soils of the county formed in residuum, colluvium, and alluvium. Most formed in material weathered from interbedded shale, siltstone, sandstone, or limestone. For example, Berks soils formed in material weathered from interbedded siltstone, shale, and fine grained sandstone and Frederick soils formed in material weathered from limestone.

The residuum is the oldest parent material in the county. Soil formation has been retarded by resistant rock, the slope, and erosion. Consequently, the profile of some of the soils that formed in residuum is less well developed than that of some of the soils that formed in younger material.

Colluvium is along footslopes and in coves. This material moved downslope from areas of soils formed in residuum. Shouns soils formed in colluvium below areas of Belmont, Calvin, and Cateache soils.

The alluvium on terraces and flood plains was washed from areas of acid and limy soils on uplands. The soil-forming processes have had considerable time to act on the material on terraces. Many additions, losses, and alterations have taken place. The resulting soils, such as those in the Allegheny series, are strongly leached and have a moderately well developed profile.

The alluvium on flood plains is the youngest parent material in the county. Most of the soils on flood plains have a weakly developed profile because the soil-forming processes have had little time to act. Potomac, Sensabaugh, and Tioga soils formed in alluvium on flood plains.

The climate is relatively uniform throughout most of the survey area, except at the higher elevations in the northwestern part of the county where the mean annual temperature is lower and the mean annual precipitation is higher. Because of the cooler temperatures and the higher amounts of rainfall in this area, the subsurface layer of the Gauley soils is leached. Mandy soils, which formed in siltstone, shale, and fine grained sandstone in areas where precipitation is greater, have a higher content

of clay than the Berks soils, which formed in the same type of parent material but in areas that receive a lower amount of rainfall. Poorly drained and very poorly drained soils are more common in areas that receive a higher amount of rainfall.

Living Organisms

Living organisms, including plants, animals, bacteria, and fungi, affect soil formation. The kind and amount of vegetation are generally responsible for the content of organic matter and color of the surface layer and are partly responsible for the content of nutrients. Earthworms and burrowing animals help to keep the soil open and porous. They mix organic material with mineral matter by moving soil to the surface. Bacteria and fungi decompose organic matter, thus releasing plant nutrients.

Human activities also affect soil formation. Clearing the forest, plowing, burning, and mining, for example, affect the characteristics of the soil. Human activities also include adding fertilizer, mixing some of the soil horizons, and moving soil material from one place to another.

Topography

Topography affects soil formation by its effect on the amount of water moving through the soil, the amount and rate of runoff, and the rate of erosion. Large amounts of water have moved through the gently sloping and strongly sloping soils in the county. This movement favors the formation of deep soils that have a moderately developed or well developed profile. On steep and very steep hillsides, less water moves through the soils and more water runs off the surface. The soil material is washed away almost as rapidly as a soil forms. As a result, the soils on many of the steeper hillsides are shallower over bedrock than the soils on the more gentle slopes.

The topography in the county favors the formation of soils on flood plains and terraces. The soils on flood plains are weakly developed, however, mainly because too little time has elapsed since the material was deposited.

Morphology of the Soils

The results of the soil-forming processes are evident in the different layers, or horizons, in the soil profile. The profile extends from the soil surface downward to material that has been little changed by the soil-forming processes. Most soils have three major horizons—the A, B, and C horizons. Subdivisions of these horizons are indicated by numbers and lowercase letters in the horizon designators.

The A horizon is the surface layer. It is the layer that has the maximum accumulation of organic matter. It is also the layer of maximum leaching, or eluviation, of clay and iron.

The B horizon underlies the A horizon and is commonly called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, or other compounds leached from the surface layer. It commonly has blocky structure and generally is firmer and lighter in color than the A horizon.

The C horizon is below the A and B horizons. It consists of material that has been modified by weathering but is little altered by the soil-forming processes.

Many processes have influenced the formation of horizons in the soils in Greenbrier County. The more important of these are the accumulation of organic matter, the leaching of soluble salts, the reduction and transfer of iron, the formation and translocation of clay minerals, and the formation of structure. These processes are continuous and have been taking place for thousands of years.

In most of the soils on uplands in the county, the B horizon is yellowish in color, mainly because of iron oxides. It has blocky structure and, in places, contains translocated clay minerals.

A fragipan has formed in the B horizon of some of the soils on footslopes. This layer is dense and brittle, has redoximorphic features, and is moderately slowly permeable or slowly permeable. The grayish colors in the fragipan are the result of gleying, or the reduction of iron, during soil formation.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

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.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6

Moderate ..... 6 to 9
High ..... 9 to 12
Very high ..... more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Bajada. A broad alluvial slope extending from the base of a mountain range out into a basin and formed by coalescence of separate alluvial fans.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.

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.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

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 milliquivalents 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.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque. A semicircular, concave, bowllike area that has steep faces primarily resulting from glacial ice and snow abrasion.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. 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.

Congeliturbate. Soil material disturbed by frost action.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

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.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the

hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the Earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine earth. That portion of the soil consisting of particles less than 2 millimeters in diameter. Particles and rock fragments 2 millimeters in diameter or larger are not included.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

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.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head out. To form a flower head.

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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

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.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. 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.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

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

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Pebble. A rounded or angular fragment of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. A collection of pebbles is referred to as gravel.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permafrost. Layers of soil, or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed continuously for a long time.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

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.

Plateau. An extensive upland mass with a relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

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

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the Earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

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.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. 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.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	3 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 35 percent
Very steep	35 to 55 percent
Extremely steep	55 to 80 percent

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the Earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

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 grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

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."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

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.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the Earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Lewisburg, West Virginia.)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snow-fall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	40.4	21.0	30.7	66	-10	28	3.23	1.75	4.74	7	9.2
February-	44.9	23.5	34.2	72	-1	52	2.90	1.90	3.86	6	6.9
March----	54.3	30.0	42.1	79	7	162	3.79	2.35	5.15	8	5.2
April----	64.1	37.5	50.8	85	18	342	3.42	2.19	4.66	7	.7
May------	72.9	46.8	59.9	87	28	607	4.21	2.80	5.51	8	.0
June-----	79.8	55.5	67.6	91	37	824	3.72	1.99	5.26	7	.0
July-----	83.2	59.8	71.5	93	45	968	4.12	2.64	5.41	7	.0
August---	82.0	58.3	70.1	92	44	926	3.49	1.80	4.99	6	.0
September	75.8	51.9	63.9	90	31	714	2.86	1.06	4.71	5	.0
October--	66.0	39.3	52.7	83	19	397	2.78	1.27	4.21	5	.2
November-	53.9	31.3	42.6	75	10	160	3.00	1.92	3.87	6	1.4
December-	44.1	24.4	34.3	68	-3	58	3.08	1.73	4.41	7	4.9
Yearly:											
Average-	63.5	39.9	51.7	---	---	---	---	---	---	---	---
Extreme-	---	---	---	94	-12	---	---	---	---	---	---
Total---	---	---	---	---	---	5,239	40.60	31.83	45.89	79	28.5

* 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 (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Lewisburg, West Virginia.)

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. 18	May 7	May 21
2 years in 10 later than--	Apr. 13	May 3	May 16
5 years in 10 later than--	Apr. 5	Apr. 23	May 8
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 7	Sept.24	Sept. 23
2 years in 10 earlier than--	Oct. 13	Oct. 1	Sept. 27
5 years in 10 earlier than--	Oct. 26	Oct. 13	Oct. 3

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Lewisburg, West Virginia.)

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	183	148	130
8 years in 10	190	156	136
5 years in 10	203	171	147
2 years in 10	215	187	159
1 year in 10	222	194	165

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AlB	Allegheny loam, 3 to 8 percent slopes	687	0.1
AlC	Allegheny loam, 8 to 15 percent slopes	345	*
An	Atkins-Philo-Potomac complex	5,725	0.9
BaE	Belmont silt loam, 15 to 35 percent slopes, very rocky	131	*
BcC	Berks channery loam, 3 to 15 percent slopes, very stony	765	0.1
BcE	Berks channery loam, 15 to 35 percent slopes, very stony	2,735	0.4
BcF	Berks channery loam, 35 to 55 percent slopes, very stony	26,763	4.1
BkG	Berks, Weikert, and Calvin soils, 55 to 80 percent slopes, very stony	9,734	1.5
BlC	Berks-Dekalb complex, 3 to 15 percent slopes, very stony	6,128	0.9
BlE	Berks-Dekalb complex, 15 to 35 percent slopes, very stony	13,551	2.1
BlF	Berks-Dekalb complex, 35 to 55 percent slopes, very stony	27,688	4.2
BrE	Berks-Weikert complex, 15 to 35 percent slopes, very stony	193	*
BrF	Berks-Weikert complex, 35 to 55 percent slopes, very stony	1,292	0.2
BtC	Blackthorn very channery loam, 3 to 15 percent slopes, extremely stony	1,768	0.3
BtE	Blackthorn very channery loam, 15 to 35 percent slopes, extremely stony	4,568	0.7
BxF	Briery-Rock outcrop complex, very steep	5,862	0.9
CbC	Calvin-Dekalb-Berks complex, 3 to 15 percent slopes, very stony	348	*
CbE	Calvin-Dekalb-Berks complex, 15 to 35 percent slopes, very stony	657	0.1
CbF	Calvin-Dekalb-Berks complex, 35 to 55 percent slopes, very stony	2,369	0.4
CeF	Caneyville-Frederick-Rock outcrop complex, karst, 35 to 60 percent slopes	14,843	2.3
CfB	Cateache silt loam, 3 to 8 percent slopes	1,549	0.2
CfC	Cateache silt loam, 8 to 15 percent slopes	6,458	1.0
CfD	Cateache silt loam, 15 to 25 percent slopes	5,729	0.9
CfE	Cateache silt loam, 25 to 35 percent slopes	4,098	0.6
CfF	Cateache silt loam, 35 to 55 percent slopes	4,988	0.8
CgC	Cateache silt loam, 3 to 15 percent slopes, very stony	2,003	0.3
CgE	Cateache silt loam, 15 to 35 percent slopes, very stony	8,077	1.2
CgF	Cateache silt loam, 35 to 55 percent slopes, very stony	33,640	5.1
Ch	Chavies fine sandy loam	2,642	0.4
CpB	Cookport loam, 3 to 8 percent slopes	1,719	0.3
CuB	Culleoka loam, 3 to 8 percent slopes	1,706	0.3
CuC	Culleoka loam, 8 to 15 percent slopes	7,167	1.1
CuD	Culleoka loam, 15 to 25 percent slopes	5,426	0.8
CyE	Culleoka loam, 25 to 35 percent slopes, very stony	8,963	1.4
CyF	Culleoka loam, 35 to 55 percent slopes, very stony	34,539	5.3
DeC	Dekalb channery sandy loam, 3 to 15 percent slopes, very stony	1,808	0.3
DeE	Dekalb channery sandy loam, 15 to 35 percent slopes, very stony	4,626	0.7
DeF	Dekalb channery sandy loam, 35 to 55 percent slopes, very stony	6,789	1.0
DhC	Dekalb-Hazleton complex, 3 to 15 percent slopes, very stony	246	*
DhE	Dekalb-Hazleton complex, 15 to 35 percent slopes, very stony	1,475	0.2
DhF	Dekalb-Hazleton complex, 35 to 55 percent slopes, very stony	1,814	0.3
DkF	Dekalb-Rock outcrop complex, 35 to 80 percent slopes, extremely stony	2,332	0.4
Du	Dunning silty clay loam, karst	1,316	0.2
ElF	Elliber extremely channery silt loam, 35 to 55 percent slopes	2,629	0.4
ErB	Ernest silt loam, 3 to 8 percent slopes	3,367	0.5
EsC	Ernest silt loam, 3 to 15 percent slopes, extremely stony	1,284	0.2
FaE	Faywood silt loam, 15 to 35 percent slopes, very rocky	86	*
FaF	Faywood silt loam, 35 to 55 percent slopes, very rocky	580	*
FkB	Frankstown silt loam, karst, 3 to 8 percent slopes	5,013	0.8
FkC	Frankstown silt loam, karst, 8 to 15 percent slopes	5,197	0.8
FkD	Frankstown silt loam, karst, 15 to 25 percent slopes	1,665	0.3
FoC	Frankstown silt loam, karst, 3 to 15 percent slopes, very rocky	862	0.1
FoE	Frankstown silt loam, karst, 15 to 35 percent slopes, very rocky	2,469	0.4
FrB	Frederick silt loam, karst, 3 to 8 percent slopes	5,498	0.8
FrC	Frederick silt loam, karst, 8 to 15 percent slopes	9,227	1.4
FrD	Frederick silt loam, karst, 15 to 25 percent slopes	3,096	0.5
FyC	Frederick-Caneyville complex, karst, 3 to 15 percent slopes, very rocky	10,063	1.5
FyE	Frederick-Caneyville complex, karst, 15 to 35 percent slopes, very rocky	25,100	3.8
GaC	Gauley channery sandy loam, 3 to 15 percent slopes, extremely stony	936	0.1
GaE	Gauley channery sandy loam, 15 to 35 percent slopes, extremely stony	70	*
GnC	Gilpin channery silt loam, 8 to 15 percent slopes	2,351	0.4
GnD	Gilpin channery silt loam, 15 to 25 percent slopes	801	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
GpC	Gilpin channery silt loam, 3 to 15 percent slopes, very stony	7,662	1.2
GpE	Gilpin channery silt loam, 15 to 35 percent slopes, very stony	9,142	1.4
Ho	Holly silt loam	294	*
KxF	Kaymine-Rock outcrop complex, very steep	6,828	1.0
LcC	Leatherbark silt loam, 0 to 15 percent slopes, very stony	313	*
LgB	Lily sandy loam, 3 to 8 percent slopes	10,884	1.7
LgC	Lily sandy loam, 8 to 15 percent slopes	13,124	2.0
LhE	Lily sandy loam, 15 to 35 percent slopes, very stony	3,883	0.6
Lo	Lobdell silt loam	1,198	0.2
MaB	Macove channery silt loam, 3 to 8 percent slopes	229	*
MaC	Macove channery silt loam, 8 to 15 percent slopes	3,137	0.5
MaD	Macove channery silt loam, 15 to 25 percent slopes	134	*
McC	Macove channery silt loam, 3 to 15 percent slopes, very stony	13,812	2.1
McE	Macove channery silt loam, 15 to 35 percent slopes, very stony	19,641	3.0
MeF	Macove-Gilpin complex, 35 to 55 percent slopes, very stony	40,917	6.2
MkC	Mandy channery silt loam, 3 to 15 percent slopes, very stony	9,652	1.5
MkE	Mandy channery silt loam, 15 to 35 percent slopes, very stony	13,057	2.0
MkF	Mandy channery silt loam, 35 to 55 percent slopes, very stony	25,860	3.9
MkG	Mandy channery silt loam, 55 to 80 percent slopes, very stony	266	*
Ml	Melvin-Lindside complex	10,688	1.6
MzC	Mertz channery silt loam, 8 to 15 percent slopes, very stony	1,925	0.3
MzE	Mertz channery silt loam, 15 to 35 percent slopes, very stony	1,795	0.3
No	Nolin silt loam	713	0.1
Ph	Philo silt loam	542	*
Po	Pope fine sandy loam	1,182	0.2
Pt	Potomac very gravelly fine sandy loam	950	0.1
PuA	Purdy silt loam, 0 to 3 percent slopes	440	*
Qu	Quarry, limestone	438	*
Se	Sensabaugh loam	1,282	0.2
SfB	Shouns channery silt loam, 3 to 8 percent slopes	982	0.1
SfC	Shouns channery silt loam, 8 to 15 percent slopes	1,922	0.3
ShC	Shouns channery silt loam, 3 to 15 percent slopes, extremely stony	2,875	0.4
ShE	Shouns channery silt loam, 15 to 35 percent slopes, extremely stony	6,319	1.0
ShF	Shouns channery silt loam, 35 to 55 percent slopes, extremely stony	983	0.1
SmC	Simoda silt loam, 3 to 15 percent slopes, very stony	1,096	0.2
SoC	Snowdog silt loam, 3 to 15 percent slopes, extremely stony	2,474	0.4
SoE	Snowdog silt loam, 15 to 35 percent slopes, extremely stony	15,619	2.4
SoF	Snowdog silt loam, 35 to 55 percent slopes, extremely stony	1,621	0.2
SvC	Summers very channery sandy loam, 0 to 15 percent slopes, very stony	2,618	0.4
Tp	Tioga-Potomac complex	2,587	0.4
TrC	Trussel silt loam, 3 to 15 percent slopes, very stony	300	*
Uf	Udifluvents-Fluvaquents complex	1,102	0.2
Ux	Udorthents, smoothed-Rock outcrop complex	2,053	0.3
W	Water	2,827	0.4
WeC	Weikert channery silt loam, 8 to 15 percent slopes	1,509	0.2
WeD	Weikert channery silt loam, 15 to 25 percent slopes	5,698	0.9
WeF	Weikert channery silt loam, 25 to 55 percent slopes	42,375	6.5
WrG	Weikert-Berks-Rough complex, 55 to 80 percent slopes, very stony	492	*
ZoA	Zoar silt loam, 0 to 3 percent slopes	4,804	0.7
	Total	655,800	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	Corn	Grass-legume hay	Kentucky bluegrass	Pasture	Tobacco
		Bu	Tons	AUM	AUM	Lbs
AlB:		115.00	3.50	5.00	7.00	---
Allegheny	2e					
AlC:		110.00	3.50	4.50	7.00	2,750
Allegheny	3e					
An:		80.00	3.00	4.50	5.50	---
Atkins	3w					
Philo	2w					
Potomac	5s					
BaE:		---	---	---	---	---
Belmont	7s					
BcC:		---	---	4.00	---	---
Berks	6s					
BcE:		---	---	---	---	---
Berks	7s					
BcF:		---	---	---	---	---
Berks	7s					
BkG:		---	---	---	---	---
Berks	7s					
Weikert	7s					
Calvin	7s					
BlC:		---	---	2.50	---	---
Berks	6s					
Dekalb	6s					
BlE:		---	---	---	---	---
Berks	7s					
Dekalb	7s					
BlF:		---	---	---	---	---
Berks	7s					
Dekalb	7s					
BrE:		---	---	---	5.50	---
Berks	7s					
Weikert	7s					
BrF:		---	---	---	---	---
Berks	7s					
Weikert	7s					
BtC:		---	---	---	---	---
Blackthorn	7s					
BtE:		---	---	---	---	---
Blackthorn	7s					

Table 5.--Land Capability and Yields Per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Grass-legume hay	Kentucky bluegrass	Pasture	Tobacco
		Bu	Tons	AUM	AUM	Lbs
BxF:		---	---	---	---	---
Briery	7s					
Rock outcrop	8s					
CbC:		---	---	2.50	---	---
Calvin	6s					
Dekalb	6s					
Berks	6s					
CbE:		---	---	---	---	---
Calvin	7s					
Dekalb	7s					
Berks	7s					
CbF:		---	---	---	---	---
Calvin	7s					
Dekalb	7s					
Berks	7s					
CeF:		---	---	---	---	---
Caneyville	7s					
Frederick	7s					
Rock outcrop	8s					
CfB:		95.00	3.50	4.50	---	---
Cateache	2e					
CfC:		90.00	3.00	4.50	---	---
Cateache	3e					
CfD:		85.00	2.50	4.00	---	---
Cateache	4e					
CfE:		---	---	4.00	---	---
Cateache	6e					
CfF:		---	---	---	---	---
Cateache	7e					
CgC:		---	---	3.00	---	---
Cateache	6s					
CgE:		---	---	---	---	---
Cateache	7s					
CgF:		---	---	---	---	---
Cateache	7s					
Ch:		120.00	4.00	5.00	7.00	2,000
Chavies	1					
CpB:		100.00	3.00	4.50	---	---
Cookport	2e					
CuB:		110.00	4.00	4.50	8.00	2,800
Culleoka	2e					
CuC:		100.00	3.50	4.50	7.00	2,600
Culleoka	3e					
CuD:		90.00	2.50	4.00	5.00	---
Culleoka	4e					

Table 5.--Land Capability and Yields Per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Grass-legume hay	Kentucky bluegrass	Pasture	Tobacco
		Bu	Tons	AUM	AUM	Lbs
CyE:		---	---	---	---	---
Culleoka	6e					
CyF:		---	---	---	---	---
Culleoka	7e					
DeC:		---	---	2.50	---	---
Dekalb	6s					
DeE:		---	---	---	---	---
Dekalb	7s					
DeF:		---	---	---	---	---
Dekalb	7s					
DhC:		---	---	2.50	---	---
Dekalb	6s					
Hazleton	6s					
DhE:		---	---	---	---	---
Dekalb	7s					
Hazleton	7s					
DhF:		---	---	---	---	---
Dekalb	7s					
Hazleton	7s					
DkF:		---	---	---	---	---
Dekalb	7s					
Rock outcrop	8s					
Du:		120.00	4.00	3.50	8.00	---
Dunning	3w					
ElF:		---	---	---	---	---
Elliber	7s					
ErB:		100.00	3.00	4.50	6.50	---
Ernest	2e					
EsC:		---	---	---	---	---
Ernest	7s					
FaE:		---	---	3.00	5.50	---
Faywood	6s					
FaF:		---	---	---	---	---
Faywood	7s					
FkB:		125.00	3.50	5.50	---	---
Frankstown	2e					
FkC:		120.00	3.50	5.50	---	---
Frankstown	3e					
FkD:		110.00	3.00	4.50	---	---
Frankstown	4e					
FoC:		---	---	5.50	---	---
Frankstown	6s					
FoE:		110.00	3.00	4.50	---	---
Frankstown	7s					

Table 5.--Land Capability and Yields Per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Grass-legume hay	Kentucky bluegrass	Pasture	Tobacco
		Bu	Tons	AUM	AUM	Lbs
FrB:		105.00	3.50	5.50	8.30	---
Frederick	2e					
FrC:		100.00	3.00	5.50	8.00	---
Frederick	3e					
FrD:		100.00	3.00	4.50	8.00	---
Frederick	4e					
FyC:		---	---	4.00	8.00	---
Frederick	6s					
Caneyville	6s					
FyE:		---	---	---	---	---
Frederick	7s					
Caneyville	7s					
GaC:		---	---	---	---	---
Gauley	7s					
GaE:		---	---	---	---	---
Gauley	7s					
GnC:		85.00	3.00	4.50	7.00	---
Gilpin	3e					
GnD:		80.00	2.50	4.00	6.00	---
Gilpin	4e					
GpC:		---	---	3.50	3.00	---
Gilpin	6s					
GpE:		---	---	---	---	---
Gilpin	7s					
Ho:		100.00	3.00	4.50	---	---
Holly	3w					
KxF:		---	---	---	---	---
Kaymine	7s					
Rock outcrop	8s					
LcC:		---	---	2.50	---	---
Leatherbark	6s					
LgB:		95.00	3.50	4.50	7.00	2,700
Lily	2e					
LgC:		85.00	3.00	4.00	6.00	2,400
Lily	3e					
LhE:		---	---	3.50	4.50	---
Lily	6s					
Lo:		120.00	3.50	5.00	---	---
Lobdell	2w					
MaB:		90.00	3.00	4.50	4.00	---
Macove	2e					
MaC:		85.00	3.00	4.00	4.00	---
Macove	3e					

Table 5.--Land Capability and Yields Per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Grass-legume hay	Kentucky bluegrass	Pasture	Tobacco
		Bu	Tons	AUM	AUM	Lbs
MaD:		75.00	3.00	3.50	3.50	---
Macove	4e					
McC:		---	---	3.50	---	---
Macove	6s					
McE:		---	---	---	---	---
Macove	7s					
MeF:		---	---	---	---	---
Macove	7s					
Gilpin	7s					
MkC:		---	---	2.00	---	---
Mandy	6s					
MkE:		---	---	---	---	---
Mandy	7s					
MkF:		---	---	---	---	---
Mandy	7s					
MkG:		---	---	---	---	---
Mandy	7s					
Ml:		80.00	3.50	4.50	7.00	---
Melvin	3w					
Lindside	2w					
MzC:		---	---	4.00	---	---
Mertz	6s					
MzE:		---	---	---	---	---
Mertz	7s					
No:		115.00	4.00	5.50	9.00	2,700
Nolin	2w					
Ph:		110.00	3.50	5.00	8.50	---
Philo	2w					
Po:		130.00	4.00	5.50	8.00	3,000
Pope	2w					
Pt:		---	2.00	3.00	---	---
Potomac	5s					
PuA:		80.00	2.50	3.00	---	---
Purdy	4w					
Qu:		---	---	---	---	---
Quarry	8s					
Se:		105.00	3.50	5.00	7.00	2,100
Sensabaugh	2w					
SfB:		120.00	4.00	5.50	6.50	2,200
Shouns	2e					
SfC:		115.00	3.50	5.00	6.50	2,200
Shouns	3e					
ShC:		---	---	---	---	---
Shouns	7s					

Table 5.--Land Capability and Yields Per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Grass-legume hay	Kentucky bluegrass	Pasture	Tobacco
		Bu	Tons	AUM	AUM	Lbs
ShE:		---	---	---	---	---
Shouns	7s					
ShF:		---	---	---	---	---
Shouns	7s					
SmC:		---	---	---	---	---
Simoda	7s					
SoC:		---	---	---	---	---
Snowdog	6s					
SoE:		---	---	---	---	---
Snowdog	7s					
SoF:		---	---	---	---	---
Snowdog	7s					
SvC:		---	---	2.00	4.00	---
Summers	6s					
Tp:		120.00	4.00	5.00	8.50	---
Tioga	2w					
Potomac	5s					
TrC:		---	---	2.00	---	---
Trussel	6s					
Uf:		---	---	---	---	---
Udifluvents	---					
Fluvaquents	---					
Ux:		---	---	---	---	---
Udorthents	---					
Rock outcrop	---					
WeC:		60.00	2.00	3.00	4.00	---
Weikert	4e					
WeD:		---	---	2.00	---	---
Weikert	6e					
WeF:		---	---	---	---	---
Weikert	7e					
WrG:		---	---	---	---	---
Weikert	7s					
Berks	7s					
Rough	7s					
ZoA:		90.00	3.00	4.50	---	---
Zoar	2w					

Table 6.--Capability Class and Subclass

Capability class	Capability subclass	Acreage
Unclassified	---	5,659
1	---	2,246
2	e	25,978
2	w	14,512
3	e	40,390
3	w	8,731
4	e	15,122
4	w	352
5	s	2,810
6	e	14,927
6	s	52,357
7	e	61,925
7	s	279,119
8	s	6,155

Table 7.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland.)

Map symbol	Map unit name
AlB	Allegheny loam, 3 to 8 percent slopes
CfB	Cateache silt loam, 3 to 8 percent slopes
Ch	Chavies fine sandy loam
CpB	Cookport loam, 3 to 8 percent slopes
CuB	Culleoka loam, 3 to 8 percent slopes
FrB	Frederick silt loam, karst, 3 to 8 percent slopes
LgB	Lily sandy loam, 3 to 8 percent slopes
Lo	Lobdell silt loam
MaB	Macove channery silt loam, 3 to 8 percent slopes
No	Nolin silt loam
Ph	Philo silt loam
Po	Pope fine sandy loam
Se	Sensabaugh loam
SfB	Shouns channery silt loam, 3 to 8 percent slopes
Tp	Tioga-Potomac complex
ZoA	Zoar silt loam, 0 to 3 percent slopes

Table 8a.--Agricultural Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:					
Allegheny	90	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
AlC:					
Allegheny	90	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
		Slope	0.63		
An:					
Atkins	35	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Too acid	0.50	Too acid	0.99
Philo	30	Very limited		Very limited	
		Filtering capacity	0.99	Flooding	1.00
				Filtering capacity	0.99
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Flooding	0.60		
Potomac	20	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Filtering capacity	0.99
		Droughty	0.89	Droughty	0.89
BaE:					
Belmont	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.94		
BcC:					
Berks	80	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Droughty	1.00
		Too acid	0.94		
BcE:					
Berks	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BcF:					
Berks	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
BkG:					
Berks	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Weikert	25	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Calvin	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Droughty	0.94	Slope	1.00
BlC:					
Berks	60	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.94	Droughty	1.00
Dekalb	30	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.94	Droughty	1.00
BlE:					
Berks	55	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Dekalb	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
BlF:					
Berks	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BlF:					
Dekalb	40	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
BrE:					
Berks	50	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Weikert	35	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
BrF:					
Berks	50	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Weikert	35	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
BtC:					
Blackthorn	75	Very limited		Very limited	
		Large stones on the surface	1.00	Low adsorption	1.00
		Large stones content	1.00	Large stones on the surface	1.00
		Filtering capacity	0.99	Too acid	1.00
BtE:					
Blackthorn	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Large stones content	1.00	Too acid	1.00
BxF:					
Briery	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.53	Cobble content	0.08
		Cobble content	0.08		
Rock outcrop	15	Not rated		Not rated	

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CbC:					
Calvin	45	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Droughty	0.94	Filtering capacity	0.99
		Large stones on the surface	0.92		
Dekalb	25	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Droughty	1.00
		Too acid	0.94		
Berks	20	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Droughty	1.00
		Too acid	0.94		
CbE:					
Calvin	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Droughty	0.94		
Dekalb	30	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Berks	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
CbF:					
Calvin	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Droughty	0.94		
Dekalb	25	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Berks	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CeF:					
Caneyville	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Droughty	0.87	Droughty	0.87
		Depth to bedrock	0.46	Depth to bedrock	0.46
Frederick	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.05	Too acid	0.21
Rock outcrop	20	Not rated		Not rated	
CfB:					
Cateache	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
		Droughty	0.71		
CfC:					
Cateache	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
		Droughty	0.71		
CfD:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.86		
CfE:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.86		
CfF:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.86		
CgC:					
Cateache	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
		Droughty	0.71		
CgE:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.86		

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CgF:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.86	Slope	1.00
Ch:					
Chavies	85	Somewhat limited		Somewhat limited	
		Too acid	0.08	Flooding	0.40
				Too acid	0.31
CpB:					
Cookport	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
CuB:					
Culleoka	90	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.86	Too acid	1.00
		Droughty	0.48	Filtering capacity	0.99
CuC:					
Culleoka	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.86	Too acid	1.00
		Slope	0.63	Filtering capacity	0.99
CuD:					
Culleoka	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.86	Slope	1.00
CyE:					
Culleoka	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.86	Slope	1.00
CyF:					
Culleoka	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.86	Slope	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DeC:					
Dekalb	75	Very limited		Very limited	
		Large stones content	1.00	Low adsorption	1.00
				Too acid	1.00
		Droughty	1.00	Droughty	1.00
		Filtering capacity	0.99		
DeE:					
Dekalb	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Too acid	1.00
				Slope	1.00
		Droughty	1.00		
DeF:					
Dekalb	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Too acid	1.00
				Slope	1.00
		Droughty	1.00		
DhC:					
Dekalb	55	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Droughty	1.00
		Too acid	0.94		
Hazleton	35	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Large stones on the surface	0.92	Filtering	0.99
		Too acid	0.86		
DhE:					
Dekalb	55	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Hazleton	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Large stones on the surface	0.92		
DhF:					
Dekalb	55	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DhF:					
Hazleton	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Large stones on the surface	0.92	Slope	1.00
DkF:					
Dekalb	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Too acid	1.00
		Droughty	1.00	Slope	1.00
Rock outcrop	40	Not rated		Not rated	
Du:					
Dunning	85	Very limited		Very limited	
		Slow water movement	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
ElF:					
Elliber	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.86	Slope	1.00
ErB:					
Ernest	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.86	Too acid	1.00
EsC:					
Ernest	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Large stones content	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
FaE:					
Faywood	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	0.81	Slope	1.00
		Depth to bedrock	0.46	Slow water movement	0.68

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FaF:					
Faywood	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	0.81	Slope	1.00
		Depth to bedrock	0.46	Slow water movement	0.68
FkB:					
Frankstown	75	Somewhat limited		Very limited	
		Too acid	0.18	Low adsorption	1.00
				Too acid	0.67
FkC:					
Frankstown	75	Somewhat limited		Very limited	
		Slope	0.63	Low adsorption	1.00
		Too acid	0.18	Too acid	0.67
				Slope	0.63
FkD:					
Frankstown	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.18	Slope	1.00
				Too acid	0.67
FoC:					
Frankstown	75	Somewhat limited		Very limited	
		Too acid	0.18	Low adsorption	1.00
		Slope	0.04	Too acid	0.67
				Slope	0.04
FoE:					
Frankstown	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.18	Slope	1.00
				Too acid	0.67
FrB:					
Frederick	80	Somewhat limited		Somewhat limited	
		Too acid	0.05	Too acid	0.21
FrC:					
Frederick	80	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Too acid	0.05	Too acid	0.21
FrD:					
Frederick	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.05	Too acid	0.21
FyC:					
Frederick	45	Somewhat limited		Somewhat limited	
		Too acid	0.05	Too acid	0.21
		Slope	0.04	Slope	0.04
Caneyville	35	Somewhat limited		Somewhat limited	
		Droughty	0.87	Droughty	0.87
		Depth to bedrock	0.46	Depth to bedrock	0.46
		Slow water movement	0.41	Slow water movement	0.31

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FyE:					
Frederick	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.05	Too acid	0.21
Caneyville	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Droughty	0.87	Droughty	0.87
		Depth to bedrock	0.46	Depth to bedrock	0.46
GaC:					
Gauley	85	Very limited		Very limited	
		Large stones on the surface	1.00	Low adsorption	1.00
		Large stones content	1.00	Large stones on the surface	1.00
		Filtering capacity	0.99	Too acid	1.00
GaE:					
Gauley	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Large stones content	1.00	Too acid	1.00
GnC:					
Gilpin	75	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Droughty	0.86	Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
GnD:					
Gilpin	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Filtering capacity	0.99	Too acid	1.00
GpC:					
Gilpin	75	Very limited		Very limited	
		Large stones on the surface	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Large stones on the surface	1.00
		Cobble content	0.99	Too acid	1.00
GpE:					
Gilpin	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Filtering capacity	0.99	Too acid	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ho:					
Holly	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Leaching	0.70		
KxF:					
Kaymine	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Cobble content	0.01	Cobble content	0.01
Rock outcrop	15	Not rated		Not rated	
LcC:					
Leatherbark	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	0.99	Low adsorption	1.00
		Large stones on the surface	0.92	Too acid	1.00
LgB:					
Lily	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.89	Too acid	1.00
		Droughty	0.60	Filtering capacity	0.99
LgC:					
Lily	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.89	Too acid	1.00
		Slope	0.63	Filtering capacity	0.99
LhE:					
Lily	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.89	Slope	1.00
Lo:					
Lobdell	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Flooding	1.00
		Too acid	0.02	Too acid	0.07
MaB:					
Macove	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.89	Too acid	1.00
				Filtering capacity	0.99

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MaC:					
Macove	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.89	Filtering capacity	0.99
		Slope	0.63		
MaD:					
Macove	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.89		
McC:					
Macove	80	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.89	Filtering capacity	0.99
		Large stones content	0.53		
McE:					
Macove	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.89		
MeF:					
Macove	55	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Slope	1.00
		Too acid	0.89		
Gilpin	30	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Filtering capacity	0.99	Too acid	1.00
MkC:					
Mandy	85	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
				Droughty	1.00
		Large stones on the surface	0.92		
MkE:					
Mandy	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MkF:					
Mandy	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
MkG:					
Mandy	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Ml:					
Melvin	50	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Runoff	0.40		
Lindside	35	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Flooding	1.00
		Flooding	0.60	Depth to saturated zone	0.95
MzC:					
Mertz	75	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Large stones on the surface	0.92	Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
MzE:					
Mertz	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Large stones on the surface	0.92	Slope	1.00
No:					
Nolin	80	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
Ph:					
Philo	75	Very limited		Very limited	
		Filtering capacity	0.99	Flooding	1.00
		Depth to saturated zone	0.95	Filtering capacity	0.99
		Flooding	0.60	Depth to saturated zone	0.95
Po:					
Pope	75	Somewhat limited		Very limited	
		Too acid	0.73	Flooding	1.00
		Flooding	0.60	Too acid	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Pt:					
Potomac	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Filtering capacity	0.99
		Droughty	0.89	Droughty	0.89
PuA:					
Purdy	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Too acid	0.73	Too acid	1.00
Qu:					
Quarry	80	Not rated		Not rated	
Se:					
Sensabaugh	80	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
SfB:					
Shouns	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.86	Too acid	1.00
				Filtering capacity	0.99
SfC:					
Shouns	85	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
		Too acid	0.86	Too acid	1.00
		Slope	0.63	Filtering capacity	0.99
ShC:					
Shouns	80	Very limited		Very limited	
		Large stones content	1.00	Low adsorption	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too acid	0.86	Filtering capacity	0.99
ShE:					
Shouns	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
ShF:					
Shouns	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SmC:					
Simoda	75	Very limited		Very limited	
		Slow water movement	1.00	Low adsorption	1.00
				Too acid	1.00
		Large stones content	1.00	Slow water movement	1.00
		Filtering capacity	0.99		
SoC:					
Snowdog	75	Very limited		Very limited	
		Large stones on the surface	1.00	Low adsorption	1.00
				Large stones on the surface	1.00
		Large stones content	1.00	Too acid	1.00
		Dense layer	1.00		
SoE:					
Snowdog	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Large stones content	1.00	Too acid	1.00
SoF:					
Snowdog	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Large stones content	1.00	Too acid	1.00
SvC:					
Summers	75	Very limited		Very limited	
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Droughty	0.99	Filtering capacity	0.99
		Large stones on the surface	0.92		
Tp:					
Tioga	55	Very limited		Very limited	
		Filtering capacity	0.99	Flooding	1.00
				Low adsorption	1.00
		Too acid	0.86	Too acid	1.00
		Flooding	0.60		
Potomac	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Filtering capacity	0.99
		Droughty	0.89	Droughty	0.89
TrC:					
Trussel	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	0.99	Low adsorption	1.00
				Too acid	1.00
		Too acid	0.89		

Table 8a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Uf:					
Udifluvents	45	Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated	
Ux:					
Udorthents	60	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	
WeC:					
Weikert	80	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Low adsorption	1.00
WeD:					
Weikert	75	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
WeF:					
Weikert	75	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
WrG:					
Weikert	40	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Berks	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Too acid	1.00
		Filtering capacity	0.99	Slope	1.00
Rough	15	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Slope	1.00
ZoA:					
Zoar	80	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Too acid	0.99
		Too acid	0.50	Depth to saturated zone	0.99

Table 8b.--Agricultural Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:					
Allegheny	90	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too steep	0.32		
AlC:					
Allegheny	90	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
		Filtering capacity	0.99	Too steep	1.00
An:					
Atkins	35	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Too acid	0.99	Seepage	1.00
Philo	30	Very limited		Very limited	
		Filtering capacity	0.99	Flooding	1.00
		Depth to saturated zone	0.95	Seepage	1.00
		Too acid	0.91	Depth to saturated zone	0.95
Potomac	20	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Seepage	1.00
		Droughty	0.89		
BaE:					
Belmont	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
BcC:					
Berks	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
BcE:					
Berks	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BcF:					
Berks	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
BkG:					
Berks	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Weikert	25	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
Calvin	20	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
BlC:					
Berks	60	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
Dekalb	30	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
BlE:					
Berks	55	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Dekalb	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
BlF:					
Berks	45	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Dekalb	40	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
BrE:					
Berks	50	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BrE:					
Weikert	35	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
BrF:					
Berks	50	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Weikert	35	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
BtC:					
Blackthorn	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Too acid	1.00
				Too steep	0.50
		Too steep	1.00		
BtE:					
Blackthorn	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Too acid	1.00
				Too steep	1.00
		Too steep	1.00		
BxF:					
Briery	75	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Cobble content	0.08	Too steep	1.00
				Cobble content	0.02
Rock outcrop	15	Not rated		Not rated	
CbC:					
Calvin	45	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Too acid	1.00
Dekalb	25	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
Berks	20	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
CbE:					
Calvin	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CbE:					
Dekalb	30	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Berks	20	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
CbF:					
Calvin	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Dekalb	25	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Berks	20	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
CeF:					
Caneyville	40	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	0.87	Depth to bedrock	1.00
				Too steep	1.00
Frederick	30	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.21	Too steep	1.00
				Too acid	0.21
Rock outcrop	20	Not rated		Not rated	
CfB:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Filtering capacity	0.99	Depth to bedrock	1.00
				Too acid	1.00
		Droughty	0.71		
CfC:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Too acid	1.00
CfD:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CfE:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
CfF:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
CgC:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Too acid	1.00
CgE:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
CgF:					
Cateache	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Ch:					
Chavies	85	Somewhat limited		Very limited	
		Too acid	0.31	Seepage	1.00
				Flooding	0.40
				Too acid	0.31
CpB:					
Cookport	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
				Depth to saturated zone	1.00
		Too acid	1.00		
		Slow water movement	1.00	Too acid	1.00
CuB:					
Culleoka	90	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Filtering capacity	0.99	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	0.50		
CuC:					
Culleoka	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Too acid	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CuD:					
Culleoka	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
CyE:					
Culleoka	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
CyF:					
Culleoka	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
DeC:					
Dekalb	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
DeE:					
Dekalb	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
DeF:					
Dekalb	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
DhC:					
Dekalb	55	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
Hazleton	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
		Filtering capacity	0.99	Cobble content	0.83
DhE:					
Dekalb	55	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Hazleton	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DhF:					
Dekalb	55	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Hazleton	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
DkF:					
Dekalb	45	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Rock outcrop	40	Not rated		Not rated	
Du:					
Dunning	85	Very limited		Very limited	
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
ElF:					
Elliber	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
ErB:					
Ernest	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Too acid	1.00	Depth to saturated zone	1.00
		Filtering capacity	0.99	Too acid	1.00
EsC:					
Ernest	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Too acid	1.00	Depth to saturated zone	1.00
		Too steep	1.00	Too acid	1.00
FaE:					
Faywood	75	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water movement	0.68	Too steep	1.00
				Seepage	1.00
FaF:					
Faywood	75	Very limited		Very limited	
		Too steep	1.00	Depth to bedrock	1.00
		Slow water movement	0.68	Too steep	1.00
				Seepage	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FkB:					
Frankstown	75	Somewhat limited		Very limited	
		Too steep	0.68	Seepage	1.00
		Too acid	0.67	Depth to bedrock	0.82
				Too acid	0.67
FkC:					
Frankstown	75	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.67	Too steep	1.00
				Depth to bedrock	0.82
FkD:					
Frankstown	75	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	0.67	Seepage	1.00
				Depth to bedrock	0.82
FoC:					
Frankstown	75	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.67	Depth to bedrock	0.82
				Too acid	0.67
FoE:					
Frankstown	75	Very limited		Very limited	
		Too steep	1.00	Too steep	1.00
		Too acid	0.67	Seepage	1.00
				Depth to bedrock	0.82
FrB:					
Frederick	80	Somewhat limited		Very limited	
		Too steep	0.68	Seepage	1.00
		Too acid	0.21	Too acid	0.21
FrC:					
Frederick	80	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.21	Too steep	1.00
				Too acid	0.21
FrD:					
Frederick	80	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.21	Too steep	1.00
				Too acid	0.21
FyC:					
Frederick	45	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.21	Too steep	0.50
				Too acid	0.21
Caneyville	35	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	0.87	Depth to bedrock	1.00
		Depth to bedrock	0.46	Too steep	0.50

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FyE:					
Frederick	40	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Too acid	0.21	Too steep	1.00
				Too acid	0.21
Caneyville	40	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Droughty	0.87	Depth to bedrock	1.00
				Too steep	1.00
GaC:					
Gauley	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	1.00		
GaE:					
Gauley	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	1.00		
GnC:					
Gilpin	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Too acid	1.00
GnD:					
Gilpin	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	1.00		
GpC:					
Gilpin	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	1.00		
GpE:					
Gilpin	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	1.00		
Ho:					
Holly	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
				Seepage	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
KxF:					
Kaymine	70	Very limited		Very limited	
		Too steep	1.00	Seepage	1.00
		Cobble content	0.01	Too steep	1.00
Rock outcrop	15	Not rated		Not rated	
LcC:					
Leatherbark	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
				Depth to saturated zone	1.00
		Too acid	1.00		
		Too steep	1.00	Depth to bedrock	1.00
LgB:					
Lily	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Filtering capacity	0.99	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	0.68		
LgC:					
Lily	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Too acid	1.00
LhE:					
Lily	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Lo:					
Lobdell	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
				Depth to saturated zone	1.00
		Flooding	0.60		
		Too acid	0.07	Seepage	1.00
MaB:					
Macove	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Filtering capacity	0.99	Too acid	1.00
				Cobble content	0.64
		Too steep	0.68		
MaC:					
Macove	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
		Filtering capacity	0.99	Too steep	1.00
MaD:					
Macove	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
McC:					
Macove	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
		Filtering capacity	0.99	Cobble content	0.64
McE:					
Macove	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
MeF:					
Macove	55	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
Gilpin	30	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Depth to bedrock	1.00
				Too acid	1.00
		Too steep	1.00		
MkC:					
Mandy	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too acid	1.00
MkE:					
Mandy	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
MkF:					
Mandy	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
MkG:					
Mandy	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00
Ml:					
Melvin	50	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
				Seepage	1.00
Lindside	35	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Flooding	1.00
		Flooding	0.60	Seepage	1.00
				Depth to saturated zone	0.95

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MzC:					
Mertz	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
		Filtering capacity	0.99	Too steep	1.00
MzE:					
Mertz	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
No:					
Nolin	80	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
				Seepage	1.00
Ph:					
Philo	75	Very limited		Very limited	
		Filtering capacity	0.99	Flooding	1.00
				Seepage	1.00
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Too acid	0.91		
Po:					
Pope	75	Very limited		Very limited	
		Too acid	1.00	Flooding	1.00
		Flooding	0.60	Seepage	1.00
				Too acid	1.00
Pt:					
Potomac	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Seepage	1.00
		Droughty	0.89		
PuA:					
Purdy	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	1.00	Seepage	0.62
Qu:					
Quarry	80	Not rated		Not rated	
Se:					
Sensabaugh	80	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
				Seepage	1.00
SfB:					
Shouns	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Filtering capacity	0.99	Too acid	1.00
		Too steep	0.68		

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SfC:					
Shouns	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
		Filtering capacity	0.99	Too steep	1.00
ShC:					
Shouns	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
		Filtering capacity	0.99	Too steep	0.50
ShE:					
Shouns	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
ShF:					
Shouns	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Too acid	1.00
				Too steep	1.00
SmC:					
Simoda	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Slow water movement	1.00	Too acid	1.00
		Too steep	1.00	Depth to saturated zone	0.99
SoC:					
Snowdog	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Too acid	1.00
		Too steep	1.00	Depth to saturated zone	0.99
SoE:					
Snowdog	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Too acid	1.00
		Too steep	1.00	Too steep	1.00
SoF:					
Snowdog	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Large stones on the surface	1.00	Too acid	1.00
		Too steep	1.00	Too steep	1.00
SvC:					
Summers	75	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
		Filtering capacity	0.99	Too acid	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Tp:					
Tioga	55	Very limited		Very limited	
		Too acid	1.00	Flooding	1.00
		Filtering capacity	0.99	Seepage	1.00
				Too acid	1.00
		Flooding	0.60		
Potomac	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Seepage	1.00
		Droughty	0.89		
TrC:					
Trussel	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
				Depth to saturated zone	1.00
		Too acid	1.00		
		Too steep	1.00	Too acid	1.00
Uf:					
Udifluvents	45	Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated	
Ux:					
Udorthents	60	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	
WeC:					
Weikert	80	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
WeD:					
Weikert	75	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
WeF:					
Weikert	75	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
WrG:					
Weikert	40	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
Berks	35	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep	1.00	Depth to bedrock	1.00
				Too acid	1.00

Table 8b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WrG:					
Rough	15	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep	1.00	Too steep	1.00
ZoA:					
Zoar	80	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.99	Too acid	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	

Table 8c.--Agricultural Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:					
Allegheny	90	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
				Filtering capacity	0.99
		Too acid	0.67		
		Slope	0.12	Too steep	0.32
AlC:					
Allegheny	90	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
		Too acid	0.67		
An:					
Atkins	35	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00	Too acid	0.99
Philo	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Slow water movement	1.00	Depth to saturated zone	0.95
		Flooding	0.60	Too acid	0.91
Potomac	20	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.62	Filtering capacity	0.99
BaE:					
Belmont	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	1.00		
BcC:					
Berks	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
BcE:					
Berks	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BcF:					
Berks	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
BkG:					
Berks	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
Weikert	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
Calvin	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
BlC:					
Berks	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
Dekalb	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
BlE:					
Berks	55	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
Dekalb	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
BlF:					
Berks	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
Dekalb	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
BrE:					
Berks	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BrE:					
Weikert	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
BrF:					
Berks	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
Weikert	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
BtC:					
Blackthorn	75	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Slope	1.00	Large stones on the surface	1.00
				Too steep	1.00
BtE:					
Blackthorn	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Large stones on the surface	1.00
				Too steep	1.00
BxF:					
Briery	75	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	0.62	Cobble content	0.08
		Cobble content	0.02		
Rock outcrop	15	Not rated		Not rated	
CbC:					
Calvin	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
Dekalb	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CbE:					
Calvin	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
Dekalb	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
Berks	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
CbF:					
Calvin	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
Dekalb	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
Berks	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
CeF:					
Caneyville	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
Frederick	30	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.21
Rock outcrop	20	Not rated		Not rated	
CfB:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too acid	1.00
		Slope	0.50	Filtering capacity	0.99
CfC:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CfD:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
CfE:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
CfF:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
CgC:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too acid	1.00
		Slope	1.00	Too steep	1.00
CgE:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
CgF:					
Cateache	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
Ch:					
Chavies	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.32	Too acid	0.31
CpB:					
Cookport	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too acid	1.00
		Depth to bedrock	1.00	Filtering capacity	0.99
CuB:					
Culleoka	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	0.62	Too acid	1.00
		Too acid	0.55	Filtering capacity	0.99

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CuC:					
Culleoka	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep	1.00
CuD:					
Culleoka	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep	1.00
CyE:					
Culleoka	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep	1.00
CyF:					
Culleoka	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep	1.00
DeC:					
Dekalb	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
DeE:					
Dekalb	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
DeF:					
Dekalb	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
DhC:					
Dekalb	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
Hazleton	35	Very limited		Very limited	
		Depth to bedrock	1.00	Too acid	1.00
		Slope	1.00	Too steep	1.00
		Cobble content	0.98	Filtering capacity	0.99

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
DhE:					
Dekalb	55	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
Hazleton	35	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Cobble content	0.98		
DhF:					
Dekalb	55	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
Hazleton	35	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Cobble content	0.98		
DkF:					
Dekalb	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.91	Too steep	1.00
Rock outcrop	40	Not rated		Not rated	
Du:					
Dunning	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.96
ElF:					
Elliber	80	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep	1.00
		Too acid	0.14		
ErB:					
Ernest	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too acid	1.00
		Slope	0.50	Filtering capacity	0.99
EsC:					
Ernest	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too acid	1.00
		Slope	1.00	Too steep	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FaE:					
Faywood	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
FaF:					
Faywood	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
FkB:					
Frankstown	75	Very limited		Somewhat limited	
		Depth to bedrock	1.00	Depth to bedrock	0.82
		Slow water movement	1.00	Too steep	0.68
		Slope	0.50	Too acid	0.67
FkC:					
Frankstown	75	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.82
		Slow water movement	1.00		
FkD:					
Frankstown	75	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.82
		Slow water movement	1.00		
FoC:					
Frankstown	75	Very limited		Very limited	
		Depth to bedrock	1.00	Too steep	1.00
		Slow water movement	1.00	Depth to bedrock	0.82
		Slope	1.00	Too acid	0.67
FoE:					
Frankstown	75	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.82
		Slow water movement	1.00		
FrB:					
Frederick	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Too steep	0.68
		Slope	0.50	Too acid	0.21
FrC:					
Frederick	80	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.21

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FrD:					
Frederick	80	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.21
FyC:					
Frederick	45	Very limited		Very limited	
		Slow water movement	1.00	Too steep	1.00
		Slope	1.00	Too acid	0.21
Caneyville	35	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Slope	1.00		
FyE:					
Frederick	40	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	1.00	Too acid	0.21
Caneyville	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep	1.00
		Depth to bedrock	1.00		
GaC:					
Gauley	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Cobble content	0.78	Large stones on the surface	1.00
GaE:					
Gauley	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.78	Large stones on the surface	1.00
GnC:					
Gilpin	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
GnD:					
Gilpin	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Large stones on the surface	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
GpC:					
Gilpin	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too acid	1.00
				Large stones on the surface	1.00
		Slope	1.00		
GpE:					
Gilpin	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Large stones on the surface	1.00
Ho:					
Holly	90	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00		
KxF:					
Kaymine	70	Very limited		Very limited	
		Slope	1.00	Too steep	1.00
		Slow water movement	0.62	Cobble content	0.01
Rock outcrop	15	Not rated		Not rated	
LcC:					
Leatherbark	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
LgB:					
Lily	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	0.62	Too acid	1.00
		Slope	0.50	Filtering capacity	0.99
LgC:					
Lily	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep	1.00
LhE:					
Lily	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Lo:					
Lobdell	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60	Too acid	0.07
MaB:					
Macove	85	Somewhat limited		Very limited	
		Cobble content	0.90	Too acid	1.00
		Slope	0.50	Filtering capacity	0.99
		Slow water movement	0.32	Too steep	0.68
MaC:					
Macove	85	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Cobble content	0.90	Too steep	1.00
		Slow water movement	0.32		
MaD:					
Macove	80	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Cobble content	0.90	Too steep	1.00
		Slow water movement	0.32		
McC:					
Macove	80	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Cobble content	0.90	Too steep	1.00
		Slow water movement	0.32	Filtering capacity	0.99
McE:					
Macove	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Cobble content	0.90	Too steep	1.00
		Slow water movement	0.32		
MeF:					
Macove	55	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Cobble content	0.90	Too steep	1.00
		Slow water movement	0.32		
Gilpin	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Large stones on the surface	1.00
MkC:					
Mandy	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too acid	1.00
		Slope	1.00	Too steep	1.00

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MkE:					
Mandy	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
MkF:					
Mandy	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
MkG:					
Mandy	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
Ml:					
Melvin	50	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00		
Lindside	35	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60		
MzC:					
Mertz	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
		Too acid	0.55		
MzE:					
Mertz	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
		Too acid	0.55		
No:					
Nolin	80	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Flooding	0.60
		Slow water movement	1.00		
		Flooding	0.60		

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ph:					
Philo	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Slow water movement	1.00	Depth to saturated zone	0.95
		Flooding	0.60	Too acid	0.91
Po:					
Pope	75	Somewhat limited		Very limited	
		Slow water movement	0.62	Too acid	1.00
		Flooding	0.60	Flooding	0.60
		Too acid	0.14		
Pt:					
Potomac	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.62	Filtering capacity	0.99
PuA:					
Purdy	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too acid	1.00
		Too acid	0.14	Slow water movement	0.96
Qu:					
Quarry	80	Not rated		Not rated	
Se:					
Sensabaugh	80	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Flooding	0.60
		Slow water movement	0.62		
		Flooding	0.60		
SfB:					
Shouns	85	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.55	Filtering capacity	0.99
		Slope	0.50	Too steep	0.68
SfC:					
Shouns	85	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
		Too acid	0.55		
ShC:					
Shouns	80	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Slope	1.00	Too steep	1.00
		Too acid	0.55	Filtering capacity	0.99

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ShE:					
Shouns	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
		Too acid	0.55		
ShF:					
Shouns	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Too steep	1.00
		Too acid	0.55		
SmC:					
Simoda	75	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
				Too steep	1.00
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Depth to bedrock	1.00		
SoC:					
Snowdog	75	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
				Large stones on the surface	1.00
		Depth to saturated zone	1.00	Too steep	1.00
		Slope	1.00		
SoE:					
Snowdog	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Large stones on the surface	1.00
		Depth to saturated zone	1.00	Too steep	1.00
SoF:					
Snowdog	75	Very limited		Very limited	
		Slope	1.00	Too acid	1.00
		Slow water movement	1.00	Large stones on the surface	1.00
		Depth to saturated zone	1.00	Too steep	1.00
SvC:					
Summers	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too acid	1.00
		Too acid	0.67	Too steep	1.00
Tp:					
Tioga	55	Somewhat limited		Very limited	
		Slow water movement	0.62	Too acid	1.00
		Flooding	0.60	Filtering capacity	0.99
				Flooding	0.60

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Tp:					
Potomac	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.62	Filtering capacity	0.99
TrC:					
Trussel	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too acid	1.00
		Slope	1.00	Too steep	1.00
Uf:					
Udifluvents	45	Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated	
Ux:					
Udorthents	60	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	
WeC:					
Weikert	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
WeD:					
Weikert	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
WeF:					
Weikert	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
WrG:					
Weikert	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep	1.00
Berks	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Cobble content	0.73	Too steep	1.00
Rough	15	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep	1.00
		Too acid	0.42		

Table 8c.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ZoA:					
Zoar	80	Very limited		Very limited	
		Slow water movement	1.00	Too acid	0.99
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
				Slow water movement	0.96

Table 9.--Forestland Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
AlB:				
Allegheny	northern red oak	80	62	northern red oak, eastern white pine, white oak
	eastern white pine	90	166	
	white oak	75	57	
AlC:				
Allegheny	northern red oak	80	62	black walnut, eastern white pine, northern red oak, shortleaf pine, white ash, white oak, yellow-poplar
	eastern white pine	90	166	
	white oak	75	57	
An:				
Atkins	pin oak	80	62	eastern white pine, white spruce
	American sycamore	---	---	
	river birch	---	---	
	red maple	---	---	
	eastern white pine	---	---	
Philo	northern red oak	86	68	eastern white pine, yellow-poplar
	white oak	85	67	
	eastern white pine	---	---	
	river birch	---	---	
	American sycamore	---	---	
Potomac	northern red oak	70	52	American sycamore, black walnut, eastern white pine, Japanese larch, northern red oak, white oak
	white oak	70	52	
	eastern white pine	80	144	
	river birch	---	---	
	American sycamore	---	---	
BaE:				
Belmont	northern red oak	80	62	black walnut, eastern white pine, yellow-poplar
	hickory	---	---	
	American beech	---	---	
	sugar maple	80	50	
	black walnut	---	---	
BcC:				
Berks	northern red oak	60	43	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	60	43	
	hickory	---	---	
	eastern white pine	70	121	
	red maple	---	---	
	chestnut oak	60	43	
BcE:				
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	hickory	---	---	
	eastern white pine	70	121	
	red maple	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
BcF:				
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	hickory	---	121	
	eastern white pine	70	---	
	red maple	---	---	
BkG:				
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	hickory	---	121	
	eastern white pine	70	---	
	red maple	---	---	
Weikert	northern red oak	50	34	eastern white pine, shortleaf pine, Virginia pine
	chestnut oak	50	34	
	scarlet oak	50	34	
	white oak	50	34	
	pitch pine	50	---	
	hickory	---	---	
Calvin	northern red oak	70	52	eastern white pine, red pine, Virginia pine
	eastern hemlock	---	---	
	white oak	70	52	
	red maple	---	---	
	hickory	---	---	
BlC:				
Berks	northern red oak	60	43	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	60	43	
	hickory	---	---	
	red maple	---	---	
	chestnut oak	60	43	
Dekalb	northern red oak	60	43	Austrian pine, eastern white pine, Japanese larch, red pine
	white oak	60	43	
	hickory	---	---	
	chestnut oak	60	43	
BlE:				
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	red maple	---	---	
	yellow buckeye	---	---	
	black cherry	---	---	
Dekalb	northern red oak	60	43	eastern white pine, Norway spruce, Virginia pine, white spruce
	white oak	60	43	
	red maple	---	---	
	yellow buckeye	---	---	
BlF:				
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	red maple	---	---	
	yellow buckeye	---	---	
	black cherry	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
BlF:				
Dekalb	northern red oak	60	43	eastern white pine, Norway spruce, Virginia pine, white spruce
	white oak	60	43	
	red maple	---	---	
	yellow buckeye	---	---	
BrE:				
Berks	northern red oak	65	48	---
	white oak	65	48	
	eastern white pine	70	121	
	red maple	---	---	
	hickory	---	---	
Weikert	northern red oak	50	34	---
	chestnut oak	50	34	
	scarlet oak	50	34	
	white oak	50	34	
	pitch pine	50	---	
	hickory	---	---	
BrF:				
Berks	northern red oak	65	48	---
	white oak	65	48	
	eastern white pine	70	121	
	red maple	---	---	
	hickory	---	---	
Weikert	northern red oak	50	34	---
	chestnut oak	50	34	
	scarlet oak	50	34	
	white oak	50	34	
	pitch pine	50	---	
	hickory	---	---	
BtC:				
Blackthorn	northern red oak	70	52	black walnut, eastern white pine, Japanese larch, Norway spruce, yellow-poplar
	white oak	70	52	
	eastern white pine	80	144	
	cucumbertree	75	---	
	black locust	---	---	
BtE:				
Blackthorn	northern red oak	70	52	black walnut, eastern white pine, Japanese larch, Norway spruce, yellow-poplar
	white oak	70	52	
	eastern white pine	80	144	
	cucumbertree	75	---	
	black locust	---	---	
BxF:				
Briery	red pine	45	54	Norway spruce, red pine, Scotch pine
	Scotch pine	45	---	
	black locust	---	---	
Rock outcrop	---	---	---	---

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
CbC:				
Calvin	northern red oak	65	48	eastern white pine, red pine, Virginia pine
	white oak	65	48	
	hickory	---	---	
	red maple	---	---	
	black locust	---	---	
Dekalb	northern red oak	60	43	Austrian pine, eastern white pine, Japanese larch, red pine
	white oak	60	43	
	chestnut oak	60	43	
	pitch pine	---	---	
Berks	northern red oak	60	43	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	60	43	
	chestnut oak	60	43	
	red maple	---	---	
	eastern white pine	70	121	
CbE:				
Calvin	northern red oak	70	52	eastern white pine, red pine, Virginia pine
	white oak	70	52	
	hickory	---	---	
	red maple	---	---	
	black locust	---	---	
Dekalb	northern red oak	60	43	eastern white pine, Norway spruce, Virginia pine, white spruce
	white oak	60	43	
	hickory	---	---	
	red maple	---	---	
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	eastern white pine	70	121	
	red maple	---	---	
CbF:				
Calvin	northern red oak	70	52	eastern white pine, red pine, Virginia pine
	white oak	70	52	
	hickory	---	---	
	red maple	---	---	
	black locust	---	---	
Dekalb	northern red oak	60	43	eastern white pine, Norway spruce, Virginia pine, white spruce
	white oak	60	43	
	hickory	---	---	
	red maple	---	---	
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	eastern white pine	70	121	
	red maple	---	---	
CeF:				
Caneyville	northern red oak	70	52	---
	white oak	60	43	
	hickory	---	---	
	eastern redcedar	---	---	
	black walnut	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
CeF:				
Frederick	northern red oak	75	57	---
	white oak	75	57	
	hickory	---	---	
	eastern redcedar	---	---	
	black walnut	---	---	
Rock outcrop	---	---	---	---
CfB:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	
CfC:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	
CfD:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	
CfE:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	
CfF:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	
CgC:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	
CgE:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
CgF:				
Cateache	northern red oak	80	62	black cherry, black locust, Norway spruce
	black cherry	80	50	
	cucumbertree	80	---	
	American beech	---	---	
	sugar maple	80	---	
Ch:				
Chavies	northern red oak	80	62	black walnut, eastern white pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	yellow-poplar	90	90	
	red maple	---	---	
	American sycamore	---	---	
	eastern white pine	---	---	
CpB:				
Cookport	northern red oak	76	67	---
	black cherry	86	---	
	yellow-poplar	90	---	
	white oak	---	---	
CuB:				
Culleoka	northern red oak	80	62	eastern white pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	white oak	80	62	
	American beech	---	---	
	American basswood	---	---	
	hickory	---	---	
CuC:				
Culleoka	northern red oak	80	62	eastern white pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	white oak	80	62	
	American beech	---	---	
	American basswood	---	---	
	hickory	---	---	
CuD:				
Culleoka	northern red oak	80	62	eastern white pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	white oak	80	62	
	American beech	---	---	
	American basswood	---	---	
	eastern hemlock	---	---	
CyE:				
Culleoka	northern red oak	80	62	eastern white pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	white oak	80	62	
	American beech	---	---	
	American basswood	---	---	
	eastern hemlock	---	---	
CyF:				
Culleoka	northern red oak	80	62	eastern white pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	white oak	80	62	
	American beech	---	---	
	American basswood	---	---	
	eastern hemlock	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
DeC:				
Dekalb	northern red oak	60	43	---
	white oak	60	43	
	chestnut oak	60	43	
	hickory	---	---	
	red maple	---	---	
DeE:				
Dekalb	northern red oak	60	43	---
	white oak	60	43	
	red maple	---	---	
	eastern white pine	---	---	
DeF:				
Dekalb	northern red oak	60	43	---
	white oak	60	43	
	red maple	---	---	
	eastern white pine	---	---	
DhC:				
Dekalb	northern red oak	60	43	Austrian pine, eastern white pine, Japanese larch, red pine
	white oak	60	43	
	chestnut oak	60	43	
	hickory	---	---	
	red maple	---	---	
Hazleton	northern red oak	70	52	Austrian pine, black cherry, eastern white pine, Japanese larch, Norway spruce
	white oak	70	52	
	eastern white pine	---	---	
	red maple	---	---	
DhE:				
Dekalb	northern red oak	60	43	eastern white pine, Norway spruce, Virginia pine, white spruce
	white oak	60	43	
	red maple	---	---	
	eastern white pine	---	---	
Hazleton	northern red oak	70	52	Austrian pine, black cherry, eastern white pine, Japanese larch, Norway spruce
	white oak	70	52	
	red maple	---	---	
	eastern hemlock	---	---	
	eastern white pine	---	---	
DhF:				
Dekalb	northern red oak	60	43	eastern white pine, Norway spruce, Virginia pine, white spruce
	white oak	60	43	
	red maple	---	---	
	eastern white pine	---	---	
Hazleton	northern red oak	70	52	Austrian pine, black cherry, eastern white pine, Japanese larch, Norway spruce
	white oak	70	52	
	red maple	---	---	
	eastern hemlock	---	---	
	eastern white pine	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
DkF:				
Dekalb	northern red oak	60	52	---
	white oak	60	52	
	red maple	---	---	
	eastern white pine	---	---	
Rock outcrop	---	---	---	---
Du:				
Dunning	pin oak	95	77	---
	American sycamore	---	---	
	sugar maple	90	55	
ElF:				
Elliber	northern red oak	85	67	black locust, black walnut, eastern white pine, European larch, Norway spruce, yellow-poplar
	red maple	---	---	
	hickory	---	---	
	eastern white pine	95	176	
	eastern hemlock	---	---	
ErB:				
Ernest	northern red oak	80	62	eastern white pine, Japanese larch, Norway spruce
	white ash	80	80	
	sugar maple	80	50	
	yellow-poplar	90	90	
EsC:				
Ernest	northern red oak	80	62	---
	white ash	80	80	
	sugar maple	80	50	
	yellow-poplar	90	90	
FaE:				
Faywood	northern red oak	70	52	eastern white pine, northern red oak, white ash, white oak
	white oak	60	43	
	hickory	---	---	
	eastern white pine	75	132	
	black locust	---	---	
FaF:				
Faywood	northern red oak	70	52	eastern white pine, northern red oak, white ash, white oak
	white oak	60	43	
	hickory	---	---	
	eastern white pine	75	132	
	black locust	---	---	
FkB:				
Frankstown	northern red oak	79	61	black walnut, eastern white pine, European larch, Norway spruce, Virginia pine
	white oak	80	62	
	hickory	---	---	
	black locust	---	---	
	red maple	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
FkC:				
Frankstown	northern red oak	79	61	black walnut, eastern white pine, European larch, Norway spruce, Virginia pine
	white oak	80	62	
	hickory	---	---	
	black locust	---	---	
	red maple	---	---	
FkD:				
Frankstown	northern red oak	79	61	black walnut, eastern white pine, European larch, Norway spruce, Virginia pine
	white oak	80	62	
	hickory	---	---	
	black locust	---	---	
	red maple	---	---	
FoC:				
Frankstown	northern red oak	79	61	black walnut, eastern white pine, European larch, Norway spruce, Virginia pine
	white oak	80	62	
	hickory	---	---	
	black locust	---	---	
	red maple	---	---	
FoE:				
Frankstown	northern red oak	79	61	black walnut, eastern white pine, European larch, Norway spruce, Virginia pine
	white oak	80	62	
	hickory	---	---	
	black locust	---	---	
	red maple	---	---	
FrB:				
Frederick	northern red oak	76	58	black walnut, eastern white pine, Scotch pine
	white oak	76	58	
	hickory	---	---	
	black locust	80	---	
	black walnut	76	---	
FrC:				
Frederick	northern red oak	76	58	black walnut, eastern white pine, Scotch pine
	white oak	76	58	
	hickory	---	---	
	black locust	80	---	
	black walnut	76	---	
FrD:				
Frederick	northern red oak	76	58	black walnut, eastern white pine, Scotch pine
	white oak	76	58	
	hickory	---	---	
	black locust	80	---	
	black walnut	76	---	
FyC:				
Frederick	northern red oak	76	58	black walnut, eastern white pine, Scotch pine
	white oak	76	58	
	hickory	---	---	
	black locust	80	---	
	black walnut	76	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
FyC:				
Caneyville	northern red oak	70	52	eastern white pine, Scotch pine, Virginia pine, white oak
	white oak	60	43	
	hickory	---	---	
	eastern redcedar	---	---	
	black walnut	---	---	
FyE:				
Frederick	northern red oak	76	58	black walnut, eastern white pine, Scotch pine
	white oak	76	58	
	hickory	---	---	
	black locust	80	---	
	black walnut	76	---	
Caneyville	northern red oak	70	52	eastern white pine, northern red oak, white ash, white oak, yellow-poplar
	white oak	60	43	
	hickory	---	---	
	eastern redcedar	---	---	
	black walnut	---	---	
GaC:				
Gauley	red spruce	42	88	Austrian pine, eastern white pine, Norway spruce, red pine, red spruce
	yellow birch	---	---	
	red maple	---	---	
	bigtooth aspen	---	---	
GaE:				
Gauley	red spruce	42	88	Austrian pine, eastern white pine, Norway spruce, red pine, red spruce
	yellow birch	---	---	
	red maple	---	---	
	bigtooth aspen	---	---	
GnC:				
Gilpin	northern red oak	80	62	---
	white oak	74	56	
	yellow-poplar	95	98	
	hickory	---	---	
	American beech	---	---	
GnD:				
Gilpin	northern red oak	80	62	---
	white oak	74	56	
	yellow-poplar	95	98	
	hickory	---	---	
	American beech	---	---	
GpC:				
Gilpin	northern red oak	80	62	---
	white oak	74	56	
	yellow-poplar	95	98	
	hickory	---	---	
	American beech	---	---	
GpE:				
Gilpin	northern red oak	80	62	---
	white oak	74	56	
	yellow-poplar	95	98	
	hickory	---	---	
	American beech	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
Ho:				
Holly	pin oak	90	72	American sycamore, baldcypress, eastern cottonwood, green ash, pin oak, red maple, silver maple, swamp white oak, sweetgum
	American sycamore	---	---	
	river birch	---	---	
	red maple	---	---	
	eastern white pine	---	---	
KxF:				
Kaymine	northern red oak	80	62	---
	yellow-poplar	105	115	
	eastern white pine	94	---	
	American sycamore	90	---	
	black locust	---	---	
	sweet birch	---	---	
Rock outcrop	---	---	---	---
LcC:				
Leatherbark	red spruce	45	95	---
	black cherry	70	43	
	American beech	---	---	
	yellow birch	---	---	
	red maple	---	---	
	sugar maple	---	---	
	eastern hemlock	---	---	
LgB:				
Lily	northern red oak	60	43	---
	white oak	60	43	
	scarlet oak	60	43	
	eastern white pine	---	---	
	red maple	---	---	
LgC:				
Lily	northern red oak	60	43	eastern white pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	white oak	60	43	
	scarlet oak	60	43	
	eastern white pine	---	---	
	red maple	---	---	
LhE:				
Lily	northern red oak	60	43	---
	white oak	60	43	
	scarlet oak	60	43	
	eastern white pine	---	---	
	red maple	---	---	
Lo:				
Lobdell	northern red oak	87	69	eastern white pine, northern red oak, red pine, white ash, white oak, yellow-poplar
	white oak	85	67	
	eastern white pine	---	---	
	river birch	---	---	
	American sycamore	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
MaB:				
Macove	white oak	70	52	eastern white pine, yellow-poplar
	Virginia pine	68	105	
	eastern white pine	---	---	
	red maple	---	---	
	eastern hemlock	---	---	
	hickory	---	---	
MaC:				
Macove	white oak	70	52	eastern white pine, yellow-poplar
	Virginia pine	68	105	
	eastern white pine	---	---	
	red maple	---	---	
	eastern hemlock	---	---	
	hickory	---	---	
MaD:				
Macove	white oak	70	52	eastern white pine, yellow-poplar
	Virginia pine	68	105	
	eastern white pine	---	---	
	red maple	---	---	
	eastern hemlock	---	---	
	hickory	---	---	
McC:				
Macove	white oak	70	52	eastern white pine, yellow-poplar
	Virginia pine	68	105	
	eastern white pine	---	---	
	red maple	---	---	
	eastern hemlock	---	---	
	hickory	---	---	
McE:				
Macove	white oak	70	52	eastern white pine, yellow-poplar
	Virginia pine	68	105	
	eastern white pine	---	---	
	red maple	---	---	
	eastern hemlock	---	---	
	hickory	---	---	
MeF:				
Macove	white oak	70	52	eastern white pine, yellow-poplar
	Virginia pine	68	105	
	eastern white pine	---	---	
	red maple	---	---	
	eastern hemlock	---	---	
	hickory	---	---	
Gilpin	northern red oak	80	62	---
	white oak	74	56	
	yellow-poplar	95	98	
	hickory	---	---	
	American beech	---	---	
MkC:				
Mandy	black cherry	80	50	black cherry, Norway spruce, red pine
	American beech	---	---	
	sugar maple	---	---	
	yellow birch	---	---	
	red spruce	65	152	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
MkE:				
Mandy	black cherry	80	50	black cherry, Norway spruce, red pine
	American beech	---	---	
	sugar maple	---	---	
	yellow birch	---	---	
	red spruce	65	152	
MkF:				
Mandy	black cherry	80	50	black cherry, Norway spruce, red pine
	American beech	---	---	
	sugar maple	---	---	
	yellow birch	---	---	
	red spruce	65	152	
MkG:				
Mandy	black cherry	80	50	black cherry, Norway spruce, red pine
	American beech	---	---	
	sugar maple	---	---	
	yellow birch	---	---	
	red spruce	65	152	
Ml:				
Melvin	pin oak	99	81	American sycamore, eastern cottonwood, loblolly pine, pin oak, sweetgum
	eastern cottonwood	95	116	
	sweetgum	92	112	
	American elm	---	---	
	green ash	---	---	
	red maple	---	---	
	hickory	---	---	
	common hackberry	---	---	
Lindside	northern red oak	86	68	black oak, black walnut, eastern white pine, Japanese larch, northern red oak, Norway spruce, shortleaf pine, white ash, white oak, yellow-poplar
	yellow-poplar	95	98	
	black walnut	---	---	
	white ash	85	111	
	white oak	85	67	
	red maple	---	---	
MzC:				
Mertz	northern red oak	80	62	eastern white pine, Japanese larch, Norway spruce, Virginia pine, yellow-poplar
	white oak	80	62	
	eastern white pine	---	---	
	red maple	---	---	
	pitch pine	75	---	
MzE:				
Mertz	northern red oak	80	62	eastern white pine, Japanese larch, Norway spruce, Virginia pine, yellow-poplar
	white oak	80	62	
	eastern white pine	---	---	
	red maple	---	---	
	pitch pine	75	---	
No:				
Nolin	northern red oak	85	67	---
	yellow-poplar	107	119	
	American sycamore	---	---	
	sweetgum	92	112	
	eastern cottonwood	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
Ph:				
Philo	northern red oak	86	68	eastern white pine, yellow-poplar
	white oak	85	67	
	eastern white pine	---	---	
	river birch	---	---	
	American sycamore	---	---	
Po:				
Pope	northern red oak	80	62	---
	white oak	80	62	
	yellow-poplar	96	100	
	eastern white pine	---	---	
	sugar maple	---	---	
Pt:				
Potomac	northern red oak	70	52	American sycamore, black walnut, eastern white pine, Japanese larch, northern red oak, white oak
	white oak	70	52	
	eastern white pine	80	144	
	river birch	---	---	
	American sycamore	---	---	
PuA:				
Purdy	pin oak	85	66	eastern white pine, loblolly pine, Virginia pine
	yellow-poplar	90	90	
	sweetgum	85	93	
Qu:				
Quarry	---	---	---	---
Se:				
Sensabaugh	white oak	80	62	black walnut, loblolly pine, yellow-poplar
	yellow-poplar	100	107	
	river birch	---	---	
	American sycamore	---	---	
SfB:				
Shouns	northern red oak	70	52	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	American beech	---	---	
	yellow-poplar	90	90	
	black cherry	---	---	
	eastern hemlock	---	---	
	white oak	70	52	
	sugar maple	---	---	
SfC:				
Shouns	northern red oak	70	52	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	American beech	---	---	
	yellow-poplar	90	90	
	black cherry	---	---	
	eastern hemlock	---	---	
	white oak	70	52	
	sugar maple	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
ShC:				
Shouns	northern red oak	70	52	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	American beech	---	---	
	yellow-poplar	90	90	
	black cherry	---	---	
	eastern hemlock	---	---	
	white oak	70	52	
	sugar maple	---	---	
ShE:				
Shouns	northern red oak	70	52	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	American beech	---	---	
	yellow-poplar	90	90	
	black cherry	---	---	
	eastern hemlock	---	---	
	white oak	70	52	
	sugar maple	---	---	
ShF:				
Shouns	northern red oak	70	52	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	American beech	---	---	
	yellow-poplar	90	90	
	black cherry	---	---	
	eastern hemlock	---	---	
	white oak	70	52	
	sugar maple	---	---	
SmC:				
Simoda	red spruce	45	95	---
	red maple	---	---	
	black cherry	60	38	
	yellow birch	---	---	
SoC:				
Snowdog	black cherry	80	50	Norway spruce, red maple
	red spruce	65	152	
	red maple	---	---	
	yellow birch	---	---	
SoE:				
Snowdog	black cherry	80	50	Norway spruce, red maple
	red spruce	65	152	
	red maple	---	---	
	yellow birch	---	---	
SoF:				
Snowdog	black cherry	80	50	Norway spruce, red maple
	red spruce	65	152	
	red maple	---	---	
	yellow birch	---	---	
SvC:				
Summers	northern red oak	70	52	eastern white pine, Virginia pine
	black cherry	70	43	
	red maple	---	---	
	sugar maple	---	---	
	yellow birch	---	---	
	American beech	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
Tp:				
Tioga	northern red oak	75	57	black walnut, eastern white pine, European larch, Norway spruce, yellow-poplar
	yellow-poplar	85	81	
	American sycamore	---	---	
	river birch	---	---	
	yellow buckeye	---	---	
Potomac	northern red oak	70	52	American sycamore, black walnut, eastern white pine, Japanese larch, northern red oak, white oak
	white oak	70	52	
	eastern white pine	80	144	
	river birch	---	---	
	American sycamore	---	---	
TrC:				
Trussel	red spruce	45	95	Norway spruce, red maple
	red maple	---	---	
	black cherry	60	38	
	yellow birch	---	---	
Uf:				
Udifluvents	---	---	---	---
Fluvaquents	---	---	---	---
Ux:				
Udorthents	---	---	---	---
Rock outcrop	---	---	---	---
WeC:				
Weikert	northern red oak	50	34	eastern white pine, red pine, shortleaf pine, Virginia pine
	chestnut oak	50	34	
	scarlet oak	50	34	
	white oak	50	34	
	pitch pine	50	---	
	hickory	---	---	
WeD:				
Weikert	northern red oak	50	34	eastern white pine, shortleaf pine, Virginia pine
	chestnut oak	50	34	
	scarlet oak	50	34	
	white oak	50	34	
	pitch pine	50	---	
	hickory	---	---	
WeF:				
Weikert	northern red oak	50	34	eastern white pine, shortleaf pine, Virginia pine
	chestnut oak	50	34	
	scarlet oak	50	34	
	white oak	50	34	
	pitch pine	50	---	
	hickory	---	---	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
WrG:				
Weikert	northern red oak	50	34	eastern white pine, shortleaf pine, Virginia pine
	chestnut oak	50	34	
	scarlet oak	50	34	
	white oak	50	34	
	pitch pine	50	---	
	hickory	---	---	
Berks	northern red oak	65	48	eastern white pine, Japanese larch, Norway spruce, red pine, Virginia pine
	white oak	65	48	
	hickory	---	---	
	eastern white pine	70	121	
	red maple	---	---	
Rough	northern red oak	42	28	Virginia pine
	Virginia pine	38	---	
	chestnut oak	38	---	
ZoA:				
Zoar	northern red oak	70	52	---
	yellow-poplar	80	71	
	Virginia pine	70	109	
	eastern white pine	80	181	
	black oak	70	52	
	white oak	70	52	
	red maple	---	---	

Table 10a.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:							
Allegheny	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Landslides	0.10	Landslides	0.10		
AlC:							
Allegheny	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
An:							
Atkins	35	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	1.00		
				Low strength	0.50		
Philo	30	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Potomac	20	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
BaE:							
Belmont	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
BcC:							
Berks	80	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
BcE:							
Berks	75	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
BcF:							
Berks	75	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
BkG:							
Berks	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Weikert	25	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Calvin	20	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
BlC:							
Berks	60	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
Dekalb	30	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50

Table 10a.--Forestland Management--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
BlE:							
Berks	55	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
Dekalb	35	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				
BlF:							
Berks	45	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Dekalb	40	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
BrE:							
Berks	50	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
Weikert	35	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
BrF:							
Berks	50	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Weikert	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
BtC:							
Blackthorn	75	Moderate		Moderately suited		Moderate	
		Stoniness	0.50	Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
				Low strength	0.50		
BtE:							
Blackthorn	75	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
				Low strength	0.50		
BxF:							
Briery	75	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
CbC:							
Calvin	45	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
Dekalb	25	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
Berks	20	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10

Table 10a.--Forestland Management--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
CbE:							
Calvin	35	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Dekalb	30	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				
Berks	20	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
CbF:							
Calvin	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Dekalb	25	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
Berks	20	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
CeF:							
Caneyville	40	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Frederick	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
CfB:							
Cateache	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
CfC:							
Cateache	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
CfD:							
Cateache	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
				Landslides	0.50		
CfE:							
Cateache	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
				Landslides	0.50		

Table 10a.--Forestland Management--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
CfF:							
Cateache	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Low strength	0.50	Landslides	0.50		
CgC:							
Cateache	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
CgE:							
Cateache	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
				Landslides	0.50		
CgF:							
Cateache	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Low strength	0.50	Landslides	0.50		
Ch:							
Chavies	85	Slight		Well suited		Moderate	
						Low strength	0.50
CpB:							
Cookport	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Wetness	0.50		
CuB:							
Culleoka	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
CuC:							
Culleoka	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
CuD:							
Culleoka	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
CyE:							
Culleoka	80	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
CyF:							
Culleoka	75	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
DeC:							
Dekalb	75	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		

Table 10a.--Forestland Management--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
DeE:							
Dekalb	75	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50	Rock fragments	0.50		
		Stoniness	0.50				
DeF:							
Dekalb	75	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
DhC:							
Dekalb	55	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
Hazleton	35	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
DhE:							
Dekalb	55	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				
Hazleton	35	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Restrictive layer	0.50				
DhF:							
Dekalb	55	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
Hazleton	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
DkF:							
Dekalb	45	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
Rock outcrop	40	Not rated		Not rated		Not rated	
Du:							
Dunning	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Wetness	1.00	Flooding	1.00	Wetness	0.50
		Low strength	0.50	Wetness	1.00		
ElF:							
Elliber	80	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
ErB:							
Ernest	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
				Wetness	0.50		

Table 10a.--Forestland Management--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
EsC:							
Ernest	75	Moderate		Moderately suited		Severe	
		Stoniness	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Rock fragments	0.50		
				Low strength	0.50		
FaE:							
Faywood	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
FaF:							
Faywood	75	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
FkB:							
Frankstown	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
FkC:							
Frankstown	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
FkD:							
Frankstown	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
FoC:							
Frankstown	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
FoE:							
Frankstown	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
FrB:							
Frederick	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
FrC:							
Frederick	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
FrD:							
Frederick	80	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		

Table 10a.--Forestland Management--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
FyC:							
Frederick	45	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
Caneyville	35	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
FyE:							
Frederick	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Caneyville	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
GaC:							
Gauley	85	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
GaE:							
Gauley	80	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Rock fragments	0.50		
		Stoniness	0.50				
GnC:							
Gilpin	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
GnD:							
Gilpin	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
GpC:							
Gilpin	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
GpE:							
Gilpin	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Ho:							
Holly	90	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	1.00		
				Low strength	0.50		
KxF:							
Kaymine	70	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
				Sandiness	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 10a.--Forestland Management--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
LcC:							
Leatherbark---------	85	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Wetness	1.00	Low strength	1.00
				Slope	0.50		
				Low strength	0.50		
LgB:							
Lily----------	85	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Low strength	0.50	Low strength	1.00
		Low strength	0.50	Slope	0.50		
LgC:							
Lily----------	85	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
LhE:							
Lily----------	80	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
Lo:							
Lobdell----------	75	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
				Wetness	0.50		
MaB:							
Macove----------	85	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
MaC:							
Macove----------	85	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
MaD:							
Macove----------	80	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
McC:							
Macove----------	80	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
McE:							
Macove----------	75	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
MeF:							
Macove----------	55	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Gilpin----------	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
MkC:							
Mandy----------	85	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		

Table 10a.--Forestland Management--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
MkE:							
Mandy	80	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
MkF:							
Mandy	80	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
MkG:							
Mandy	80	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Ml:							
Melvin	50	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Wetness	1.00	Wetness	1.00	Wetness	0.50
		Low strength	0.50	Low strength	0.50		
Lindside	35	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
MzC:							
Mertz	75	Slight		Moderately suited		Severe	
				Slope	0.50	Low strength	1.00
				Low strength	0.50		
MzE:							
Mertz	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
No:							
Nolin	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Ph:							
Philo	75	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Po:							
Pope	75	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
Pt:							
Potomac	80	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
PuA:							
Purdy	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Wetness	0.50		
Qu:							
Quarry	80	Not rated		Not rated		Not rated	

Table 10a.--Forestland Management--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
Se:							
Sensabaugh	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
SfB:							
Shouns	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
SfC:							
Shouns	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
ShC:							
Shouns	80	Moderate		Moderately suited		Severe	
		Stoniness	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Rock fragments	0.50		
				Low strength	0.50		
ShE:							
Shouns	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
				Low strength	0.50		
ShF:							
Shouns	75	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
		Low strength	0.50	Low strength	0.50		
SmC:							
Simoda	75	Moderate		Moderately suited		Severe	
		Stoniness	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Rock fragments	0.50		
				Low strength	0.50		
SoC:							
Snowdog	75	Moderate		Moderately suited		Severe	
		Stoniness	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Rock fragments	0.50		
		Wetness	0.50	Low strength	0.50		
SoE:							
Snowdog	75	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
		Wetness	0.50	Low strength	0.50		
SoF:							
Snowdog	75	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Stoniness	0.50	Rock fragments	0.50		
		Low strength	0.50	Low strength	0.50		
SvC:							
Summers	75	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50

Table 10a.--Forestland Management--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
Tp:							
Tioga	55	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
Potomac	35	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
TrC:							
Trussel	80	Severe		Poorly suited		Severe	
		Wetness	1.00	Wetness	1.00	Low strength	1.00
		Low strength	0.50	Slope	0.50	Wetness	0.50
				Low strength	0.50		
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
WeD:							
Weikert	75	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
WeF:							
Weikert	75	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
WrG:							
Weikert	40	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Berks	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Rough	15	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
ZoA:							
Zoar	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 10b.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		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
AlB:							
Allegheny	90	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Landslides	0.10
AlC:							
Allegheny	90	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
An:							
Atkins	35	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
Philo	30	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
Potomac	20	Slight		Slight		Poorly suited	
						Flooding	1.00
BaE:							
Belmont	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
BcC:							
Berks	80	Slight		Slight		Moderately suited	
						Slope	0.50
BcE:							
Berks	75	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
BcF:							
Berks	75	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
BkG:							
Berks	35	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95		
Weikert	25	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95		
Calvin	20	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95	Low strength	0.50

Table 10b.--Forestland Management--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
BlC:							
Berks	60	Slight		Slight		Moderately suited	
						Slope	0.50
Dekalb	30	Slight		Slight		Moderately suited	
						Slope	0.50
BlE:							
Berks	55	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
Dekalb	35	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
BlF:							
Berks	45	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
Dekalb	40	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
BrE:							
Berks	50	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
Weikert	35	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95		
BrF:							
Berks	50	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
Weikert	35	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
BtC:							
Blackthorn	75	Slight		Moderate		Moderately suited	
				Slope	0.50	Slope	0.50
				Erodibility	0.50	Rock fragments	0.50
						Low strength	0.50
BtE:							
Blackthorn	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50
BxF:							
Briery	75	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 10b.--Forestland Management--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
CbC:							
Calvin	45	Slight		Slight		Moderately suited	
						Slope	0.50
						Low strength	0.50
Dekalb	25	Slight		Slight		Moderately suited	
						Slope	0.50
Berks	20	Slight		Slight		Moderately suited	
						Slope	0.50
CbE:							
Calvin	35	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50	Low strength	0.50
Dekalb	30	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
Berks	20	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
CbF:							
Calvin	35	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Low strength	0.50
Dekalb	25	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
Berks	20	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
CeF:							
Caneyville	40	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95	Low strength	0.50
Frederick	30	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Low strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
CfB:							
Cateache	85	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Slope	0.50
CfC:							
Cateache	85	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50

Table 10b.--Forestland Management--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
CfD:							
Cateache	85	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
						Landslides	0.50
CfE:							
Cateache	85	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
						Landslides	0.50
CfF:							
Cateache	85	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Low strength	0.50
						Landslides	0.50
CgC:							
Cateache	85	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
CgE:							
Cateache	85	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
						Landslides	0.50
CgF:							
Cateache	85	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Low strength	0.50
						Landslides	0.50
Ch:							
Chavies	85	Slight		Slight		Well suited	
CpB:							
Cookport	80	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Wetness	0.50
CuB:							
Culleoka	90	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50		
CuC:							
Culleoka	85	Slight		Moderate		Moderately suited	
				Slope	0.50	Slope	0.50
				Erodibility	0.50	Low strength	0.50
CuD:							
Culleoka	85	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
CyE:							
Culleoka	80	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50

Table 10b.--Forestland Management--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
CyF:							
Culleoka	75	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Low strength	0.50
DeC:							
Dekalb	75	Slight		Slight		Moderately suited	
						Slope	0.50
						Rock fragments	0.50
DeE:							
Dekalb	75	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50	Rock fragments	0.50
DeF:							
Dekalb	75	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Rock fragments	0.50
DhC:							
Dekalb	55	Slight		Slight		Moderately suited	
						Slope	0.50
Hazleton	35	Slight		Slight		Moderately suited	
						Slope	0.50
DhE:							
Dekalb	55	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
Hazleton	35	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
DhF:							
Dekalb	55	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
Hazleton	35	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
DkF:							
Dekalb	45	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95	Rock fragments	0.50
Rock outcrop	40	Not rated		Not rated		Not rated	
Du:							
Dunning	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Flooding	1.00
						Wetness	1.00
ElF:							
Elliber	80	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		

Table 10b.--Forestland Management--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
ErB:							
Ernest	80	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Slope	0.50
						Wetness	0.50
EsC:							
Ernest	75	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50
FaE:							
Faywood	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
FaF:							
Faywood	75	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95	Low strength	0.50
FkB:							
Frankstown	75	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Slope	0.50
FkC:							
Frankstown	75	Moderate		Severe		Moderately suited	
		Slope	0.50	Slope	0.95	Slope	0.50
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
FkD:							
Frankstown	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
FoC:							
Frankstown	75	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
FoE:							
Frankstown	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
FrB:							
Frederick	80	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Slope	0.50
FrC:							
Frederick	80	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
FrD:							
Frederick	80	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50

Table 10b.--Forestland Management--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
FyC:							
Frederick	45	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
Caneyville	35	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
FyE:							
Frederick	40	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
Caneyville	40	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
GaC:							
Gauley	85	Slight		Slight		Moderately suited	
						Slope	0.50
						Rock fragments	0.50
GaE:							
Gauley	80	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50	Rock fragments	0.50
GnC:							
Gilpin	75	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
GnD:							
Gilpin	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
GpC:							
Gilpin	75	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
GpE:							
Gilpin	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
Ho:							
Holly	90	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
KxF:							
Kaymine	70	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Sandiness	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 10b.--Forestland Management--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
LcC:							
Leatherbark---------	85	Slight		Moderate		Poorly suited	
				Slope	0.50	Wetness	1.00
				Erodibility	0.50	Slope	0.50
						Low strength	0.50
LgB:							
Lily----------	85	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Slope	0.50
LgC:							
Lily----------	85	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
LhE:							
Lily----------	80	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
Lo:							
Lobdell----------	75	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Wetness	0.50
MaB:							
Macove----------	85	Slight		Slight		Moderately suited	
						Slope	0.50
MaC:							
Macove----------	85	Slight		Moderate		Moderately suited	
				Slope	0.50	Slope	0.50
				Erodibility	0.50		
MaD:							
Macove----------	80	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
McC:							
Macove----------	80	Slight		Slight		Moderately suited	
						Slope	0.50
McE:							
Macove----------	75	Moderate		Moderate		Poorly suited	
		Slope	0.50	Slope	0.50	Slope	1.00
		Erodibility	0.50	Erodibility	0.50		
MeF:							
Macove----------	55	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
Gilpin----------	30	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Low strength	0.50

Table 10b.--Forestland Management--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
MkC:							
Mandy	85	Slight		Moderate		Moderately suited	
				Slope	0.50	Slope	0.50
				Erodibility	0.50	Low strength	0.50
MkE:							
Mandy	80	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
MkF:							
Mandy	80	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Low strength	0.50
MkG:							
Mandy	80	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95	Low strength	0.50
Ml:							
Melvin	50	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
Lindside	35	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
MzC:							
Mertz	75	Slight		Moderate		Moderately suited	
				Slope	0.50	Slope	0.50
				Erodibility	0.50	Low strength	0.50
MzE:							
Mertz	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Low strength	0.50
No:							
Nolin	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
Ph:							
Philo	75	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
Po:							
Pope	75	Slight		Slight		Poorly suited	
						Flooding	1.00
Pt:							
Potomac	80	Slight		Slight		Poorly suited	
						Flooding	1.00
PuA:							
Purdy	80	Slight		Slight		Moderately suited	
						Low strength	0.50
						Wetness	0.50

Table 10b.--Forestland Management--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
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
SfB:							
Shouns	85	Slight		Moderate		Moderately suited	
				Slope	0.50	Low strength	0.50
				Erodibility	0.50	Slope	0.50
SfC:							
Shouns	85	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Low strength	0.50
ShC:							
Shouns	80	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50
ShE:							
Shouns	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50
ShF:							
Shouns	75	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50
SmC:							
Simoda	75	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50
SoC:							
Snowdog	75	Slight		Moderate		Moderately suited	
				Slope	0.50	Slope	0.50
				Erodibility	0.50	Rock fragments	0.50
						Low strength	0.50
SoE:							
Snowdog	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50
SoF:							
Snowdog	75	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95	Rock fragments	0.50
						Low strength	0.50

Table 10b.--Forestland Management--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
SvC:							
Summers	75	Slight		Slight		Moderately suited	
						Slope	0.50
Tp:							
Tioga	55	Slight		Slight		Poorly suited	
						Flooding	1.00
Potomac	35	Slight		Slight		Poorly suited	
						Flooding	1.00
TrC:							
Trussel	80	Slight		Moderate		Poorly suited	
				Slope	0.50	Wetness	1.00
				Erodibility	0.50	Slope	0.50
						Low strength	0.50
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Slight		Severe		Moderately suited	
				Slope	0.95	Slope	0.50
				Erodibility	0.95		
WeD:							
Weikert	75	Moderate		Severe		Poorly suited	
		Slope	0.50	Slope	0.95	Slope	1.00
		Erodibility	0.50	Erodibility	0.95		
WeF:							
Weikert	75	Severe		Severe		Poorly suited	
		Slope	0.75	Slope	0.95	Slope	1.00
		Erodibility	0.75	Erodibility	0.95		
WrG:							
Weikert	40	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95		
Berks	35	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95		
Rough	15	Very severe		Severe		Poorly suited	
		Slope	0.95	Slope	0.95	Slope	1.00
		Erodibility	0.95	Erodibility	0.95		
ZoA:							
Zoar	80	Slight		Slight		Moderately suited	
						Low strength	0.50

Table 10c.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for 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
AlB:							
Allegheny	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Slope	0.50	Low strength	0.50
		High plasticity index	0.50	Stickiness	0.50		
				High plasticity index	0.50		
AlC:							
Allegheny	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Slope	0.50	Low strength	0.50
		High plasticity index	0.50	Stickiness	0.50		
				High plasticity index	0.50		
An:							
Atkins	35	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Philo	30	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Potomac	20	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
BaE:							
Belmont	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
BcC:							
Berks	80	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
BcE:							
Berks	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
BcF:							
Berks	75	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
BkG:							
Berks	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Weikert	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Calvin	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BlC:							
Berks	60	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Dekalb	30	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
BlE:							
Berks	55	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Dekalb	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
BlF:							
Berks	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Dekalb	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
BrE:							
Berks	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Weikert	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
BrF:							
Berks	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Weikert	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
BtC:							
Blackthorn	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Slope	0.50	Low strength	0.50
BtE:							
Blackthorn	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.75	Low strength	0.50
						Slope	0.50
BxF:							
Briery	75	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CbC:							
Calvin	45	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
Dekalb	25	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Berks	20	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
CbE:							
Calvin	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
Dekalb	30	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Berks	20	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
CbF:							
Calvin	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Dekalb	25	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Berks	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
CeF:							
Caneyville	40	Poorly suited		Unsuited		Poorly suited	
		Stickiness	0.75	Slope	1.00	Slope	1.00
		High plasticity index	0.75	Stickiness	0.75	Low strength	0.50
				High plasticity index	0.75		
		Slope	0.50				
Frederick	30	Moderately suited		Unsuited		Poorly suited	
		Stickiness	0.50	Slope	1.00	Slope	1.00
		High plasticity index	0.50	Stickiness	0.50	Low strength	0.50
				High plasticity index	0.50		
		Slope	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	
CfB:							
Cateache	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CfC:							
Cateache	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
CfD:							
Cateache	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
CfE:							
Cateache	85	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
CfF:							
Cateache	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
CgC:							
Cateache	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
CgE:							
Cateache	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
CgF:							
Cateache	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Ch:							
Chavies	85	Well suited		Well suited		Well suited	
CpB:							
Cookport	80	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
CuB:							
Culleoka	90	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
CuC:							
Culleoka	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
CuD:							
Culleoka	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.75	Slope	0.50
CyE:							
Culleoka	80	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Low strength	0.50
				Rock fragments	0.75	Slope	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CyF:							
Culleoka	75	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
DeC:							
Dekalb	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Slope	0.50		
DeE:							
Dekalb	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.75	Slope	0.50
DeF:							
Dekalb	75	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
DhC:							
Dekalb	55	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Hazleton	35	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
DhE:							
Dekalb	55	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
Hazleton	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.75		
DhF:							
Dekalb	55	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Hazleton	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
DkF:							
Dekalb	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
Rock outcrop	40	Not rated		Not rated		Not rated	
Du:							
Dunning	85	Poorly suited		Poorly suited		Poorly suited	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
						Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ElF:							
Elliber	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	1.00		
		Stickiness	0.50	Stickiness	0.50		
		High plasticity index	0.50	High plasticity index	0.50		
ErB:							
Ernest	80	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
EsC:							
Ernest	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Slope	0.50	Low strength	0.50
FaE:							
Faywood	75	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Slope	0.75	Low strength	0.50
		High plasticity index	0.75	Stickiness	0.75	Slope	0.50
				High plasticity index	0.75		
				Rock fragments	0.50		
FaF:							
Faywood	75	Poorly suited		Unsuited		Poorly suited	
		Stickiness	0.75	Slope	1.00	Slope	1.00
		High plasticity index	0.75	Stickiness	0.75	Low strength	0.50
		Slope	0.50	High plasticity index	0.75		
				Rock fragments	0.50		
FkB:							
Frankstown	75	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
FkC:							
Frankstown	75	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
FkD:							
Frankstown	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
FoC:							
Frankstown	75	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
FoE:							
Frankstown	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
FrB:							
Frederick	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Low strength	0.50
		High plasticity index	0.50	High plasticity index	0.50		
				Slope	0.50		

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FrC:							
Frederick	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Low strength	0.50
		High plasticity index	0.50	High plasticity index	0.50		
				Slope	0.50		
FrD:							
Frederick	80	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Low strength	0.50
		High plasticity index	0.50	Stickiness	0.50	Slope	0.50
				High plasticity index	0.50		
FyC:							
Frederick	45	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Low strength	0.50
		High plasticity index	0.50	High plasticity index	0.50		
				Slope	0.50		
Caneyville	35	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Low strength	0.50
		High plasticity index	0.75	High plasticity index	0.75		
				Slope	0.50		
FyE:							
Frederick	40	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Low strength	0.50
		High plasticity index	0.50	Stickiness	0.50	Slope	0.50
				High plasticity index	0.50		
Caneyville	40	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Slope	0.75	Low strength	0.50
		High plasticity index	0.75	Stickiness	0.75	Slope	0.50
				High plasticity index	0.75		
GaC:							
Gauley	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Slope	0.50		
GaE:							
Gauley	80	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.75	Slope	0.50
GnC:							
Gilpin	75	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
GnD:							
Gilpin	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GpC:							
Gilpin	75	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
GpE:							
Gilpin	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
Ho:							
Holly	90	Well suited		Well suited		Moderately suited	
						Low strength	0.50
KxF:							
Kaymine	70	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
LcC:							
Leatherbark	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Slope	0.50	Low strength	0.50
		High plasticity index	0.50	Stickiness	0.50		
				High plasticity index	0.50		
LgB:							
Lily	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
LgC:							
Lily	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
LhE:							
Lily	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
Lo:							
Lobdell	75	Well suited		Well suited		Moderately suited	
						Low strength	0.50
MaB:							
Macove	85	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
MaC:							
Macove	85	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
MaD:							
Macove	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
McC:							
Macove	80	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
McE:							
Macove	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
MeF:							
Macove	55	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
Gilpin	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
MkC:							
Mandy	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
MkE:							
Mandy	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
MkF:							
Mandy	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
MkG:							
Mandy	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Ml:							
Melvin	50	Moderately suited		Moderately suited		Poorly suited	
		Wetness	0.50	Wetness	0.50	Wetness	1.00
						Low strength	0.50
Lindside	35	Well suited		Well suited		Moderately suited	
						Low strength	0.50
MzC:							
Mertz	75	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
MzE:							
Mertz	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
No:							
Nolin	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ph:							
Philo	75	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Po:							
Pope	75	Well suited		Well suited		Well suited	
Pt:							
Potomac	80	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
PuA:							
Purdy	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Low strength	0.50
		High plasticity index	0.50	High plasticity index	0.50		
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
SfB:							
Shouns	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
SfC:							
Shouns	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
ShC:							
Shouns	80	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Slope	0.50	Low strength	0.50
ShE:							
Shouns	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.75	Low strength	0.50
						Slope	0.50
ShF:							
Shouns	75	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
						Low strength	0.50
SmC:							
Simoda	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Slope	0.50	Low strength	0.50
SoC:							
Snowdog	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Slope	0.50	Low strength	0.50
						Wetness	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SoE:							
Snowdog	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.75	Low strength	0.50
						Wetness	0.50
SoF:							
Snowdog	75	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
						Low strength	0.50
SvC:							
Summers	75	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
Tp:							
Tioga	55	Well suited		Well suited		Well suited	
Potomac	35	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
TrC:							
Trussel	80	Moderately suited		Poorly suited		Poorly suited	
		Wetness	0.50	Wetness	0.75	Wetness	1.00
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
WeD:							
Weikert	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Slope	0.50
				Slope	0.75		
WeF:							
Weikert	75	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
WrG:							
Weikert	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WrG:							
Berks	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Rough	15	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	1.00		
		Rock fragments	0.50				
ZoA:							
Zoar	80	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Low strength	0.50
		High plasticity index	0.50	High plasticity index	0.50		

Table 10d.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:					
Allegheny	90	Well suited		Well suited	
AlC:					
Allegheny	90	Well suited		Well suited	
An:					
Atkins	35	Well suited		Well suited	
Philo	30	Well suited		Well suited	
Potomac	20	Poorly suited		Well suited	
		Rock fragments	0.50		
BaE:					
Belmont	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
BcC:					
Berks	80	Poorly suited		Well suited	
		Rock fragments	0.50		
BcE:					
Berks	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
BcF:					
Berks	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
BkG:					
Berks	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Weikert	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Calvin	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
BlC:					
Berks	60	Poorly suited		Well suited	
		Rock fragments	0.50		
Dekalb	30	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50

Table 10d.--Forestland Management--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
BlE:					
Berks	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Dekalb	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
BlF:					
Berks	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Dekalb	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
BrE:					
Berks	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Weikert	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
BrF:					
Berks	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Weikert	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
BtC:					
Blackthorn	75	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
BtE:					
Blackthorn	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
BxF:					
Briery	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated	
CbC:					
Calvin	45	Well suited		Well suited	
Dekalb	25	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
Berks	20	Poorly suited		Well suited	
		Rock fragments	0.50		

Table 10d.--Forestland Management--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
CbE:					
Calvin	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Dekalb	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
Berks	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
CbF:					
Calvin	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Dekalb	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Berks	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
CeF:					
Caneyville	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness	0.50		
		High plasticity index	0.50		
Frederick	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness	0.50		
		High plasticity index	0.50		
Rock outcrop	20	Not rated		Not rated	
CfB:					
Cateache	85	Well suited		Well suited	
CfC:					
Cateache	85	Well suited		Well suited	
CfD:					
Cateache	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
CfE:					
Cateache	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
CfF:					
Cateache	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
CgC:					
Cateache	85	Well suited		Well suited	

Table 10d.--Forestland Management--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
CgE:					
Cateache	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
CgF:					
Cateache	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Ch:					
Chavies	85	Well suited		Well suited	
CpB:					
Cookport	80	Well suited		Well suited	
CuB:					
Culleoka	90	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
CuC:					
Culleoka	85	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
CuD:					
Culleoka	85	Poorly suited		Poorly suited	
		Slope	0.50	Rock fragments	0.50
		Rock fragments	0.50	Slope	0.50
CyE:					
Culleoka	80	Poorly suited		Poorly suited	
		Slope	0.50	Rock fragments	0.50
		Rock fragments	0.50	Slope	0.50
CyF:					
Culleoka	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
DeC:					
Dekalb	75	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
DeE:					
Dekalb	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
DeF:					
Dekalb	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
DhC:					
Dekalb	55	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
Hazleton	35	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50

Table 10d.--Forestland Management--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
DhE:					
Dekalb	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
Hazleton	35	Poorly suited		Poorly suited	
		Slope	0.50	Rock fragments	0.50
		Rock fragments	0.50	Slope	0.50
DhF:					
Dekalb	55	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Hazleton	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
DkF:					
Dekalb	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Rock outcrop	40	Not rated		Not rated	
Du:					
Dunning	85	Unsuited		Unsuited	
		Wetness	0.75	Wetness	1.00
ElF:					
Elliber	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
ErB:					
Ernest	80	Well suited		Well suited	
EsC:					
Ernest	75	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
FaE:					
Faywood	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness	0.50		
		High plasticity index	0.50		
FaF:					
Faywood	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness	0.50		
		High plasticity index	0.50		
FkB:					
Frankstown	75	Well suited		Well suited	
FkC:					
Frankstown	75	Well suited		Well suited	

Table 10d.--Forestland Management--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
FkD:					
Frankstown	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
FoC:					
Frankstown	75	Well suited		Well suited	
FoE:					
Frankstown	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
FrB:					
Frederick	80	Poorly suited		Well suited	
		Stickiness	0.50		
		High plasticity index	0.50		
FrC:					
Frederick	80	Poorly suited		Well suited	
		Stickiness	0.50		
		High plasticity index	0.50		
FrD:					
Frederick	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness	0.50		
		High plasticity index	0.50		
FyC:					
Frederick	45	Poorly suited		Well suited	
		Stickiness	0.50		
		High plasticity index	0.50		
Caneyville	35	Poorly suited		Well suited	
		Stickiness	0.50		
		High plasticity index	0.50		
FyE:					
Frederick	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness	0.50		
		High plasticity index	0.50		
Caneyville	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness	0.50		
		High plasticity index	0.50		
GaC:					
Gauley	85	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50

Table 10d.--Forestland Management--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
GaE:					
Gauley	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
GnC:					
Gilpin	75	Well suited		Well suited	
GnD:					
Gilpin	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
GpC:					
Gilpin	75	Well suited		Well suited	
GpE:					
Gilpin	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Ho:					
Holly	90	Well suited		Well suited	
KxF:					
Kaymine	70	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated	
LcC:					
Leatherbark	85	Well suited		Well suited	
LgB:					
Lily	85	Well suited		Well suited	
LgC:					
Lily	85	Well suited		Well suited	
LhE:					
Lily	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Lo:					
Lobdell	75	Well suited		Well suited	
MaB:					
Macove	85	Well suited		Well suited	
MaC:					
Macove	85	Well suited		Well suited	
MaD:					
Macove	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
McC:					
Macove	80	Well suited		Well suited	

Table 10d.--Forestland Management--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
McE:					
Macove	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
MeF:					
Macove	55	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Gilpin	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
MkC:					
Mandy	85	Well suited		Well suited	
MkE:					
Mandy	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
MkF:					
Mandy	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
MkG:					
Mandy	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Ml:					
Melvin	50	Poorly suited		Unsuited	
		Wetness	0.50	Wetness	1.00
Lindside	35	Well suited		Well suited	
MzC:					
Mertz	75	Well suited		Well suited	
MzE:					
Mertz	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
No:					
Nolin	80	Well suited		Well suited	
Ph:					
Philo	75	Well suited		Well suited	
Po:					
Pope	75	Well suited		Well suited	
Pt:					
Potomac	80	Poorly suited		Well suited	
		Rock fragments	0.50		
PuA:					
Purdy	80	Well suited		Well suited	
Qu:					
Quarry	80	Not rated		Not rated	
Se:					
Sensabaugh	80	Well suited		Well suited	

Table 10d.--Forestland Management--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
SfB:					
Shouns	85	Well suited		Well suited	
SfC:					
Shouns	85	Well suited		Well suited	
ShC:					
Shouns	80	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
ShE:					
Shouns	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
ShF:					
Shouns	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
SmC:					
Simoda	75	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
SoC:					
Snowdog	75	Poorly suited		Unsuited	
		Rock fragments	0.50	Wetness	1.00
				Rock fragments	0.50
SoE:					
Snowdog	75	Poorly suited		Unsuited	
		Slope	0.50	Wetness	1.00
		Rock fragments	0.50	Slope	0.50
				Rock fragments	0.50
SoF:					
Snowdog	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Wetness	1.00
				Rock fragments	0.50
SvC:					
Summers	75	Well suited		Well suited	
Tp:					
Tioga	55	Well suited		Well suited	
Potomac	35	Poorly suited		Well suited	
		Rock fragments	0.50		
TrC:					
Trussel	80	Poorly suited		Unsuited	
		Wetness	0.50	Wetness	1.00
Uf:					
Udifluvents	45	Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated	

Table 10d.--Forestland Management--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
Ux:					
Udorthents	60	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	
WeC:					
Weikert	80	Poorly suited		Well suited	
		Rock fragments	0.50		
WeD:					
Weikert	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
WeF:					
Weikert	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
WrG:					
Weikert	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Berks	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rough	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
ZoA:					
Zoar	80	Well suited		Well suited	

Table 10e.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:					
Allegheny	90	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
AlC:					
Allegheny	90	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
An:					
Atkins	35	Low		High	
				Wetness	1.00
Philo	30	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
Potomac	20	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
BaE:					
Belmont	75	Low		Moderate	
				Soil reaction	0.50
BcC:					
Berks	80	Low		Moderate	
				Soil reaction	0.50
BcE:					
Berks	75	Low		Moderate	
				Soil reaction	0.50
BcF:					
Berks	75	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
BkG:					
Berks	35	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Weikert	25	Low		Moderate	
				Soil reaction	0.50
Calvin	20	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
BlC:					
Berks	60	Low		Moderate	
				Soil reaction	0.50
Dekalb	30	Low		Moderate	
				Soil reaction	0.50
BlE:					
Berks	55	Low		Moderate	
				Soil reaction	0.50
Dekalb	35	Low		Moderate	
				Soil reaction	0.50
BlF:					
Berks	45	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Dekalb	40	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
BrE:					
Berks	50	Low		Moderate	
				Soil reaction	0.50
Weikert	35	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
BrF:					
Berks	50	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Weikert	35	Low		Moderate	
				Soil reaction	0.50
BtC:					
Blackthorn	75	Low		Moderate	
				Soil reaction	0.50
BtE:					
Blackthorn	75	Low		Moderate	
				Soil reaction	0.50
BxF:					
Briery	75	High		Low	
		Texture	1.00	Soil reaction	0.50
		Slope	1.00		
		Surface depth	1.00		
		Rock fragments	1.00		
Rock outcrop	15	Not rated		Not rated	

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CbC:					
Calvin	45	Low		Moderate	
				Soil reaction	0.50
Dekalb	25	Low		Moderate	
				Soil reaction	0.50
Berks	20	Low		Moderate	
				Soil reaction	0.50
CbE:					
Calvin	35	Low		Moderate	
				Soil reaction	0.50
Dekalb	30	Low		Moderate	
				Soil reaction	0.50
Berks	20	Low		Moderate	
				Soil reaction	0.50
CbF:					
Calvin	35	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Dekalb	25	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Berks	20	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
CeF:					
Caneyville	40	Moderate		Low	
		Texture	0.50		
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Frederick	30	Low		Low	
Rock outcrop	20	Not rated		Not rated	
CfB:					
Cateache	85	Low		Moderate	
				Soil reaction	0.50
CfC:					
Cateache	85	Low		Moderate	
				Soil reaction	0.50
CfD:					
Cateache	85	Low		Moderate	
				Soil reaction	0.50

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CfE:					
Cateache	85	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
CfF:					
Cateache	85	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
CgC:					
Cateache	85	Low		Moderate	
				Soil reaction	0.50
CgE:					
Cateache	85	Low		Moderate	
				Soil reaction	0.50
CgF:					
Cateache	85	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Ch:					
Chavies	85	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
CpB:					
Cookport	80	Low		High	
		Texture	0.10	Wetness	1.00
		Rock fragments	0.10	Soil reaction	0.50
CuB:					
Culleoka	90	Low		Moderate	
				Soil reaction	0.50
CuC:					
Culleoka	85	Low		Moderate	
				Soil reaction	0.50
CuD:					
Culleoka	85	Low		Moderate	
				Soil reaction	0.50
CyE:					
Culleoka	80	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
CyF:					
Culleoka	75	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
DeC:					
Dekalb	75	Low		Moderate	
				Soil reaction	0.50
DeE:					
Dekalb	75	Low		Moderate	
				Soil reaction	0.50
DeF:					
Dekalb	75	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
DhC:					
Dekalb	55	Low		Moderate	
				Soil reaction	0.50
Hazleton	35	Low		Moderate	
				Soil reaction	0.50
DhE:					
Dekalb	55	Low		Moderate	
				Soil reaction	0.50
Hazleton	35	Low		Moderate	
				Soil reaction	0.50
DhF:					
Dekalb	55	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Hazleton	35	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
DkF:					
Dekalb	45	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Rock outcrop	40	Not rated		Not rated	

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Du:					
Dunning	85	Low		High	
		Texture	0.10	Wetness	1.00
		Rock fragments	0.10		
ElF:					
Elliber	80	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Rock fragments	0.50		
ErB:					
Ernest	80	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
EsC:					
Ernest	75	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
FaE:					
Faywood	75	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
FaF:					
Faywood	75	Low		Low	
FkB:					
Frankstown	75	Low		Low	
FkC:					
Frankstown	75	Low		Low	
FkD:					
Frankstown	75	Low		Low	
FoC:					
Frankstown	75	Low		Low	
FoE:					
Frankstown	75	Low		Low	
FrB:					
Frederick	80	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
FrC:					
Frederick	80	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
FrD:					
Frederick	80	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
FyC:					
Frederick	45	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
Caneyville	35	Low		Low	
FyE:					
Frederick	40	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
Caneyville	40	Low		Low	
GaC:					
Gauley	85	Low		Moderate	
				Soil reaction	0.50
GaE:					
Gauley	80	Low		Moderate	
				Soil reaction	0.50
GnC:					
Gilpin	75	Low		Moderate	
				Soil reaction	0.50
GnD:					
Gilpin	75	Low		Moderate	
				Soil reaction	0.50
GpC:					
Gilpin	75	Low		Moderate	
				Soil reaction	0.50
GpE:					
Gilpin	75	Low		Moderate	
				Soil reaction	0.50
Ho:					
Holly	90	Low		High	
				Wetness	1.00
KxF:					
Kaymine	70	High		Low	
		Texture	1.00		
		Rock fragments	1.00		
Rock outcrop	15	Not rated		Not rated	
LcC:					
Leatherbark	85	Low		High	
		Texture	0.10	Wetness	1.00
		Rock fragments	0.10	Soil reaction	0.50
LgB:					
Lily	85	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LgC:					
Lily	85	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
LhE:					
Lily	80	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
Lo:					
Lobdell	75	Moderate		Low	
		Texture	0.50		
		Rock fragments	0.50		
MaB:					
Macove	85	Low		Moderate	
				Soil reaction	0.50
MaC:					
Macove	85	Low		Moderate	
				Soil reaction	0.50
MaD:					
Macove	80	Low		Moderate	
				Soil reaction	0.50
McC:					
Macove	80	Low		Moderate	
				Soil reaction	0.50
McE:					
Macove	75	Low		Moderate	
				Soil reaction	0.50
MeF:					
Macove	55	High		Moderate	
		Texture	1.00	Soil reaction	0.50
		Slope	1.00		
		Surface depth	1.00		
		Rock fragments	1.00		
Gilpin	30	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
MkC:					
Mandy	85	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
MkE:					
Mandy	80	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
MkF:					
Mandy	80	Low		Moderate	
				Soil reaction	0.50

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
MkG:					
Mandy	80	Low		Moderate	
				Soil reaction	0.50
Ml:					
Melvin	50	Moderate		High	
		Texture	0.50	Wetness	1.00
		Rock fragments	0.50		
Lindside	35	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
MzC:					
Mertz	75	Low		Moderate	
				Soil reaction	0.50
MzE:					
Mertz	75	Low		Moderate	
				Soil reaction	0.50
No:					
Nolin	80	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
Ph:					
Philo	75	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
Po:					
Pope	75	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
Pt:					
Potomac	80	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
PuA:					
Purdy	80	Low		High	
		Texture	0.10	Wetness	1.00
		Rock fragments	0.10		
Qu:					
Quarry	80	Not rated		Not rated	
Se:					
Sensabaugh	80	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
SfB:					
Shouns	85	Low		Moderate	
				Soil reaction	0.50
SfC:					
Shouns	85	Low		Moderate	
				Soil reaction	0.50

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
ShC:					
Shouns	80	Low		Moderate	
				Soil reaction	0.50
ShE:					
Shouns	75	Low		Moderate	
				Soil reaction	0.50
ShF:					
Shouns	75	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
SmC:					
Simoda	75	Low		Moderate	
				Soil reaction	0.50
SoC:					
Snowdog	75	Low		Moderate	
				Soil reaction	0.50
SoE:					
Snowdog	75	Low		Moderate	
				Soil reaction	0.50
SoF:					
Snowdog	75	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
SvC:					
Summers	75	Low		Moderate	
				Soil reaction	0.50
Tp:					
Tioga	55	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
Potomac	35	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		
TrC:					
Trussel	80	Low		High	
		Texture	0.10	Wetness	1.00
		Rock fragments	0.10	Soil reaction	0.50
Uf:					
Udifluvents	45	Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated	
Ux:					
Udorthents	60	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	

Table 10e.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
WeC:					
Weikert	80	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
WeD:					
Weikert	75	Low		Moderate	
		Texture	0.10	Soil reaction	0.50
		Rock fragments	0.10		
WeF:					
Weikert	75	Low		Moderate	
				Soil reaction	0.50
WrG:					
Weikert	40	Low		Moderate	
				Soil reaction	0.50
Berks	35	Moderate		Moderate	
		Texture	0.50	Soil reaction	0.50
		Slope	0.50		
		Surface depth	0.50		
		Rock fragments	0.50		
Rough	15	High		Moderate	
		Texture	1.00	Soil reaction	0.50
		Slope	1.00		
		Surface depth	1.00		
		Rock fragments	1.00		
ZoA:					
Zoar	80	Low		Low	
		Texture	0.10		
		Rock fragments	0.10		

Table 11a.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:							
Allegheny	90	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.22
AlC:							
Allegheny	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
						Gravel content	0.22
An:							
Atkins	35	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	0.44
Philo	30	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.05	Flooding	0.60
		Depth to saturated zone	0.10			Depth to saturated zone	0.10
						Large stones content	0.01
Potomac	20	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
BaE:							
Belmont	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
BcC:							
Berks	80	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23
BcE:							
Berks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23
BcF:							
Berks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23

Table 11a.--Recreation--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
BkG:							
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.46
						Gravel content	0.23
Weikert	25	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
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.12	Gravel content	0.12	Large stones content	0.68
Calvin	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.65
						Large stones content	0.53
						Depth to bedrock	0.46
BlC:							
Berks	60	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23
Dekalb	30	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.16
BlE:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.16
BlF:							
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23

Table 11a.--Recreation--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
BlF:							
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.16
BrE:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.01	Large stones content	0.01	Depth to bedrock	0.46
						Large stones content	0.38
						Gravel content	0.23
Weikert	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Gravel content	0.12	Gravel content	0.12	Gravel content	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.68
BrF:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.01	Large stones content	0.01	Depth to bedrock	0.46
						Large stones content	0.38
						Gravel content	0.23
Weikert	35	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	0.12	Gravel content	0.12	Gravel content	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.68
BtC:							
Blackthorn	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.23	Gravel content	0.23	Slope	1.00
		Slope	0.16	Slope	0.16	Gravel content	1.00
BtE:							
Blackthorn	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Gravel content	0.23	Gravel content	0.23	Gravel content	1.00
BxF:							
Briery	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.66	Gravel content	0.66	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.61
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 11a.--Recreation--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
CbC:							
Calvin	45	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Gravel content	0.65
						Large stones content	0.53
						Depth to bedrock	0.46
Dekalb	25	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.46
Berks	20	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.53
						Depth to bedrock	0.46
						Gravel content	0.23
CbE:							
Calvin	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.65
						Large stones content	0.53
Dekalb	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.16
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23
CbF:							
Calvin	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.65
						Large stones content	0.53
Dekalb	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.16
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23

Table 11a.--Recreation--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
CeF:							
Caneyville----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Depth to bedrock	0.92
						Restricted permeability	0.21
						Gravel content	0.11
Frederick----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
CfB:							
Cateache----------	85	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.41
CfC:							
Cateache----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.41
CfD:							
Cateache----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.41
						Depth to bedrock	0.05
CfE:							
Cateache----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Gravel content	0.41
						Depth to bedrock	0.05
CfF:							
Cateache----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.46
						Gravel content	0.41
CgC:							
Cateache----------	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.53
						Depth to bedrock	0.46
						Gravel content	0.41
CgE:							
Cateache----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.46
						Gravel content	0.41

Table 11a.--Recreation--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
CgF:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Gravel content	0.41
						Depth to bedrock	0.05
Ch:							
Chavies	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Gravel content	0.06
CpB:							
Cookport	80	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
		Restricted permeability	0.96	Depth to saturated zone	0.84	Slope	0.97
						Restricted permeability	0.96
						Gravel content	0.62
CuB:							
Culleoka	90	Not limited		Not limited		Somewhat limited	
						Slope	0.97
						Depth to bedrock	0.46
CuC:							
Culleoka	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
						Depth to bedrock	0.08
CuD:							
Culleoka	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.08
CyE:							
Culleoka	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.08
CyF:							
Culleoka	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.08
DeC:							
Dekalb	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
						Gravel content	0.73
						Depth to bedrock	0.46
DeE:							
Dekalb	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
						Gravel content	0.73
						Depth to bedrock	0.46

Table 11a.--Recreation--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
DeF:							
Dekalb	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Gravel content	0.73
						Depth to bedrock	0.16
DhC:							
Dekalb	55	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.46
Hazleton	35	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Slope	0.16	Slope	0.16	Gravel content	0.62
						Large stones content	0.53
DhE:							
Dekalb	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.46
Hazleton	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.62
						Large stones content	0.53
DhF:							
Dekalb	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Gravel content	0.73
						Depth to bedrock	0.46
Hazleton	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.62
						Large stones content	0.53
DkF:							
Dekalb	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Gravel content	0.73
						Depth to bedrock	0.16
Rock outcrop	40	Not rated		Not rated		Not rated	

Table 11a.--Recreation--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
Du:							
Dunning	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Restricted permeability	0.96	Restricted permeability	0.96
		Restricted permeability	0.96			Flooding	0.60
ElF:							
Elliber	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
ErB:							
Ernest	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.65	Restricted permeability	0.50	Slope	1.00
		Restricted permeability	0.50	Depth to saturated zone	0.31	Depth to saturated zone	0.65
						Restricted permeability	0.50
						Gravel content	0.16
						Large stones content	0.01
EsC:							
Ernest	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Depth to saturated zone	0.65	Restricted permeability	0.50	Slope	1.00
		Restricted permeability	0.50	Depth to saturated zone	0.31	Depth to saturated zone	0.65
		Slope	0.16	Slope	0.16	Restricted permeability	0.50
						Gravel content	0.16
FaE:							
Faywood	75	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.46
FaF:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Restricted permeability	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Slope	1.00
						Depth to bedrock	0.46
FkB:							
Frankstown	75	Not limited		Not limited		Very limited	
						Slope	1.00
FkC:							
Frankstown	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00

Table 11a.--Recreation--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
FkD:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
FoC:							
Frankstown	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
FoE:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
FrB:							
Frederick	80	Not limited		Not limited		Very limited	
						Slope	1.00
FrC:							
Frederick	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
FrD:							
Frederick	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
FyC:							
Frederick	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
Caneyville	35	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.21	Restricted permeability	0.21	Slope	1.00
						Depth to bedrock	0.92
		Slope	0.16	Slope	0.16	Restricted permeability	0.21
						Gravel content	0.11
FyE:							
Frederick	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Depth to bedrock	0.92
						Restricted permeability	0.21
						Gravel content	0.11
GaC:							
Gauley	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
						Gravel content	0.96
						Depth to bedrock	0.46
GaE:							
Gauley	80	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.96
						Depth to bedrock	0.46

Table 11a.--Recreation--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
GnC:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
						Gravel content	0.97
						Depth to bedrock	0.46
GnD:							
Gilpin	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Gravel content	0.97
						Depth to bedrock	0.46
GpC:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.96	Large stones content	0.96	Slope	1.00
						Gravel content	0.97
		Slope	0.16	Slope	0.16	Large stones content	0.53
						Depth to bedrock	0.46
GpE:							
Gilpin	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Gravel content	0.97
						Large stones content	0.53
						Depth to bedrock	0.46
Ho:							
Holly	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
KxF:							
Kaymine	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
						Large stones content	0.38
Rock outcrop	15	Not rated		Not rated		Not rated	
LcC:							
Leatherbark	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Restricted permeability	0.50	Slope	1.00
		Slope	0.01	Slope	0.01	Restricted permeability	0.50
		Large stones content	0.01	Large stones content	0.01	Depth to bedrock	0.01
LgB:							
Lily	85	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.46
LgC:							
Lily	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
						Depth to bedrock	0.23

Table 11a.--Recreation--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
LhE:							
Lily	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.23
Lo:							
Lobdell	75	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.62	Depth to saturated zone	0.95
		Depth to saturated zone	0.95			Flooding	0.60
MaB:							
Macove	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.38	Gravel content	0.38	Gravel content	1.00
						Slope	1.00
						Large stones content	0.03
MaC:							
Macove	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
		Gravel content	0.38	Gravel content	0.38	Gravel content	1.00
						Large stones content	0.03
MaD:							
Macove	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.38	Gravel content	0.38	Gravel content	1.00
						Large stones content	0.03
McC:							
Macove	80	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.38	Gravel content	0.38	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.53
McE:							
Macove	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.38	Gravel content	0.38	Large stones content	0.53
MeF:							
Macove	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.38	Gravel content	0.38	Gravel content	1.00
						Large stones content	0.03
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Gravel content	0.97
						Depth to bedrock	0.46
MkC:							
Mandy	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
						Gravel content	0.94
		Slope	0.16	Slope	0.16	Depth to bedrock	0.46

Table 11a.--Recreation--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
MkE:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.94
						Depth to bedrock	0.46
MkF:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.94
						Depth to bedrock	0.46
MkG:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.94
						Depth to bedrock	0.46
Ml:							
Melvin	50	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
Lindside	35	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.05	Flooding	0.60
		Depth to saturated zone	0.10			Depth to saturated zone	0.10
MzC:							
Mertz	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.28	Gravel content	0.28	Large stones content	0.53
		Restricted permeability	0.26	Restricted permeability	0.26	Restricted permeability	0.26
MzE:							
Mertz	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.28	Gravel content	0.28	Large stones content	0.53
		Restricted permeability	0.26	Restricted permeability	0.26	Restricted permeability	0.26
No:							
Nolin	80	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Ph:							
Philo	75	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.05	Flooding	0.60
		Depth to saturated zone	0.10			Depth to saturated zone	0.10
						Large stones content	0.01
Po:							
Pope	75	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
						Gravel content	0.06

Table 11a.--Recreation--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
Pt:							
Potomac	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Gravel content	1.00	Flooding	1.00
		Gravel content	1.00	Flooding	0.40	Gravel content	1.00
PuA:							
Purdy	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
						Gravel content	0.32
SfB:							
Shouns	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.54	Gravel content	0.54	Slope	1.00
						Gravel content	1.00
SfC:							
Shouns	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.62	Slope	0.62	Slope	1.00
		Gravel content	0.54	Gravel content	0.54	Gravel content	1.00
ShC:							
Shouns	80	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.54	Gravel content	0.54	Slope	1.00
		Slope	0.16	Slope	0.16	Gravel content	1.00
ShE:							
Shouns	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Gravel content	0.54	Gravel content	0.54	Gravel content	1.00
ShF:							
Shouns	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.54	Gravel content	0.54	Gravel content	1.00
SmC:							
Simoda	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
		Depth to saturated zone	0.47	Depth to saturated zone	0.21	Restricted permeability	0.96
		Slope	0.16	Slope	0.16	Depth to saturated zone	0.47

Table 11a.--Recreation--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
SoC:							
Snowdog	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Restricted permeability	0.50	Restricted permeability	0.50	Slope content	1.00
		Depth to saturated zone	0.47	Depth to saturated zone	0.21	Gravel content	0.76
		Slope	0.16	Slope	0.16	Restricted permeability	0.50
SoE:							
Snowdog	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Restricted permeability	0.50	Restricted permeability	0.50	Gravel content	0.76
		Depth to saturated zone	0.47	Depth to saturated zone	0.21	Restricted permeability	0.50
SoF:							
Snowdog	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Restricted permeability	0.50	Restricted permeability	0.50	Gravel content	0.76
		Depth to saturated zone	0.47	Depth to saturated zone	0.21	Restricted permeability	0.50
SvC:							
Summers	75	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.59	Gravel content	0.59	Gravel content	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
		Large stones content	0.01	Large stones content	0.01	Depth to bedrock	0.84
Tp:							
Tioga	55	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Potomac	35	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
TrC:							
Trussel	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Restricted permeability	0.50	Restricted permeability	0.50	Large stones content	0.53
		Slope	0.16	Slope	0.16	Restricted permeability	0.50
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	

Table 11a.--Recreation--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
WeC:							
Weikert	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.62	Slope	0.62	Depth to bedrock	1.00
		Gravel content	0.12	Gravel content	0.12	Gravel content	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.68
WeD:							
Weikert	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Gravel content	0.12	Gravel content	0.12	Gravel content	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.68
WeF:							
Weikert	75	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	0.12	Gravel content	0.12	Gravel content	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.68
WrG:							
Rough	15	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	0.70	Gravel content	0.70	Gravel content	1.00
						Large stones content	0.32
Weikert	40	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	0.12	Gravel content	0.12	Gravel content	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.68
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
						Depth to bedrock	0.50
						Gravel content	0.23
ZoA:							
Zoar	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Restricted permeability	0.50	Restricted permeability	0.50
		Depth to saturated zone	0.47	Depth to saturated zone	0.21	Depth to saturated zone	0.47

Table 11b.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:							
Allegheny	90	Not limited		Not limited		Not limited	
AlC:							
Allegheny	90	Not limited		Not limited		Somewhat limited	
						Slope	0.63
An:							
Atkins	35	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
Philo	30	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.03
						Large stones content	0.01
Potomac	20	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Droughty	0.93
BaE:							
Belmont	75	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Slope	0.10	Slope	1.00
BcC:							
Berks	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38
						Slope	0.04
BcE:							
Berks	75	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Droughty	0.80
						Depth to bedrock	0.50
BcF:							
Berks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38
BkG:							
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.46
						Large stones content	0.38

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BkG:							
Weikert	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
						Droughty	1.00
						Large stones content	0.68
						Gravel content	0.12
Calvin	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.46
						Droughty	0.15
						Large stones content	0.11
BlC:							
Berks	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38
						Slope	0.04
Dekalb	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Droughty	0.59
						Depth to bedrock	0.16
						Slope	0.04
BlE:							
Berks	55	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38
Dekalb	35	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Large stones content	0.79
						Droughty	0.59
						Depth to bedrock	0.16
BlF:							
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Droughty	0.59
						Depth to bedrock	0.16

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrE:							
Berks	50	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Slope	0.10	Slope	1.00
		Large stones content	0.01	Large stones content	0.01	Droughty	0.80
						Depth to bedrock	0.46
						Large stones content	0.38
Weikert	35	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Slope	0.10	Depth to bedrock	1.00
		Large stones content	0.01	Large stones content	0.01	Slope	1.00
						Droughty	1.00
						Large stones content	0.68
						Gravel content	0.12
BrF:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.01	Large stones content	0.01	Droughty	0.80
						Depth to bedrock	0.46
						Large stones content	0.38
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.01	Large stones content	0.01	Slope	1.00
						Droughty	1.00
						Large stones content	0.68
						Gravel content	0.12
BtC:							
Blackthorn	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Gravel content	0.23
						Slope	0.04
						Droughty	0.01
BtE:							
Blackthorn	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.99	Slope	0.10	Large stones content	1.00
						Gravel content	0.23
						Droughty	0.01
BxF:							
Briery	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	0.99	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.66
						Large stones content	0.61
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CbC:							
Calvin	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.46
						Droughty	0.15
						Large stones content	0.11
						Slope	0.04
Dekalb	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Droughty	0.82
						Large stones content	0.79
						Depth to bedrock	0.46
						Slope	0.04
Berks	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.46
						Large stones content	0.38
						Slope	0.04
CbE:							
Calvin	35	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Large stones content	0.11
Dekalb	30	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Large stones content	0.79
						Droughty	0.59
						Depth to bedrock	0.16
Berks	20	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38
CbF:							
Calvin	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.11
Dekalb	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.79
						Droughty	0.59
						Depth to bedrock	0.16
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CeF:							
Caneyville----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.92
						Droughty	0.04
Frederick----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
CfB:							
Cateache----------	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
CfC:							
Cateache----------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.46
CfD:							
Cateache----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.70			Slope	1.00
						Depth to bedrock	0.05
CfE:							
Cateache----------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.50	Depth to bedrock	0.05
CfF:							
Cateache----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.46
CgC:							
Cateache----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.46
						Slope	0.04
CgE:							
Cateache----------	85	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Depth to bedrock	0.46
CgF:							
Cateache----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.05
Ch:							
Chavies----------	85	Not limited		Not limited		Not limited	
CpB:							
Cookport----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.62	Depth to saturated zone	0.62	Depth to saturated zone	0.83

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CuB:							
Culleoka	90	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
CuC:							
Culleoka	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.08
CuD:							
Culleoka	85	Somewhat limited		Not limited		Very limited	
		Slope	0.70			Slope	1.00
						Depth to bedrock	0.08
CyE:							
Culleoka	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.50	Slope	1.00
						Depth to bedrock	0.08
CyF:							
Culleoka	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.08
DeC:							
Dekalb	75	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Droughty	0.82
						Large stones	0.79
						Depth to bedrock	0.46
						Slope	0.04
DeE:							
Dekalb	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
						Droughty	0.82
		Slope	0.99	Slope	0.10	Large stones content	0.79
						Depth to bedrock	0.46
DeF:							
Dekalb	75	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00			Large stones content	0.79
				Slope	1.00		
						Droughty	0.59
						Depth to bedrock	0.16
DhC:							
Dekalb	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Droughty	0.82
						Large stones content	0.79
						Depth to bedrock	0.46
						Slope	0.04
Hazleton	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.16
						Slope	0.04
						Droughty	0.03

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DhE:							
Dekalb	55	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Droughty	0.82
						Large stones content	0.79
						Depth to bedrock	0.46
Hazleton	35	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Large stones content	0.16
						Droughty	0.03
DhF:							
Dekalb	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.82
						Large stones content	0.79
						Depth to bedrock	0.46
Hazleton	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.16
						Droughty	0.03
DkF:							
Dekalb	45	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Large stones content	0.79
						Droughty	0.59
						Depth to bedrock	0.16
Rock outcrop	40	Not rated		Not rated		Not rated	
Du:							
Dunning	85	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
						Flooding	0.60
ElF:							
Elliber	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
						Large stones content	0.03
						Droughty	0.02
ErB:							
Ernest	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.01	Depth to saturated zone	0.01	Depth to saturated zone	0.28
						Large stones content	0.01

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
EsC:							
Ernest	75	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Depth to saturated zone	0.28
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
		Depth to saturated zone	0.01	Depth to saturated zone	0.01	Large stones content	0.01
FaE:							
Faywood	75	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.99	Slope	0.10	Depth to bedrock	0.46
FaF:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.46
FkB:							
Frankstown	75	Not limited		Not limited		Not limited	
FkC:							
Frankstown	75	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
FkD:							
Frankstown	75	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.70				
FoC:							
Frankstown	75	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
FoE:							
Frankstown	75	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.99	Slope	0.10		
FrB:							
Frederick	80	Not limited		Not limited		Not limited	
FrC:							
Frederick	80	Not limited		Not limited		Somewhat limited	
						Slope	0.63
FrD:							
Frederick	80	Somewhat limited		Not limited		Very limited	
		Slope	0.70			Slope	1.00
FyC:							
Frederick	45	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Caneyville	35	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	0.92
						Droughty	0.04
						Slope	0.04

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FyE:							
Frederick	40	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Slope	0.10	Slope	1.00
Caneyville	40	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.99	Slope	0.10	Depth to bedrock	0.92
						Droughty	0.04
GaC:							
Gauley	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Depth to bedrock	0.46
						Droughty	0.24
						Slope	0.04
GaE:							
Gauley	80	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.99	Slope	0.10	Large stones content	1.00
						Depth to bedrock	0.46
						Droughty	0.24
GnC:							
Gilpin	75	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.46
						Droughty	0.04
GnD:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.96	Large stones content	0.96	Slope	1.00
		Slope	0.70			Depth to bedrock	0.46
						Droughty	0.01
GpC:							
Gilpin	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.96	Large stones content	0.96	Depth to bedrock	0.46
						Slope	0.04
						Droughty	0.01
GpE:							
Gilpin	75	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.96	Slope	1.00
		Large stones content	0.96	Slope	0.10	Depth to bedrock	0.46
						Droughty	0.01
Ho:							
Holly	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
KxF:							
Kaymine	70	Very limited		Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
		Slope	1.00	Slope	0.99	Gravel content	1.00
						Large stones content	0.38

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KxF:							
Rock outcrop	15	Not rated		Not rated		Not rated	
LcC:							
Leatherbark	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Large stones content	0.01	Large stones content	0.01	Depth to bedrock	0.01
						Slope	0.01
LgB:							
Lily	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
LgC:							
Lily	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.23
LhE:							
Lily	80	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Slope	0.10	Slope	1.00
						Depth to bedrock	0.23
Lo:							
Lobdell	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.22	Depth to saturated zone	0.22	Depth to saturated zone	0.60
						Flooding	0.60
MaB:							
Macove	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.38
						Large stones content	0.03
						Droughty	0.01
MaC:							
Macove	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.38
						Large stones content	0.03
						Droughty	0.01
MaD:							
Macove	80	Somewhat limited		Not limited		Very limited	
		Slope	0.70			Slope	1.00
						Gravel content	0.38
						Large stones content	0.03
						Droughty	0.01
McC:							
Macove	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Gravel content	0.38
						Slope	0.04
						Large stones content	0.03
						Droughty	0.01

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
McE:							
Macove	75	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Gravel content	0.38
						Large stones content	0.03
						Droughty	0.01
MeF:							
Macove	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.38
						Large stones content	0.03
						Droughty	0.01
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.96	Large stones content	0.96	Depth to bedrock	0.46
						Droughty	0.01
MkC:							
Mandy	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Droughty	0.99
						Depth to bedrock	0.46
						Slope	0.04
MkE:							
Mandy	80	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Droughty	0.99
						Depth to bedrock	0.46
MkF:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.99
						Depth to bedrock	0.46
MkG:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.99
						Depth to bedrock	0.46
Ml:							
Melvin	50	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
Lindside	35	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.03

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MzC:							
Mertz	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.53	Large stones content	0.53	Slope	0.63
						Gravel content	0.28
						Large stones content	0.16
						Droughty	0.01
MzE:							
Mertz	75	Very limited		Somewhat limited		Very limited	
		Slope	0.99	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.10	Gravel content	0.28
						Large stones content	0.16
						Droughty	0.01
No:							
Nolin	80	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Ph:							
Philo	75	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.03
						Large stones content	0.01
Po:							
Pope	75	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Pt:							
Potomac	80	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Gravel content	1.00
						Droughty	0.93
PuA:							
Purdy	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
SfB:							
Shouns	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.54
SfC:							
Shouns	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.54

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ShC:							
Shouns	80	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Gravel content	0.54
						Slope	0.04
ShE:							
Shouns	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.99	Slope	0.10	Gravel content	0.54
ShF:							
Shouns	75	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Gravel content	0.54
SmC:							
Simoda	75	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Depth to saturated zone	0.19
						Slope	0.04
						Large stones content	0.03
SoC:							
Snowdog	75	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	0.99
						Depth to saturated zone	0.19
						Slope	0.04
SoE:							
Snowdog	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.99	Slope	0.10	Large stones content	0.99
						Depth to saturated zone	0.19
SoF:							
Snowdog	75	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Large stones content	0.99
						Depth to saturated zone	0.19
SvC:							
Summers	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.01	Large stones content	0.01	Depth to bedrock	0.84
						Gravel content	0.59
						Droughty	0.52
						Slope	0.01
Tp:							
Tioga	55	Not limited		Not limited		Somewhat limited	
						Flooding	0.60

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Tp:							
Potomac	35	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Droughty	0.93
TrC:							
Trussel	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Large stones content	0.53	Large stones content	0.53	Slope	0.04
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.01	Large stones content	0.01	Depth to bedrock	1.00
						Droughty	1.00
						Large stones content	0.68
						Slope	0.63
						Gravel content	0.12
WeD:							
Weikert	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.70	Large stones content	0.01	Depth to bedrock	1.00
		Large stones content	0.01			Slope	1.00
						Droughty	1.00
						Large stones content	0.68
						Gravel content	0.12
WeF:							
Weikert	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	0.99	Depth to bedrock	1.00
		Large stones content	0.01	Large stones content	0.01	Slope	1.00
						Droughty	1.00
						Large stones content	0.68
						Gravel content	0.12
WrG:							
Rough	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
						Gravel content	0.70
						Large stones content	0.32

Table 11b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WrG:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.01	Large stones content	0.01	Slope	1.00
						Droughty	1.00
						Large stones content	0.68
						Gravel content	0.12
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	0.80
						Depth to bedrock	0.50
						Large stones content	0.38
ZoA:							
Zoar	80	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19

Table 12a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:							
Allegheny	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12
AlC:							
Allegheny	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
An:							
Atkins	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Philo	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
Potomac	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
BaE:							
Belmont	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to hard bedrock	0.42		
BcC:							
Berks	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.46	Slope	1.00
		Large stones content	0.03	Slope	0.04	Large stones content	0.03
				Large stones content	0.03		
BcE:							
Berks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
BcF:							
Berks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		

Table 12a.--Building Site Development--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
BkG:							
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
Weikert	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Calvin	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
BlC:							
Berks	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.46	Slope	1.00
		Large stones content	0.03	Slope	0.04	Large stones content	0.03
				Large stones content	0.03		
Dekalb	30	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	1.00
		Large stones content	0.19	Large stones content	0.19	Depth to hard bedrock	0.46
		Slope	0.04	Slope	0.04	Large stones content	0.19
BlE:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
BlF:							
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19

Table 12a.--Building Site Development--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
BrE:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
BrF:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
BtC:							
Blackthorn	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
BtE:							
Blackthorn	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
BxF:							
Briery	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
CbC:							
Calvin	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.46	Slope	1.00
				Slope	0.04		
Dekalb	25	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	1.00
		Large stones content	0.19	Large stones content	0.19	Depth to hard bedrock	0.46
		Slope	0.04	Slope	0.04	Large stones content	0.19
Berks	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.46	Slope	1.00
		Large stones content	0.03	Slope	0.04	Large stones content	0.03
				Large stones content	0.03		

Table 12a.--Building Site Development--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
CbE:							
Calvin	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Dekalb	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
CbF:							
Calvin	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Dekalb	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
CeF:							
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.46	Shrink-swell	0.50	Depth to hard bedrock	0.46
Frederick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	1.00	Shrink-swell	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
CfB:							
Cateache	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
				Depth to soft bedrock	0.46	Shrink-swell	0.50

Table 12a.--Building Site Development--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
CfC:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
CfD:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
CfE:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
CfF:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
CgC:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Depth to soft bedrock	0.46	Shrink-swell	0.50
				Slope	0.04		
CgE:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
CgF:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
Ch:							
Chavies	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
CpB:							
Cookport	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Depth to hard bedrock	0.05	Slope	0.28

Table 12a.--Building Site Development--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
CuB:							
Culleoka	90	Not limited		Somewhat limited		Somewhat limited	
				Depth to soft bedrock	0.46	Slope	0.28
CuC:							
Culleoka	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Depth to soft bedrock	0.46		
CuD:							
Culleoka	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
CyE:							
Culleoka	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
CyF:							
Culleoka	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
DeC:							
Dekalb	75	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	1.00
		Large stones content	0.19	Large stones content	0.19	Depth to hard bedrock	0.46
		Slope	0.04	Slope	0.04	Large stones content	0.19
DeE:							
Dekalb	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
DeF:							
Dekalb	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
DhC:							
Dekalb	55	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	1.00
		Large stones content	0.19	Large stones content	0.19	Depth to hard bedrock	0.46
		Slope	0.04	Slope	0.04	Large stones content	0.19

Table 12a.--Building Site Development--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
DhC:							
Hazleton	35	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.17	Depth to hard bedrock	0.26	Slope	1.00
		Slope	0.04	Large stones content	0.17	Large stones content	0.17
				Slope	0.04		
DhE:							
Dekalb	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
Hazleton	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.17	Depth to hard bedrock	0.26	Large stones content	0.17
				Large stones content	0.17		
DhF:							
Dekalb	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
Hazleton	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.17	Depth to hard bedrock	0.26	Large stones content	0.17
				Large stones content	0.17		
DkF:							
Dekalb	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.19	Large stones content	0.19	Large stones content	0.19
Rock outcrop	40	Not rated		Not rated		Not rated	
Du:							
Dunning	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
ElF:							
Elliber	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 12a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ErB:							
Ernest	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.56	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
EsC:							
Ernest	75	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.56	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.56
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
FaE:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.46	Shrink-swell	0.50	Depth to hard bedrock	0.46
FaF:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.46	Shrink-swell	0.50	Depth to hard bedrock	0.46
FkB:							
Frankstown	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to hard bedrock	0.82	Slope	0.50
				Shrink-swell	0.50	Shrink-swell	0.50
FkC:							
Frankstown	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Depth to hard bedrock	0.82	Slope	1.00
		Shrink-swell	0.50	Slope	0.63	Shrink-swell	0.50
				Shrink-swell	0.50		
FkD:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	0.82	Shrink-swell	0.50
				Shrink-swell	0.50		
FoC:							
Frankstown	75	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Depth to hard bedrock	0.82	Slope	1.00
		Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
				Slope	0.04		
FoE:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	0.82	Shrink-swell	0.50
				Shrink-swell	0.50		

Table 12a.--Building Site Development--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
FrB:							
Frederick	80	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	1.00	Slope	0.50
						Shrink-swell	0.50
FrC:							
Frederick	80	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Shrink-swell	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	0.63	Shrink-swell	0.50
FrD:							
Frederick	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	1.00	Shrink-swell	0.50
FyC:							
Frederick	45	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Caneyville	35	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Shrink-swell	0.50	Shrink-swell	0.50
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.46
FyE:							
Frederick	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	1.00	Shrink-swell	0.50
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.46	Shrink-swell	0.50	Depth to hard bedrock	0.46
GaC:							
Gauley	85	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	1.00
		Large stones content	0.37	Large stones content	0.37	Depth to hard bedrock	0.46
		Slope	0.04	Slope	0.04	Large stones content	0.37
GaE:							
Gauley	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Large stones content	0.37	Large stones content	0.37	Large stones content	0.37
GnC:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Depth to soft bedrock	0.46		

Table 12a.--Building Site Development--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
GnD:							
Gilpin	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
GpC:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.46	Slope	1.00
				Slope	0.04		
GpE:							
Gilpin	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Ho:							
Holly	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
KxF:							
Kaymine	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
LcC:							
Leatherbark	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.01	Shrink-swell	0.50	Shrink-swell	0.50
LgB:							
Lily	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.46
LgC:							
Lily	85	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.63	Depth to hard bedrock	0.46
LhE:							
Lily	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Lo:							
Lobdell	75	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.90	Depth to saturated zone	1.00	Depth to saturated zone	0.90

Table 12a.--Building Site Development--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
MaB:							
Macove	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.02	Large stones content	0.02	Slope	0.50
						Large stones content	0.02
MaC:							
Macove	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.02
MaD:							
Macove	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.02
McC:							
Macove	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.02
McE:							
Macove	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.02
MeF:							
Macove	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.02
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
MkC:							
Mandy	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.46	Slope	1.00
				Slope	0.04		
MkE:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
MkF:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		

Table 12a.--Building Site Development--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
MkG:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Ml:							
Melvin	50	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
Lindside	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
MzC:							
Mertz	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
MzE:							
Mertz	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
No:							
Nolin	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35		
Ph:							
Philo	75	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
Po:							
Pope	75	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Pt:							
Potomac	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
PuA:							
Purdy	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.15		

Table 12a.--Building Site Development--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
SfB:							
Shouns	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
SfC:							
Shouns	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
ShC:							
Shouns	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
ShE:							
Shouns	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
ShF:							
Shouns	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
SmC:							
Simoda	75	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Depth to hard bedrock	0.05	Depth to saturated zone	0.39
				Slope	0.04		
SoC:							
Snowdog	75	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
SoE:							
Snowdog	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
SoF:							
Snowdog	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
SvC:							
Summers	75	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.01	Slope	0.01	Depth to hard bedrock	0.84
Tp:							
Tioga	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Potomac	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00

Table 12a.--Building Site Development--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
TrC:							
Trussel	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	0.63	Depth to soft bedrock	1.00
WeD:							
Weikert	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
WeF:							
Weikert	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
WrG:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.03	Depth to soft bedrock	0.46	Large stones content	0.03
				Large stones content	0.03		
Rough	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.01
ZoA:							
Zoar	80	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39

Table 12b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:							
Allegheny	90	Not limited		Very limited		Not rated	
				Cutbanks cave	1.00		
AlC:							
Allegheny	90	Somewhat limited		Very limited		Not rated	
		Slope	0.63	Cutbanks cave	1.00		
				Slope	0.63		
An:							
Atkins	35	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
						Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
		Flooding	1.00	Flooding	0.80		
Philo	30	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Frost action	0.50			Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Cutbanks cave	1.00		
				Flooding	0.60	Large stones content	0.01
Potomac	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	0.91
BaE:							
Belmont	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Low strength	1.00	Depth to hard bedrock	0.42		
		Shrink-swell	0.50				
				Too clayey	0.24		
BcC:							
Berks	80	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.04	Depth to soft bedrock	0.46		
		Large stones content	0.03				
				Cutbanks cave	0.10		
				Slope	0.04		
BcE:							
Berks	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
BcF:							
Berks	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BkG:							
Berks	35	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Weikert	25	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to soft bedrock	1.00		
		Depth to soft bedrock	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
Calvin	20	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
BlC:							
Berks	60	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.04	Depth to soft bedrock	0.46		
		Large stones content	0.03	Cutbanks cave	0.10		
				Slope	0.04		
Dekalb	30	Somewhat limited		Very limited		Not rated	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00		
		Large stones content	0.19	Large stones content	0.19		
		Slope	0.04	Cutbanks cave	0.10		
BlE:							
Berks	55	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Dekalb	35	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		
BlF:							
Berks	45	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Dekalb	40	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrE:							
Berks	50	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Weikert	35	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to soft bedrock	1.00		
		Depth to soft bedrock	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
BrF:							
Berks	50	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Weikert	35	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to soft bedrock	1.00		
		Depth to soft bedrock	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
BtC:							
Blackthorn	75	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.04	Too clayey	0.24		
				Cutbanks cave	0.10		
				Slope	0.04		
BtE:							
Blackthorn	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
				Too clayey	0.24		
				Cutbanks cave	0.10		
BxF:							
Briery	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.66
						Large stones content	0.61
Rock outcrop	15	Not rated		Not rated		Not rated	
CbC:							
Calvin	45	Somewhat limited		Somewhat limited		Not rated	
		Frost action	0.50	Depth to soft bedrock	0.46		
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
Dekalb	25	Somewhat limited		Very limited		Not rated	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00		
		Large stones content	0.19	Large stones content	0.19		
		Slope	0.04	Cutbanks cave	0.10		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CbC:							
Berks	20	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.04	Depth to soft bedrock	0.46		
		Large stones content	0.03	Cutbanks cave	0.10		
				Slope	0.04		
CbE:							
Calvin	35	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Dekalb	30	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		
Berks	20	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
CbF:							
Calvin	35	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Dekalb	25	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		
Berks	20	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
CeF:							
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Too clayey	0.50	Droughty	0.04
Frederick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CfB:							
Cateache	85	Somewhat limited		Somewhat limited		Not rated	
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
CfC:							
Cateache	85	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.63	Slope	0.63		
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
CfD:							
Cateache	85	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
CfE:							
Cateache	85	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
CfF:							
Cateache	85	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
CgC:							
Cateache	85	Somewhat limited		Somewhat limited		Not rated	
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
CgE:							
Cateache	85	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
CgF:							
Cateache	85	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Shrink-swell	0.50	Depth to soft bedrock	0.46		
		Frost action	0.50	Cutbanks cave	0.10		
Ch:							
Chavies	85	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Cutbanks cave	0.10		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CpB:							
Cookport	80	Somewhat limited		Very limited		Not rated	
		Depth to saturated zone	0.83	Depth to saturated zone	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
		Low strength	0.22	Depth to hard bedrock	0.05		
CuB:							
Culleoka	90	Somewhat limited		Somewhat limited		Not rated	
		Low strength	0.22	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
CuC:							
Culleoka	85	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.63	Slope	0.63		
		Low strength	0.22	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
CuD:							
Culleoka	85	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Low strength	0.22	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
CyE:							
Culleoka	80	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Low strength	0.22	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
CyF:							
Culleoka	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Low strength	0.22	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
DeC:							
Dekalb	75	Somewhat limited		Very limited		Not rated	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00		
		Large stones content	0.19	Large stones content	0.19		
		Slope	0.04	Cutbanks cave	0.10		
DeE:							
Dekalb	75	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DeF:							
Dekalb	75	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		
DhC:							
Dekalb	55	Somewhat limited		Very limited		Not rated	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00		
		Large stones content	0.19	Large stones content	0.19		
		Slope	0.04	Cutbanks cave	0.10		
Hazleton	35	Somewhat limited		Somewhat limited		Not rated	
		Frost action	0.50	Depth to hard bedrock	0.26		
		Large stones content	0.17	Large stones content	0.17		
		Slope	0.04	Cutbanks cave	0.10		
DhE:							
Dekalb	55	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		
Hazleton	35	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to hard bedrock	0.26		
		Large stones content	0.17	Large stones content	0.17		
DhF:							
Dekalb	55	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		
Hazleton	35	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to hard bedrock	0.26		
		Large stones content	0.17	Large stones content	0.17		
DkF:							
Dekalb	45	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
		Large stones content	0.19	Large stones content	0.19		
Rock outcrop	40	Not rated		Not rated		Not rated	

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Du:							
Dunning	85	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
		Flooding	1.00	Flooding	0.60	Flooding	0.60
ElF:							
Elliber	80	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Low strength	0.78	Cutbanks cave	0.10		
		Frost action	0.50				
ErB:							
Ernest	80	Very limited		Very limited		Not rated	
		Low strength	1.00	Depth to saturated zone	1.00		
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
EsC:							
Ernest	75	Very limited		Very limited		Not rated	
		Low strength	1.00	Depth to saturated zone	1.00		
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
				Slope	0.04		
FaE:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.46
		Shrink-swell	0.50	Slope	1.00		
				Cutbanks cave	0.10		
FaF:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.46
		Shrink-swell	0.50	Slope	1.00		
				Cutbanks cave	0.10		
FkB:							
Frankstown	75	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Depth to hard bedrock	0.82		
		Shrink-swell	0.50				
		Frost action	0.50	Cutbanks cave	0.10		
FkC:							
Frankstown	75	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	0.82	Slope	0.63
		Slope	0.63				
		Shrink-swell	0.50	Slope	0.63		
				Cutbanks cave	0.10		
FkD:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to hard bedrock	0.82		
		Shrink-swell	0.50				
				Cutbanks cave	0.10		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FoC:							
Frankstown	75	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	0.82	Slope	0.04
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50	Slope	0.04		
FoE:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to hard bedrock	0.82		
		Shrink-swell	0.50	Cutbanks cave	0.10		
FrB:							
Frederick	80	Very limited		Very limited		Not limited	
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
FrC:							
Frederick	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.63
		Slope	0.63	Slope	0.63		
		Shrink-swell	0.50	Cutbanks cave	0.10		
FrD:							
Frederick	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
FyC:							
Frederick	45	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.04
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50	Slope	0.04		
Caneyville	35	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Too clayey	0.50	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10	Droughty	0.04
FyE:							
Frederick	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	1.00	Depth to bedrock	0.46
		Frost action	0.50	Too clayey	0.50	Droughty	0.04
GaC:							
Gauley	85	Somewhat limited		Very limited		Not rated	
		Frost action	0.50	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Large stones content	0.37		
		Large stones content	0.37	Cutbanks cave	0.10		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GaE:							
Gauley	80	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Frost action	0.50	Slope	1.00		
		Depth to hard bedrock	0.46	Large stones content	0.37		
GnC:							
Gilpin	75	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.63	Slope	0.63		
		Frost action	0.50	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
GnD:							
Gilpin	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
GpC:							
Gilpin	75	Somewhat limited		Somewhat limited		Not rated	
		Frost action	0.50	Depth to soft bedrock	0.46		
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
GpE:							
Gilpin	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Ho:							
Holly	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
		Flooding	1.00	Cutbanks cave	0.10		
KxF:							
Kaymine	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	1.00
						Large stones content	0.38
Rock outcrop	15	Not rated		Not rated		Not rated	
LcC:							
Leatherbark	85	Very limited		Very limited		Not rated	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00		
		Low strength	1.00	Depth to saturated zone	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LgB:							
Lily	85	Somewhat limited		Very limited		Not rated	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00		
				Cutbanks cave	1.00		
LgC:							
Lily	85	Somewhat limited		Very limited		Not rated	
		Slope	0.63	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Cutbanks cave	1.00		
				Slope	0.63		
LhE:							
Lily	80	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Depth to hard bedrock	0.46	Slope	1.00		
				Cutbanks cave	1.00		
Lo:							
Lobdell	75	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.60
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Depth to saturated zone	0.60	Flooding	0.60		
MaB:							
Macove	85	Somewhat limited		Somewhat limited		Not rated	
		Frost action	0.50	Cutbanks cave	0.10		
		Large stones content	0.02	Large stones content	0.02		
MaC:							
Macove	85	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.63	Slope	0.63		
		Frost action	0.50	Cutbanks cave	0.10		
		Large stones content	0.02	Large stones content	0.02		
MaD:							
Macove	80	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
		Large stones content	0.02	Large stones content	0.02		
McC:							
Macove	80	Somewhat limited		Somewhat limited		Not rated	
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
		Large stones content	0.02	Large stones content	0.02		
McE:							
Macove	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
		Large stones content	0.02	Large stones content	0.02		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MeF:							
Macove	55	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
		Large stones content	0.02	Large stones content	0.02		
Gilpin	30	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
MkC:							
Mandy	85	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.04	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
				Slope	0.04		
MkE:							
Mandy	80	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
				Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
MkF:							
Mandy	80	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
				Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
MkG:							
Mandy	80	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
				Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Ml:							
Melvin	50	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	1.00
		Low strength	1.00	Cutbanks cave	0.10		
Lindside	35	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.03
		Low strength	1.00	Cutbanks cave	0.10		
MzC:							
Mertz	75	Somewhat limited		Somewhat limited		Not rated	
		Slope	0.63	Slope	0.63		
		Frost action	0.50	Cutbanks cave	0.10		
MzE:							
Mertz	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
No:							
Nolin	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	1.00	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
Ph:							
Philo	75	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Frost action	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Flooding	0.60	Large stones content	0.01
Po:							
Pope	75	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
Pt:							
Potomac	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	0.91
PuA:							
Purdy	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Too clayey	0.24		
		Low strength	1.00	Cutbanks cave	0.10		
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60		
				Depth to saturated zone	0.15		
SfB:							
Shouns	85	Very limited		Somewhat limited		Not rated	
		Low strength	1.00	Cutbanks cave	0.10		
SfC:							
Shouns	85	Very limited		Somewhat limited		Not rated	
		Low strength	1.00	Slope	0.63		
		Slope	0.63	Cutbanks cave	0.10		
ShC:							
Shouns	80	Very limited		Somewhat limited		Not rated	
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
ShE:							
Shouns	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ShF:							
Shouns	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
SmC:							
Simoda	75	Somewhat limited		Very limited		Not rated	
		Frost action	0.50	Depth to saturated zone	1.00		
		Depth to saturated zone	0.19	Cutbanks cave	0.10		
		Slope	0.04	Depth to hard bedrock	0.05		
SoC:							
Snowdog	75	Somewhat limited		Very limited		Not rated	
		Frost action	0.50	Depth to saturated zone	1.00		
		Depth to saturated zone	0.19	Dense layer	0.50		
		Slope	0.04	Cutbanks cave	0.10		
SoE:							
Snowdog	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to saturated zone	1.00		
		Depth to saturated zone	0.19	Dense layer	0.50		
SoF:							
Snowdog	75	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Depth to saturated zone	1.00		
		Depth to saturated zone	0.19	Dense layer	0.50		
SvC:							
Summers	75	Somewhat limited		Very limited		Not rated	
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.01	Slope	0.01		
Tp:							
Tioga	55	Very limited		Somewhat limited		Not rated	
		Flooding	1.00	Flooding	0.60		
		Frost action	0.50	Cutbanks cave	0.10		
Potomac	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	0.91
TrC:							
Trussel	80	Very limited		Very limited		Not rated	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Somewhat limited		Very limited		Not rated	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00		
		Slope	0.63	Slope	0.63		
		Frost action	0.50	Cutbanks cave	0.10		
WeD:							
Weikert	75	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to soft bedrock	1.00		
		Depth to soft bedrock	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
WeF:							
Weikert	75	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to soft bedrock	1.00		
		Depth to soft bedrock	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
WrG:							
Weikert	40	Very limited		Very limited		Not rated	
		Slope	1.00	Depth to soft bedrock	1.00		
		Depth to soft bedrock	1.00	Slope	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
Berks	35	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	0.03	Depth to soft bedrock	0.46		
				Cutbanks cave	0.10		
Rough	15	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
ZoA:							
Zoar	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Shrink-swell	0.50	Too clayey	0.24		
		Frost action	0.50	Cutbanks cave	0.10		

Table 13a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:					
Allegheny	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
AlC:					
Allegheny	90	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
An:					
Atkins	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage	1.00	Seepage	1.00
Philo	30	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	1.00
Potomac	20	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00		
BaE:					
Belmont	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.78	Seepage	0.50
		Slow water movement	0.50	Depth to hard bedrock	0.42
BcC:					
Berks	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
BcE:					
Berks	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00

Table 13a.--Sanitary Facilities--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
BcF:					
Berks	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
BkG:					
Berks	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Weikert	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Calvin	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
BlC:					
Berks	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
Dekalb	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.19	Slope	1.00
BlE:					
Berks	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Dekalb	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
BlF:					
Berks	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00

Table 13a.--Sanitary Facilities--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
BlF:					
Dekalb	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
BrE:					
Berks	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Weikert	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
BrF:					
Berks	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Weikert	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
BtC:					
Blackthorn	75	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
		Slope	0.04	Seepage	1.00
				Large stones content	0.43
BtE:					
Blackthorn	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	1.00
				Large stones content	0.43
BxF:					
Briery	75	Very limited		Very limited	
		Slope	1.00	Seepage	1.00
		Seepage	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated	
CbC:					
Calvin	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00

Table 13a.--Sanitary Facilities--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
CbC:					
Dekalb	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.19	Slope	1.00
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
CbE:					
Calvin	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Dekalb	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
CbF:					
Calvin	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Dekalb	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
CeF:					
Caneyville	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.21

Table 13a.--Sanitary Facilities--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
CeF:					
Frederick	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
CfB:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
CfC:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
CfD:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
CfE:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
CfF:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
CgC:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
CgE:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50

Table 13a.--Sanitary Facilities--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
CgF:					
Cateache	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Ch:					
Chavies	85	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Flooding	0.40	Flooding	0.40
CpB:					
Cookport	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.82
		Depth to bedrock	0.47	Seepage	0.50
CuB:					
Culleoka	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Seepage	1.00
				Slope	0.82
CuC:					
Culleoka	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
CuD:					
Culleoka	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
CyE:					
Culleoka	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
CyF:					
Culleoka	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
DeC:					
Dekalb	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.19	Slope	1.00

Table 13a.--Sanitary Facilities--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
DeE:					
Dekalb	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
DeF:					
Dekalb	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
DhC:					
Dekalb	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.19	Slope	1.00
Hazleton	35	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Depth to bedrock	0.69	Slope	1.00
		Large stones content	0.17	Large stones content	0.56
DhE:					
Dekalb	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Hazleton	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Depth to bedrock	0.69	Large stones content	0.56
DhF:					
Dekalb	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Hazleton	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Depth to bedrock	0.69	Large stones content	0.56
DkF:					
Dekalb	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Rock outcrop	40	Not rated		Not rated	

Table 13a.--Sanitary Facilities--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
Du:					
Dunning	85	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Slow water movement	1.00	Flooding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
ElF:					
Elliber	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
ErB:					
Ernest	80	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Slope	0.92
		Slow water movement	1.00	Depth to saturated zone	0.83
				Seepage	0.50
EsC:					
Ernest	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	0.83
		Slope	0.04	Seepage	0.50
FaE:					
Faywood	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
FaF:					
Faywood	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
FkB:					
Frankstown	75	Somewhat limited		Somewhat limited	
		Depth to bedrock	0.93	Slope	0.92
		Slow water movement	0.50	Depth to hard bedrock	0.82
				Seepage	0.50
FkC:					
Frankstown	75	Somewhat limited		Very limited	
		Depth to bedrock	0.93	Slope	1.00
		Slope	0.63	Depth to hard bedrock	0.82
		Slow water movement	0.50	Seepage	0.50
FkD:					
Frankstown	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.93	Depth to hard bedrock	0.82
		Slow water movement	0.50	Seepage	0.50

Table 13a.--Sanitary Facilities--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
FoC:					
Frankstown	75	Somewhat limited		Very limited	
		Depth to bedrock	0.93	Slope	1.00
		Slow water movement	0.50	Depth to hard bedrock	0.82
		Slope	0.04	Seepage	0.50
FoE:					
Frankstown	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.93	Depth to hard bedrock	0.82
		Slow water movement	0.50	Seepage	0.50
FrB:					
Frederick	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
FrC:					
Frederick	80	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
FrD:					
Frederick	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
FyC:					
Frederick	45	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
Caneyville	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.21
FyE:					
Frederick	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Caneyville	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.21
GaC:					
Gauley	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.37	Large stones content	1.00

Table 13a.--Sanitary Facilities--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
GaE:					
Gauley	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
GnC:					
Gilpin	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
				Seepage	0.50
GnD:					
Gilpin	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
GpC:					
Gilpin	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.50
GpE:					
Gilpin	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Ho:					
Holly	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage	1.00	Seepage	1.00
KxF:					
Kaymine	70	Very limited		Very limited	
		Slope	1.00	Seepage	1.00
		Seepage	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated	
LcC:					
Leatherbark	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	1.00

Table 13a.--Sanitary Facilities--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
LgB:					
Lily	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Seepage	1.00
				Slope	0.92
LgC:					
Lily	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
LhE:					
Lily	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Lo:					
Lobdell	75	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage	1.00	Seepage	1.00
MaB:					
Macove	85	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Large stones content	0.02	Slope	0.92
MaC:					
Macove	85	Very limited		Very limited	
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
		Large stones content	0.02		
MaD:					
Macove	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.02		
McC:					
Macove	80	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
		Large stones content	0.02		
McE:					
Macove	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.02		

Table 13a.--Sanitary Facilities--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
MeF:					
Macove	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.02		
Gilpin	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
MkC:					
Mandy	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
MkE:					
Mandy	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
MkF:					
Mandy	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
MkG:					
Mandy	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Ml:					
Melvin	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
Lindside	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage	1.00	Seepage	0.27
MzC:					
Mertz	75	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.63		

Table 13a.--Sanitary Facilities--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
MzE:					
Mertz	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
No:					
Nolin	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.84	Seepage	0.50
		Slow water movement	0.50	Depth to saturated zone	0.17
Ph:					
Philo	75	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	1.00
Po:					
Pope	75	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00
Pt:					
Potomac	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00		
PuA:					
Purdy	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
Qu:					
Quarry	80	Not rated		Not rated	
Se:					
Sensabaugh	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00
		Depth to saturated zone	0.40		
SfB:					
Shouns	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.92
				Seepage	0.50
SfC:					
Shouns	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50

Table 13a.--Sanitary Facilities--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
ShC:					
Shouns	80	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
ShE:					
Shouns	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
ShF:					
Shouns	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
SmC:					
Simoda	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	0.47	Seepage	0.50
SoC:					
Snowdog	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
SoE:					
Snowdog	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
SoF:					
Snowdog	75	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
SvC:					
Summers	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage	1.00	Seepage	1.00
		Slope	0.01	Slope	1.00
Tp:					
Tioga	55	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00

Table 13a.--Sanitary Facilities--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
Tp:					
Potomac	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00		
TrC:					
Trussel	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	0.04	Seepage	0.50
Uf:					
Udifluvents	45	Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated	
Ux:					
Udorthents	60	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	
WeC:					
Weikert	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Seepage	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
WeD:					
Weikert	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
WeF:					
Weikert	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
WrG:					
Weikert	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
Berks	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00

Table 13a.--Sanitary Facilities--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
WrG:					
Rough	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage	1.00	Large stones content	0.46
ZoA:					
Zoar	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		

Table 13b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	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
AlB:							
Allegheny	90	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
AlC:							
Allegheny	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
An:							
Atkins	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Seepage	1.00	Seepage	1.00	Seepage	0.13
Philo	30	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage	1.00	Seepage	1.00		
Potomac	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
		Too sandy	0.50			Too sandy	0.50
BaE:							
Belmont	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.42	Too clayey	1.00
		Too clayey	1.00			Depth to bedrock	0.42
BcC:							
Berks	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
		Slope	0.04	Slope	0.04	Gravel content	0.06
BcE:							
Berks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
BcF:							
Berks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
BkG:							
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BkG:							
Weikert	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	0.50
Calvin	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
BlC:							
Berks	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
		Slope	0.04	Slope	0.04	Gravel content	0.06
Dekalb	30	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	1.00
		Large stones content	0.19	Slope	0.04	Large stones content	0.19
BlE:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
BlF:							
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
BrE:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	0.50
BrF:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrF:							
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	0.50
BtC:							
Blackthorn	75	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Seepage	1.00	Seepage	0.21
				Slope	0.04	Slope	0.04
BtE:							
Blackthorn	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Seepage	1.00	Seepage	0.21
BxF:							
Briery	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Seepage	1.00	Seepage	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
Rock outcrop	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
CbC:							
Calvin	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Slope	0.04	Slope	0.04	Slope	0.04
Dekalb	25	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	1.00
		Large stones content	0.19	Slope	0.04	Large stones content	0.19
Berks	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
		Slope	0.04	Slope	0.04	Gravel content	0.06
CbE:							
Calvin	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
Dekalb	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CbF:							
Calvin	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
Dekalb	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
CeF:							
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
Frederick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Rock outcrop	20	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
CfB:							
Cateache	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.34
CfC:							
Cateache	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
CfD:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
CfE:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
CfF:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CgC:							
Cateache	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Gravel content	0.34
CgE:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
CgF:							
Cateache	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
Ch:							
Chavies	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Flooding	0.40	Flooding	0.40		
CpB:							
Cookport	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.05	Depth to bedrock	0.05
CuB:							
Culleoka	90	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
CuC:							
Culleoka	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Seepage	0.21
CuD:							
Culleoka	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
CyE:							
Culleoka	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
CyF:							
Culleoka	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DeC:							
Dekalb	75	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	1.00
		Large stones content	0.19	Slope	0.04	Large stones content	0.19
DeE:							
Dekalb	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
DeF:							
Dekalb	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
DhC:							
Dekalb	55	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	1.00
		Large stones content	0.19	Slope	0.04	Large stones content	0.19
Hazleton	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Seepage	1.00	Depth to bedrock	0.26	Large stones content	0.41
		Large stones content	0.41	Slope	0.04	Depth to bedrock	0.26
DhE:							
Dekalb	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Hazleton	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Seepage	1.00	Depth to bedrock	0.26	Large stones content	0.41
DhF:							
Dekalb	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
Hazleton	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Seepage	1.00	Depth to bedrock	0.26	Large stones content	0.41
DkF:							
Dekalb	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DkF:							
Rock outcrop	40	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
Du:							
Dunning	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Too clayey	1.00
ElF:							
Elliber	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.59
						Seepage	0.21
ErB:							
Ernest	80	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.83	Depth to saturated zone	0.91
						Too clayey	0.50
EsC:							
Ernest	75	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.83	Depth to saturated zone	0.91
		Slope	0.04	Slope	0.04	Too clayey	0.50
						Slope	0.04
FaE:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
FaF:							
Faywood	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
FkB:							
Frankstown	75	Very limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	1.00	Depth to bedrock	0.82	Depth to bedrock	0.82
		Too clayey	0.50			Gravel content	0.64
						Too clayey	0.50
FkC:							
Frankstown	75	Very limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	1.00	Depth to bedrock	0.82	Depth to bedrock	0.82
		Slope	0.63	Slope	0.63	Gravel content	0.64
		Too clayey	0.50			Slope	0.63
FkD:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.82	Depth to bedrock	0.82
		Too clayey	0.50			Gravel content	0.64

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FoC:							
Frankstown	75	Very limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	1.00	Depth to bedrock	0.82	Depth to bedrock	0.82
		Too clayey	0.50	Slope	0.04	Gravel content	0.64
		Slope	0.04			Too clayey	0.50
FoE:							
Frankstown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.82	Depth to bedrock	0.82
		Too clayey	0.50			Gravel content	0.64
FrB:							
Frederick	80	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
FrC:							
Frederick	80	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Hard to compact	1.00
						Slope	0.63
FrD:							
Frederick	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
FyC:							
Frederick	45	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
						Slope	0.04
Caneyville	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
FyE:							
Frederick	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
GaC:							
Gauley	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Large stones content	0.37	Slope	0.04	Large stones content	0.37
GaE:							
Gauley	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GnC:							
Gilpin	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.58
GnD:							
Gilpin	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.58
GpC:							
Gilpin	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.04	Slope	0.04	Gravel content	0.58
						Slope	0.04
GpE:							
Gilpin	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.58
Ho:							
Holly	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage	1.00				
KxF:							
Kaymine	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Seepage	1.00	Seepage	1.00	Slope	1.00
						Seepage	0.21
Rock outcrop	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
LcC:							
Leatherbark	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	0.50	Slope	0.01	Too clayey	0.50
LgB:							
Lily	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
LgC:							
Lily	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Seepage	0.50

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LhE:							
Lily	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
Lo:							
Lobdell	75	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.60
		Seepage	1.00	Seepage	1.00	Seepage	0.21
MaB:							
Macove	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Too clayey	0.50			Too clayey	0.50
		Large stones content	0.16			Large stones content	0.16
MaC:							
Macove	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Seepage	0.50
		Too clayey	0.50			Too clayey	0.50
MaD:							
Macove	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Too clayey	0.50			Too clayey	0.50
McC:							
Macove	80	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Large stones content	0.16			Large stones content	0.16
McE:							
Macove	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Too clayey	0.50			Too clayey	0.50
MeF:							
Macove	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Too clayey	0.50			Too clayey	0.50
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.58
MkC:							
Mandy	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.04	Slope	0.04	Gravel content	0.29
						Slope	0.04

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MkE:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.29
MkF:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.29
MkG:							
Mandy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.29
Ml:							
Melvin	50	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		
Lindside	35	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage	1.00				
MzC:							
Mertz	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Gravel content	0.75
		Too clayey	0.50			Slope	0.63
						Too clayey	0.50
MzE:							
Mertz	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Gravel content	0.75
						Too clayey	0.50
No:							
Nolin	80	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
Ph:							
Philo	75	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage	1.00	Seepage	1.00		
Po:							
Pope	75	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.21
		Seepage	1.00	Seepage	1.00		

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pt:							
Potomac	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
		Too sandy	0.50			Too sandy	0.50
Purdy	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Gravel content	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.21
		Seepage	1.00	Seepage	1.00		
SfB:							
Shouns	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Gravel content	0.92
						Too clayey	0.50
SfC:							
Shouns	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Gravel content	0.92
		Too clayey	0.50			Slope	0.63
						Too clayey	0.50
ShC:							
Shouns	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Gravel content	0.92
		Slope	0.04			Too clayey	0.50
						Slope	0.04
ShE:							
Shouns	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Gravel content	0.92
						Too clayey	0.50
ShF:							
Shouns	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Gravel content	0.92
						Too clayey	0.50
SmC:							
Simoda	75	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Depth to bedrock	1.00	Depth to bedrock	0.05	Too clayey	0.50
		Too clayey	0.50	Slope	0.04	Gravel content	0.45

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SoC:							
Snowdog	75	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage	1.00	Slope	0.04	Seepage	0.21
		Slope	0.04			Slope	0.04
SoE:							
Snowdog	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage	1.00			Seepage	0.21
SoF:							
Snowdog	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage	1.00			Seepage	0.21
SvC:							
Summers	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.50
		Slope	0.01	Slope	0.01	Gravel content	0.10
Tp:							
Tioga	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00		
Potomac	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	1.00
		Too sandy	0.50			Too sandy	0.50
TrC:							
Trussel	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.04	Slope	0.04	Gravel content	0.23
						Slope	0.04
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.63	Slope	0.63
		Slope	0.63			Seepage	0.50

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WeD:							
Weikert	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	0.50
WeF:							
Weikert	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	0.50
WrG:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	0.50
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
Rough	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
ZoA:							
Zoar	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Too clayey	0.50			Too clayey	0.50

Table 14a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
AlB:					
Allegheny	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
AlC:					
Allegheny	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
An:					
Atkins	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Philo	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Potomac	20	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.07	Bottom layer	0.08
BaE:					
Belmont	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
BcC:					
Berks	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BcE:					
Berks	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
BcF:					
Berks	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BkG:					
Berks	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Weikert	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Calvin	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
BlC:					
Berks	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dekalb	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BlE:					
Berks	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dekalb	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
BlF:					
Berks	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Dekalb	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BrE:					
Berks	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Weikert	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
BrF:					
Berks	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Weikert	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
BtC:					
Blackthorn	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BtE:					
Blackthorn	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
BxF:					
Briery	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
CbC:					
Calvin	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dekalb	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Berks	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CbE:					
Calvin	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dekalb	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CbF:					
Calvin	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dekalb	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Berks	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CeF:					
Caneyville	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Frederick	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
CfB:					
Cateache	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CfC:					
Cateache	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
CfD:					
Cateache	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CfE:					
Cateache	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CfF:					
Cateache	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CgC:					
Cateache	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CgE:					
Cateache	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CgF:					
Cateache	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Ch:					
Chavies	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CpB:					
Cookport	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CuB:					
Culleoka	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CuC:					
Culleoka	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CuD:					
Culleoka	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
CyE:					
Culleoka	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
CyF:					
Culleoka	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
DeC:					
Dekalb	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
DeE:					
Dekalb	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
DeF:					
Dekalb	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
DhC:					
Dekalb	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hazleton	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.02
DhE:					
Dekalb	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Hazleton	35	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.02
DhF:					
Dekalb	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Hazleton	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.02
DkF:					
Dekalb	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	40	Not rated		Not rated	
Du:					
Dunning	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
ElF:					
Elliber	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
ErB:					
Ernest	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
EsC:					
Ernest	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
FaE:					
Faywood	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
FaF:					
Faywood	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
FkB:					
Frankstown	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
FkC:					
Frankstown	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
FkD:					
Frankstown	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
FoC:					
Frankstown	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
FoE:					
Frankstown	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
FrB:					
Frederick	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
FrC:					
Frederick	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
FrD:					
Frederick	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
FyC:					
Frederick	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Caneyville	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
FyE:					
Frederick	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Caneyville	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GaC:					
Gauley	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GaE:					
Gauley	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
GnC:					
Gilpin	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GnD:					
Gilpin	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
GpC:					
Gilpin	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
GpE:					
Gilpin	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Ho:					
Holly	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
KxF:					
Kaymine	70	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.10	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
LcC:					
Leatherbark---------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
LgB:					
Lily----------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
LgC:					
Lily----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
LhE:					
Lily----------	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Lo:					
Lobdell----------	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
MaB:					
Macove----------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
MaC:					
Macove----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MaD:					
Macove----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McC:					
Macove----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McE:					
Macove----------	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
MeF:					
Macove----------	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Gilpin----------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MkC:					
Mandy----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
MkE:					
Mandy	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
MkF:					
Mandy	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MkG:					
Mandy	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ml:					
Melvin	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01
Lindside	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
MzC:					
Mertz	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
MzE:					
Mertz	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
No:					
Nolin	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ph:					
Philo	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Po:					
Pope	75	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.01
Pt:					
Potomac	80	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.07	Bottom layer	0.08
PuA:					
Purdy	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Qu:					
Quarry	80	Not rated		Not rated	

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Se:					
Sensabaugh----------	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
SfB:					
Shouns----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SfC:					
Shouns----------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
ShC:					
Shouns----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
ShE:					
Shouns----------	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
ShF:					
Shouns----------	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
SmC:					
Simoda----------	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SoC:					
Snowdog----------	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
SoE:					
Snowdog----------	75	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.02
SoF:					
Snowdog----------	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
SvC:					
Summers----------	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Tp:					
Tioga----------	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Potomac----------	35	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.07	Bottom layer	0.08

Table 14a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
TrC:					
Trussel	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Uf:					
Udifluvents	45	Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated	
Ux:					
Udorthents	60	Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated	
WeC:					
Weikert	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WeD:					
Weikert	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
WeF:					
Weikert	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
WrG:					
Weikert	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rough	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
ZoA:					
Zoar	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:							
Allegheny	90	Poor		Good		Fair	
		Too acid	0.00			Too acid	0.59
		Organic matter content low	0.82			Hard to reclaim (rock fragments)	0.68
						Rock fragments	0.92
AlC:							
Allegheny	90	Poor		Good		Fair	
		Too acid	0.00			Slope	0.37
		Organic matter content low	0.82			Too acid	0.59
						Hard to reclaim (rock fragments)	0.68
An:							
Atkins	35	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.96			Hard to reclaim (rock fragments)	0.32
						Too acid	0.88
Philo	30	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.76	Hard to reclaim (dense layer)	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.32
		Water erosion	0.99			Wetness depth	0.76
Potomac	20	Fair		Good		Poor	
		Droughty	0.11			Hard to reclaim (rock fragments)	0.00
		Too sandy	0.22			Rock fragments	0.00
		Organic matter content low	0.78			Too sandy	0.22
BaE:							
Belmont	75	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.23	Depth to bedrock	0.58	Too clayey	0.00
		Too acid	0.50	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.00
BcC:							
Berks	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.50	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.92
BcE:							
Berks	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
BcF:							
Berks	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BkG:							
Berks	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
Weikert	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.71	Depth to bedrock	0.00
Calvin	20	Fair		Poor		Poor	
		Droughty	0.06	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
				Cobble content	0.83	Depth to bedrock	0.54
		Too acid	0.50				
BlC:							
Berks	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.50	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.92
Dekalb	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.04	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
BlE:							
Berks	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
Dekalb	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
BlF:							
Berks	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
Dekalb	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
BrE:							
Berks	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
Weikert	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.71	Depth to bedrock	0.00

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BrF:							
Berks	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
Weikert	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.71	Depth to bedrock	0.00
BtC:							
Blackthorn	75	Fair		Fair		Poor	
		Too acid	0.03	Cobble content	0.80	Rock fragments	0.00
		Organic matter content low	0.88			Slope	0.96
						Too acid	0.98
BtE:							
Blackthorn	75	Fair		Poor		Poor	
		Too acid	0.03	Slope	0.00	Slope	0.00
		Organic matter content low	0.88	Cobble content	0.80	Rock fragments	0.00
						Too acid	0.98
BxF:							
Briery	75	Fair		Poor		Poor	
		Organic matter content low	0.02	Slope	0.00	Rock fragments	0.00
				Cobble content	0.98	Hard to reclaim (rock fragments)	0.00
						Slope	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
CbC:							
Calvin	45	Fair		Poor		Poor	
		Droughty	0.06	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Cobble content	0.83	Depth to bedrock	0.54
		Too acid	0.50			Slope	0.96
Dekalb	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.04	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
Berks	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.50	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.92
CbE:							
Calvin	35	Fair		Poor		Poor	
		Droughty	0.06	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.83	Depth to bedrock	0.54
Dekalb	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CbE:							
Berks	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
CbF:							
Calvin	35	Fair		Poor		Poor	
		Droughty	0.06	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
				Cobble content	0.83	Depth to bedrock	0.54
		Too acid	0.50				
Dekalb	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
Berks	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
CeF:							
Caneyville	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.02	Slope	0.00	Too clayey	0.00
				Shrink-swell	0.87	Depth to bedrock	0.54
		Droughty	0.13				
Frederick	30	Fair		Poor		Poor	
		Organic matter content low	0.18	Slope	0.00	Slope	0.00
				Low strength	0.00	Too clayey	0.50
		Too clayey	0.68	Shrink-swell	0.39	Hard to reclaim (rock fragments)	0.82
		Too acid	0.92				
Rock outcrop	20	Not rated		Not rated		Not rated	
CfB:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Shrink-swell	0.89	Too clayey	0.47
		Too clayey	0.50			Depth to bedrock	0.54
CfC:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Shrink-swell	0.89	Slope	0.37
		Too clayey	0.50			Too clayey	0.47
CfD:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.50	Rock fragments	0.00
		Too clayey	0.50	Shrink-swell	0.89	Too clayey	0.47
CfE:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Too clayey	0.50	Shrink-swell	0.89	Too clayey	0.47

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CfF:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Too clayey	0.50	Shrink-swell	0.89	Too clayey	0.47
CgC:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Shrink-swell	0.89	Too clayey	0.47
		Too clayey	0.50			Depth to bedrock	0.54
CgE:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Too clayey	0.50	Shrink-swell	0.89	Too clayey	0.47
CgF:							
Cateache	85	Fair		Poor		Poor	
		Droughty	0.29	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Too clayey	0.50	Shrink-swell	0.89	Too clayey	0.47
Ch:							
Chavies	85	Fair		Good		Fair	
		Organic matter content low	0.60			Rock fragments	0.97
		Too acid	0.88				
CpB:							
Cookport	80	Fair		Fair		Fair	
		Too acid	0.01	Wetness depth	0.09	Wetness depth	0.09
		Organic matter content low	0.68	Low strength	0.78	Hard to reclaim (rock fragments)	0.50
		Droughty	0.99	Depth to bedrock	0.95	Too acid	0.59
CuB:							
Culleoka	90	Fair		Poor		Fair	
		Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.50
		Droughty	0.52	Low strength	0.78	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.99		
CuC:							
Culleoka	85	Fair		Poor		Fair	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.37
		Droughty	0.52	Low strength	0.78	Rock fragments	0.50
		Depth to bedrock	0.54	Cobble content	0.99	Depth to bedrock	0.54
CuD:							
Culleoka	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.52	Slope	0.50	Rock fragments	0.50
		Depth to bedrock	0.54	Low strength	0.78	Depth to bedrock	0.54
CyE:							
Culleoka	80	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.52	Slope	0.00	Rock fragments	0.50
		Depth to bedrock	0.54	Low strength	0.78	Depth to bedrock	0.54

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CyF:							
Culleoka	75	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.52	Slope	0.00	Rock fragments	0.50
		Depth to bedrock	0.54	Low strength	0.78	Depth to bedrock	0.54
DeC:							
Dekalb	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.04	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
DeE:							
Dekalb	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
DeF:							
Dekalb	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
DhC:							
Dekalb	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.04	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
Hazleton	35	Fair		Fair		Poor	
		Too acid	0.50	Cobble content	0.17	Hard to reclaim (rock fragments)	0.00
		Droughty	0.76	Depth to bedrock	0.74		
		Cobble content	0.81			Rock fragments	0.00
						Too acid	0.59
DhE:							
Dekalb	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
Hazleton	35	Fair		Poor		Poor	
		Too acid	0.50	Slope	0.00	Slope	0.00
		Droughty	0.76	Cobble content	0.17	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.81	Depth to bedrock	0.74		
						Rock fragments	0.00
DhF:							
Dekalb	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
Hazleton	35	Fair		Poor		Poor	
		Too acid	0.50	Slope	0.00	Slope	0.00
		Droughty	0.76	Cobble content	0.17	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.81	Depth to bedrock	0.74		
						Rock fragments	0.00

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DkF:							
Dekalb	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.04	Depth to bedrock	0.54
Rock outcrop	40	Not rated		Not rated		Not rated	
Du:							
Dunning	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.99	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.95		
ElF:							
Elliber	80	Fair		Poor		Poor	
		Too acid	0.50	Slope	0.00	Slope	0.00
		Organic matter content low	0.92	Low strength	0.22	Rock fragments	0.00
				Cobble content	0.97	Hard to reclaim (rock fragments)	0.03
ErB:							
Ernest	80	Fair		Fair		Fair	
		Too acid	0.03	Low strength	0.22	Rock fragments	0.41
		Organic matter content low	0.32	Wetness depth	0.44	Wetness depth	0.44
				Shrink-swell	0.99	Hard to reclaim (rock fragments)	0.84
EsC:							
Ernest	75	Fair		Fair		Fair	
		Too acid	0.03	Low strength	0.22	Rock fragments	0.41
		Organic matter content low	0.32	Wetness depth	0.44	Wetness depth	0.44
				Shrink-swell	0.99	Hard to reclaim (rock fragments)	0.84
FaE:							
Faywood	75	Fair		Poor		Poor	
		Too clayey	0.50	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Low strength	0.00	Too clayey	0.44
		Droughty	0.60	Slope	0.00	Depth to bedrock	0.54
FaF:							
Faywood	75	Fair		Poor		Poor	
		Too clayey	0.50	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Too clayey	0.44
		Droughty	0.60	Low strength	0.00	Depth to bedrock	0.54
FkB:							
Frankstown	75	Fair		Poor		Poor	
		Too acid	0.54	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.92	Depth to bedrock	0.18	Rock fragments	0.00
		Organic matter content low	0.98	Shrink-swell	0.87	Too clayey	0.69
FkC:							
Frankstown	75	Fair		Poor		Poor	
		Too acid	0.54	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.92	Depth to bedrock	0.18	Rock fragments	0.00
		Organic matter content low	0.98	Shrink-swell	0.87	Slope	0.37

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FkD:							
Frankstown----------	75	Fair		Poor		Poor	
		Too acid	0.54	Low strength	0.00	Slope	0.00
		Too clayey	0.92	Depth to bedrock	0.18	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.98	Slope	0.50	Rock fragments	0.00
FoC:							
Frankstown----------	75	Fair		Poor		Poor	
		Too acid	0.54	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.92	Depth to bedrock	0.18	Rock fragments	0.00
		Organic matter content low	0.98	Shrink-swell	0.87	Too clayey	0.69
FoE:							
Frankstown----------	75	Fair		Poor		Poor	
		Too acid	0.54	Slope	0.00	Slope	0.00
		Too clayey	0.92	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.98	Depth to bedrock	0.18	Rock fragments	0.00
FrB:							
Frederick----------	80	Fair		Poor		Fair	
		Organic matter content low	0.18	Low strength	0.00	Too clayey	0.50
		Too clayey	0.68	Shrink-swell	0.39	Hard to reclaim (rock fragments)	0.82
		Too acid	0.92			Rock fragments	0.99
FrC:							
Frederick----------	80	Fair		Poor		Fair	
		Organic matter content low	0.18	Low strength	0.00	Slope	0.37
		Too clayey	0.68	Shrink-swell	0.39	Too clayey	0.50
		Too acid	0.92			Hard to reclaim (rock fragments)	0.82
FrD:							
Frederick----------	80	Fair		Poor		Poor	
		Organic matter content low	0.18	Low strength	0.00	Slope	0.00
		Too clayey	0.68	Shrink-swell	0.39	Too clayey	0.50
		Too acid	0.92	Slope	0.50	Hard to reclaim (rock fragments)	0.82
FyC:							
Frederick----------	45	Fair		Poor		Fair	
		Organic matter content low	0.18	Low strength	0.00	Too clayey	0.50
		Too clayey	0.68	Shrink-swell	0.39	Hard to reclaim (rock fragments)	0.82
		Too acid	0.92			Slope	0.96
Caneyville----------	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.02	Shrink-swell	0.87	Depth to bedrock	0.54
		Droughty	0.13			Slope	0.96
FyE:							
Frederick----------	40	Fair		Poor		Poor	
		Organic matter content low	0.18	Low strength	0.00	Slope	0.00
		Too clayey	0.68	Slope	0.00	Too clayey	0.50
		Too acid	0.92	Shrink-swell	0.39	Hard to reclaim (rock fragments)	0.82

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FyE:							
Caneyville----------	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.02	Slope	0.00	Too clayey	0.00
		Droughty	0.13	Shrink-swell	0.87	Depth to bedrock	0.54
GaC:							
Gauley----------	85	Fair		Poor		Poor	
		Droughty	0.03	Depth to bedrock	0.00	Hard to reclaim (dense layer)	0.00
		Too acid	0.50	Cobble content	0.20	Rock fragments	0.00
		Depth to bedrock	0.54	Stone content	0.99	Depth to bedrock	0.54
GaE:							
Gauley----------	80	Fair		Poor		Poor	
		Droughty	0.03	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Hard to reclaim (dense layer)	0.00
		Depth to bedrock	0.54	Cobble content	0.20	Rock fragments	0.00
GnC:							
Gilpin----------	75	Fair		Poor		Poor	
		Droughty	0.14	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Slope	0.37
		Depth to bedrock	0.54			Depth to bedrock	0.54
GnD:							
Gilpin----------	75	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.50	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
GpC:							
Gilpin----------	75	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
GpE:							
Gilpin----------	75	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
Ho:							
Holly----------	90	Fair		Poor		Poor	
		Organic matter content low	0.96	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.97				
KxF:							
Kaymine----------	70	Fair		Poor		Poor	
		Organic matter content low	0.18	Slope	0.00	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.00
						Slope	0.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
LcC:							
Leatherbark---------	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Wetness depth	0.00
		Too clayey	0.68	Wetness depth	0.00	Too clayey	0.53
		Droughty	0.75	Low strength	0.00	Too acid	0.59
LgB:							
Lily----------	85	Fair		Poor		Fair	
		Droughty	0.40	Depth to bedrock	0.00	Depth to bedrock	0.54
		Too acid	0.50			Too acid	0.59
		Depth to bedrock	0.54				
LgC:							
Lily----------	85	Fair		Poor		Fair	
		Droughty	0.40	Depth to bedrock	0.00	Slope	0.37
		Too acid	0.50			Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
LhE:							
Lily----------	80	Fair		Poor		Poor	
		Droughty	0.40	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
Lo:							
Lobdell----------	75	Fair		Fair		Poor	
		Organic matter content low	0.37	Wetness depth	0.22	Hard to reclaim (rock fragments)	0.00
		Too acid	0.97			Wetness depth	0.22
		Water erosion	0.99				
MaB:							
Macove----------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Cobble content	0.36	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Rock fragments	0.00
		Too clayey	0.50			Too clayey	0.29
MaC:							
Macove----------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Cobble content	0.36	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Rock fragments	0.00
		Too clayey	0.50			Too clayey	0.29
MaD:							
Macove----------	80	Fair		Fair		Poor	
		Organic matter content low	0.12	Cobble content	0.36	Slope	0.00
		Too acid	0.50	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.50			Rock fragments	0.00
McC:							
Macove----------	80	Fair		Fair		Poor	
		Organic matter content low	0.12	Cobble content	0.36	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Rock fragments	0.00
		Too clayey	0.50			Too clayey	0.29

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
McE:							
Macove	75	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Cobble content	0.36	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.50			Rock fragments	0.00
MeF:							
Macove	55	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Cobble content	0.36	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.50			Rock fragments	0.00
Gilpin	30	Fair		Poor		Poor	
		Droughty	0.21	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
MkC:							
Mandy	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Depth to bedrock	0.54
		Depth to bedrock	0.54			Too acid	0.59
MkE:							
Mandy	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
MkF:							
Mandy	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
MkG:							
Mandy	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
Ml:							
Melvin	50	Fair		Poor		Poor	
		Water erosion	0.90	Wetness depth	0.00	Wetness depth	0.00
				Low strength	0.00		
Lindside	35	Fair		Poor		Fair	
		Organic matter content low	0.82	Low strength	0.00	Wetness depth	0.76
		Water erosion	0.99	Wetness depth	0.76		
MzC:							
Mertz	75	Fair		Good		Poor	
		Too acid	0.01			Rock fragments	0.00
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.12
		Too clayey	0.32			Too clayey	0.19

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MzE:							
Mertz	75	Fair		Poor		Poor	
		Too acid	0.01	Slope	0.00	Slope	0.00
		Organic matter content low	0.12			Rock fragments	0.00
		Too clayey	0.32			Hard to reclaim (rock fragments)	0.12
No:							
Nolin	80	Fair		Poor		Good	
		Water erosion	0.90	Low strength	0.00		
Ph:							
Philo	75	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.76	Hard to reclaim (dense layer)	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.32
		Water erosion	0.99			Wetness depth	0.76
Po:							
Pope	75	Fair		Good		Fair	
		Too acid	0.12			Too acid	0.59
		Organic matter content low	0.92			Hard to reclaim (rock fragments)	0.82
Pt:							
Potomac	80	Fair		Good		Poor	
		Droughty	0.11			Hard to reclaim (rock fragments)	0.00
		Too sandy	0.22			Rock fragments	0.00
		Organic matter content low	0.78			Too sandy	0.22
PuA:							
Purdy	80	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.03	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Shrink-swell	0.87	Too acid	0.59
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Good		Good		Poor	
						Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.32
SfB:							
Shouns	85	Fair		Poor		Poor	
		Too acid	0.01	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.50			Rock fragments	0.00
		Organic matter content low	0.82			Too clayey	0.35
SfC:							
Shouns	85	Fair		Poor		Poor	
		Too acid	0.01	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.50			Rock fragments	0.00
		Organic matter content low	0.82			Too clayey	0.35

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ShC:							
Shouns	80	Fair		Poor		Poor	
		Too acid	0.01	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.50			Rock fragments	0.00
		Organic matter content low	0.82			Too clayey	0.35
ShE:							
Shouns	75	Fair		Poor		Poor	
		Too acid	0.01	Slope	0.00	Slope	0.00
		Too clayey	0.50	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.82			Rock fragments	0.00
ShF:							
Shouns	75	Fair		Poor		Poor	
		Too acid	0.01	Slope	0.00	Slope	0.00
		Too clayey	0.50	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.82			Rock fragments	0.00
SmC:							
Simoda	75	Fair		Fair		Poor	
		Too acid	0.01	Wetness depth	0.53	Rock fragments	0.00
		Too clayey	0.50	Depth to bedrock	0.95	Hard to reclaim (rock fragments)	0.08
		Organic matter content low	0.88			Too clayey	0.36
SoC:							
Snowdog	75	Fair		Fair		Poor	
		Too acid	0.01	Wetness depth	0.53	Hard to reclaim (dense layer)	0.00
		Stone content	0.78	Stone content	0.75	Rock fragments	0.00
				Cobble content	0.99	Hard to reclaim (rock fragments)	0.12
SoE:							
Snowdog	75	Fair		Poor		Poor	
		Too acid	0.01	Slope	0.00	Slope	0.00
		Stone content	0.78	Wetness depth	0.53	Hard to reclaim (dense layer)	0.00
				Stone content	0.75	Rock fragments	0.00
SoF:							
Snowdog	75	Fair		Poor		Poor	
		Too acid	0.01	Slope	0.00	Slope	0.00
		Stone content	0.78	Wetness depth	0.53	Hard to reclaim (dense layer)	0.00
				Stone content	0.75	Rock fragments	0.00
SvC:							
Summers	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.16			Depth to bedrock	0.16
		Too acid	0.50			Too acid	0.88
Tp:							
Tioga	55	Fair		Good		Good	
		Too acid	0.50				
		Organic matter content low	0.50				

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Tp:							
Potomac	35	Fair		Good		Poor	
		Droughty	0.11			Hard to reclaim (rock fragments)	0.00
		Too sandy	0.22			Rock fragments	0.00
		Organic matter content low	0.78			Too sandy	0.22
TrC:							
Trussel	80	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Wetness depth	0.00
						Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Cobble content	0.71	Depth to bedrock	0.00
		Too acid	0.50			Slope	0.37
WeD:							
Weikert	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.50	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.71	Depth to bedrock	0.00
WeF:							
Weikert	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.71	Depth to bedrock	0.00
WrG:							
Weikert	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobble content	0.71	Depth to bedrock	0.00
Berks	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.50	Depth to bedrock	0.54
Rough	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content low	0.12	Cobble content	0.68	Rock fragments	0.00

Table 14b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ZoA:							
Zoar	80	Fair		Poor		Fair	
		Too acid	0.32	Low strength	0.00	Too clayey	0.37
		Too clayey	0.50	Wetness depth	0.53	Wetness depth	0.53
		Water erosion	0.90	Shrink-swell	0.87	Too acid	0.88

Table 15.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AlB:							
Allegheny	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.16	Depth to water	1.00
AlC:							
Allegheny	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.16	Depth to water	1.00
		Slope	0.01				
An:							
Atkins	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	0.29		
Philo	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Cutbanks cave	1.00
				Depth to saturated zone	0.95	Depth to saturated zone	0.02
Potomac	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Depth to water	1.00
BaE:							
Belmont	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.11	Depth to water	1.00
		Slope	0.28				
		Depth to bedrock	0.10				
BcC:							
Berks	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11	Large stones content	0.03		
BcE:							
Berks	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.28	Large stones content	0.03		
		Depth to bedrock	0.11				
BcF:							
Berks	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.03		
		Depth to bedrock	0.11				
BkG:							
Berks	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	1.00	Large stones content	0.03		
		Depth to bedrock	0.11				
Weikert	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.66				

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BkG:							
Calvin	20	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Slope	1.00	Thin layer	0.86		
		Depth to bedrock	0.11				
BlC:							
Berks	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11	Large stones content	0.03		
Dekalb	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
				Seepage	0.08		
BlE:							
Berks	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.28	Large stones content	0.03		
		Depth to bedrock	0.11				
Dekalb	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
		Slope	0.28	Seepage	0.08		
BlF:							
Berks	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.03		
		Depth to bedrock	0.11				
Dekalb	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.19		
		Depth to bedrock	0.86	Seepage	0.08		
BrE:							
Berks	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.28	Large stones content	0.03		
		Depth to bedrock	0.11				
Weikert	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	Depth to water	1.00
		Slope	0.28				
BrF:							
Berks	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.03		
		Depth to bedrock	0.11				
Weikert	35	Somewhat limited		Very limited		Very limited	
		Slope	0.97	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.66				

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BtC:							
Blackthorn----------	75	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
BtE:							
Blackthorn----------	75	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.28				
BxF:							
Briery--------------	75	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.88				
Rock outcrop--------	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.88				
CbC:							
Calvin--------------	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Depth to bedrock	0.11	Thin layer	0.86		
Dekalb--------------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
				Seepage	0.08		
Berks---------------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11	Large stones content	0.03		
CbE:							
Calvin--------------	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Slope	0.28	Thin layer	0.86		
		Depth to bedrock	0.11				
Dekalb--------------	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
		Slope	0.28	Seepage	0.08		
Berks---------------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.28	Large stones content	0.03		
		Depth to bedrock	0.11				
CbF:							
Calvin--------------	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Slope	0.97	Thin layer	0.86		
		Depth to bedrock	0.11				
Dekalb--------------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.19		
		Depth to bedrock	0.86	Seepage	0.08		

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CbF:							
Berks	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.03		
		Depth to bedrock	0.11				
CeF:							
Caneyville	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.99	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Hard to pack	0.77		
		Seepage	0.47				
Frederick	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.99	Hard to pack	0.83	Depth to water	1.00
		Seepage	0.70				
Rock outcrop	20	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.99				
CfB:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11				
CfC:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11				
		Slope	0.01				
CfD:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Slope	0.12				
		Depth to bedrock	0.11				
CfE:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Slope	0.50				
		Depth to bedrock	0.11				
CfF:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.86	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.11				
CgC:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11				
CgE:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Slope	0.28				
		Depth to bedrock	0.11				

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CgF:							
Cateache	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.86	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.11				
Ch:							
Chavies	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
CpB:							
Cookport	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Depth to bedrock	0.01	Piping	0.21		
				Thin layer	0.01		
CuB:							
Culleoka	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Depth to bedrock	0.11	Thin layer	0.86		
CuC:							
Culleoka	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Depth to bedrock	0.11	Thin layer	0.86		
		Slope	0.01				
CuD:							
Culleoka	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Slope	0.12	Thin layer	0.86		
		Depth to bedrock	0.11				
CyE:							
Culleoka	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Slope	0.50	Thin layer	0.86		
		Depth to bedrock	0.11				
CyF:							
Culleoka	75	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	0.99	Depth to water	1.00
		Slope	0.97	Thin layer	0.86		
		Depth to bedrock	0.11				
DeC:							
Dekalb	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
				Seepage	0.08		
DeE:							
Dekalb	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
		Slope	0.28	Seepage	0.08		

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DeF:							
Dekalb	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.19		
		Depth to bedrock	0.86	Seepage	0.08		
DhC:							
Dekalb	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
				Seepage	0.08		
Hazleton	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.18	Depth to water	1.00
		Depth to bedrock	0.06	Large stones content	0.17		
				Thin layer	0.06		
DhE:							
Dekalb	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.19		
		Slope	0.28	Seepage	0.08		
Hazleton	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.18	Depth to water	1.00
		Slope	0.28	Large stones content	0.17		
		Depth to bedrock	0.06	Thin layer	0.06		
DhF:							
Dekalb	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	0.97	Large stones content	0.19		
		Depth to bedrock	0.86	Seepage	0.08		
Hazleton	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.18	Depth to water	1.00
		Slope	0.97	Large stones content	0.17		
		Depth to bedrock	0.06	Thin layer	0.06		
DkF:							
Dekalb	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	1.00	Large stones content	0.19		
		Depth to bedrock	0.86	Seepage	0.08		
Rock outcrop	40	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
Du:							
Dunning	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Hard to pack	0.10		

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ElF:							
Elliber----------	80	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.97				
ErB:							
Ernest----------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.91		
EsC:							
Ernest----------	75	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.91		
FaE:							
Faywood----------	75	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
		Slope	0.28	Hard to pack	0.07		
		Seepage	0.02				
FaF:							
Faywood----------	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Hard to pack	0.07		
		Seepage	0.02				
FkB:							
Frankstown----------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.24	Depth to water	1.00
		Depth to bedrock	0.24				
FkC:							
Frankstown----------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.24	Depth to water	1.00
		Depth to bedrock	0.24				
		Slope	0.01				
FkD:							
Frankstown----------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.24	Depth to water	1.00
		Depth to bedrock	0.24				
		Slope	0.12				
FoC:							
Frankstown----------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.24	Depth to water	1.00
		Depth to bedrock	0.24				
FoE:							
Frankstown----------	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.24	Depth to water	1.00
		Slope	0.28				
		Depth to bedrock	0.24				
FrB:							
Frederick----------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.83	Depth to water	1.00

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FrC:							
Frederick	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.83	Depth to water	1.00
		Slope	0.01				
FrD:							
Frederick	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.83	Depth to water	1.00
		Slope	0.12				
FyC:							
Frederick	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.83	Depth to water	1.00
Caneyville	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
		Seepage	0.47	Hard to pack	0.77		
FyE:							
Frederick	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.83	Depth to water	1.00
		Slope	0.28				
Caneyville	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
		Seepage	0.47	Hard to pack	0.77		
		Slope	0.28				
GaC:							
Gauley	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.37		
GaE:							
Gauley	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.86	Large stones content	0.37		
		Slope	0.28				
GnC:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11				
		Slope	0.01				
GnD:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Slope	0.12				
		Depth to bedrock	0.11				
GpC:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11				
GpE:							
Gilpin	75	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Slope	0.28				
		Depth to bedrock	0.11				

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ho:							
Holly	90	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		
KxF:							
Kaymine	70	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.10	Depth to water	1.00
		Slope	0.88				
Rock outcrop	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.88				
LcC:							
Leatherbark	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.54	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.02	Thin layer	0.54	Slow refill	0.98
				Piping	0.01	Cutbanks cave	0.10
LgB:							
Lily	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.86	Thin layer	0.86		
LgC:							
Lily	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.86	Thin layer	0.86		
		Slope	0.01				
LhE:							
Lily	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.86	Thin layer	0.86		
		Slope	0.28				
Lo:							
Lobdell	75	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
MaB:							
Macove	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.02	Depth to water	1.00
MaC:							
Macove	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.02	Depth to water	1.00
		Slope	0.01	content			
MaD:							
Macove	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones	0.02	Depth to water	1.00
		Slope	0.12	content			

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
McC:							
Macove	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.02	Depth to water	1.00
McE:							
Macove	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.02	Depth to water	1.00
		Slope	0.28				
MeF:							
Macove	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.02	Depth to water	1.00
		Slope	0.97				
Gilpin	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.86	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.11				
MkC:							
Mandy	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Depth to bedrock	0.11				
MkE:							
Mandy	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.86	Depth to water	1.00
		Slope	0.28				
		Depth to bedrock	0.11				
MkF:							
Mandy	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.86	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.11				
MkG:							
Mandy	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.86	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.11				
Ml:							
Melvin	50	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.83		
				Seepage	0.01		
Lindside	35	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.95	Cutbanks cave	0.10
						Depth to saturated zone	0.02
				Piping	0.71		
				Seepage	0.04		
MzC:							
Mertz	75	Somewhat limited		Not limited		Very limited	
		Seepage	0.03			Depth to water	1.00
		Slope	0.01				

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MzE:							
Mertz	75	Somewhat limited		Not limited		Very limited	
		Slope	0.28			Depth to water	1.00
		Seepage	0.03				
No:							
Nolin	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Piping	0.80	Depth to saturated zone	0.96
						Slow refill	0.30
						Cutbanks cave	0.10
Ph:							
Philo	75	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Cutbanks cave	1.00
				Depth to saturated zone	0.95	Depth to saturated zone	0.02
Po:							
Pope	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
Pt:							
Potomac	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Depth to water	1.00
PuA:							
Purdy	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Piping	0.01		
Qu:							
Quarry	80	Not rated		Not rated		Not rated	
Se:							
Sensabaugh	80	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
SfB:							
Shouns	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
SfC:							
Shouns	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.01				
ShC:							
Shouns	80	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
ShE:							
Shouns	75	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.28				
ShF:							
Shouns	75	Somewhat limited		Not limited		Very limited	
		Slope	0.97			Depth to water	1.00
		Seepage	0.70				

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SmC:							
Simoda	75	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.99	Slow refill	0.30
		Depth to bedrock	0.01	Thin layer	0.01	Cutbanks cave	0.10
						Depth to hard bedrock	0.05
SoC:							
Snowdog	75	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	0.10
				Seepage	0.02	Depth to saturated zone	0.01
SoE:							
Snowdog	75	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	0.10
		Slope	0.28	Seepage	0.02	Depth to saturated zone	0.01
SoF:							
Snowdog	75	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	0.10
		Slope	0.97	Seepage	0.02	Depth to saturated zone	0.01
					0.02		
SvC:							
Summers	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.96	Depth to water	1.00
		Depth to bedrock	0.96	Seepage	0.01		
Tp:							
Tioga	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
Potomac	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Depth to water	1.00
TrC:							
Trussel	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
Uf:							
Udifluvents	45	Not rated		Not rated		Not rated	
Fluvaquents	35	Not rated		Not rated		Not rated	
Ux:							
Udorthents	60	Not rated		Not rated		Not rated	
Rock outcrop	35	Not rated		Not rated		Not rated	
WeC:							
Weikert	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	Depth to water	1.00
		Slope	0.01				
WeD:							
Weikert	75	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	Depth to water	1.00
		Slope	0.12				

Table 15.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WeF:							
Weikert	75	Somewhat limited		Very limited		Very limited	
		Slope	0.88	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.66				
WrG:							
Weikert	40	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.66				
Berks	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.86	Depth to water	1.00
		Slope	1.00	Large stones content	0.03		
		Depth to bedrock	0.11				
Rough	15	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Large stones content	0.01		
ZoA:							
Zoar	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.02	Depth to saturated zone	0.99	Slow refill	0.98
						Cutbanks cave	0.10
						Depth to saturated zone	0.01

Table 16.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
AlB:												
Allegheny-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Highly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	3-10	Loam	ML, CL	A-4	0	0	91-100	73-100	56-96	39-74	20-45	3-18
	10-49	Silt loam, loam, clay loam, gravelly loam	SM, SC, ML, CL	A-4, A-6	0	0	91-100	74-100	45-100	30-81	0-49	NP-28
	49-65	Gravelly loam, clay loam, gravelly silty clay loam	GC, CL, SM, ML	A-1, A-2, A-4, A-6	0	0-3	73-100	39-100	27-100	18-87	0-49	NP-28
AlC:												
Allegheny-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Highly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	3-10	Loam	CL, ML	A-4	0	0	91-100	73-100	56-96	39-74	20-45	3-18
	10-49	Silt loam, loam, clay loam, gravelly loam	SC, SM, ML, CL	A-4, A-6	0	0	91-100	74-100	45-100	30-81	0-49	NP-28
	49-65	Gravelly loam, clay loam, gravelly silty clay loam	ML, GC, SM, CL	A-1, A-2, A-4, A-6	0	0-3	73-100	39-100	27-100	18-87	0-49	NP-28

Table 16.--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	
An:												
Atkins----------	0-4	Silt loam	ML, CL	A-7-5, A-7-6	0	0	87-100	70-100	63-99	53-85	38-54	11-18
	4-29	Silty clay loam, silt loam, sandy loam	ML, CL	A-7-6, A-6	0	0-5	89-100	75-100	66-100	58-94	31-50	11-24
	29-65	Gravelly silt loam, silty clay loam, very gravelly silty clay loam, gravelly silty clay loam	CL, SM, ML, GM	A-2, A-4, A-6	0	0-10	67-100	34-100	29-100	25-98	22-46	6-25
Philo----------	0-8	Silt loam	CL-ML, ML	A-4	0-5	0-5	95-100	80-100	75-90	60-80	20-35	1-10
	8-38	Silt loam, loam	CL-ML, GM, ML, SM	A-4	0-5	0-5	80-100	75-100	70-90	45-80	20-35	1-10
	38-65	Stratified fine sand to sandy loam to silt loam, silt loam	SM, SC, GM, GC	A-2, A-4	0-5	0-10	25-100	20-100	15-95	10-90	15-30	1-10
Potomac---------	0-6	Fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0-10	52-100	5-100	4-100	2-55	15-20	NP-5
	6-65	Extremely gravelly sandy loam, extremely gravelly loamy sand, extremely gravelly sand, very gravelly loamy sand	GM, GW-GM	A-1	0	6-41	44-59	4-38	3-35	1-17	15-15	NP-3

Table 16.--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	
BaE:												
Belmont---------	0-2	Slightly decomposed plant material	PT	A-8	0	1-25	---	---	---	---	---	---
	2-5	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0-4	82-100	59-100	46-100	38-92	0-58	NP-18
	5-8	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0-4	82-100	59-100	46-100	38-92	0-42	NP-18
	8-14	Channery silt loam, silty clay, silty clay loam	CL-ML, ML, CL	A-4, A-6, A-7	0	0-14	81-100	58-100	46-100	40-100	0-51	NP-29
	14-25	Channery silty clay loam, silt loam, silty clay	CL, CL-ML, ML	A-4, A-6, A-7	0	0-20	81-100	56-100	36-100	33-98	0-50	NP-29
	25-37	Channery silty clay, channery silty clay loam	CL	A-6, A-7	0	0-27	80-100	54-100	43-100	41-100	37-67	19-44
	37-53	Very channery silty clay, channery silty clay loam, channery sandy clay loam	GC, CL	A-6, A-7	0	0-31	47-86	11-86	8-86	7-86	31-67	13-44
	>53	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BcC:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	ML, GM	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	ML, SC, GC, GM	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, SC, GM	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	SM, SC, GM, GC	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, SM, GM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BcE:												
Berks	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	GC, GM, ML, SC	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SM, GC, SC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, SC, GM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	SM, GM, GC-GM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BcF:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	ML, GM	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	GC, SC, GM, ML	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, GM, SC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SC, GM, SM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	SM, GC-GM, GM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BkG:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	SC, GC, GM, ML	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, SC, GM	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, SC, GM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, GM, SM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---
Weikert----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-7	Very channery silt loam, loam, channery silt loam	SM, ML, GM	A-1, A-2, A-4	0-3	8-31	46-85	6-75	5-75	4-72	30-40	4-10
	7-16	Very channery silt loam, loam, extremely channery silt loam	GP-GM, GM	A-1, A-2	0-3	21-31	47-82	7-64	6-64	5-62	28-36	3-9
	>16	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BkG:												
Calvin----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-5	Channery silt loam	CL, ML	A-4	0-4	3-11	73-100	47-100	41-100	33-97	25-47	6-17
	5-28	Very channery silt loam, channery loam, channery clay loam, channery silt loam	GM, ML, SM	A-2, A-4, A-6	0	0-19	74-97	39-97	32-97	27-94	0-38	NP-19
	28-40	Channery silt loam, very channery silt loam, very channery loam, extremely channery silt loam	SM, GC-GM, GM, SC-SM	A-1, A-2, A-6	0	0-31	46-82	8-82	7-82	6-82	24-40	6-21
	40-44	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BlC:												
Berks	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	ML, GM	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	ML, SC, GM, GC	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	SC, GM, GC, SM	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SC, GM, SM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, GM, SM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BlC:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	CL-ML, ML, SM, GM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	SM, ML, GC-GM, GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	SM, GC-GM, GM, ML	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	GM, GC, SC, SM	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BlE:												
Berks	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	GC, SC, ML, GM	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	SC, SM, GC, GM	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SC, SM, GC	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, GM, SM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BlE:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	SM, GM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	SM, ML, CL-ML, GM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, ML, SM, GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GM, GC-GM, SM, ML	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SM, SC, GC, GM	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BlF:												
Berks	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	GM, GC, ML, SC	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, GC, SM, SC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SC, SM, GC	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	SM, GM, GC-GM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BlF:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	SM, ML, CL-ML, GM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	ML, SM, GM, GC-GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, ML, SM, GM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	GC, GM, SM, SC	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BrE:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	ML, GM	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	ML, SC, GM, GC	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SC, SM, GC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, SC, GM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, GM, SM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---
Weikert----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-7	Very channery silt loam, loam, channery silt loam	GM, ML, SM	A-1, A-2, A-4	0-3	8-31	46-85	6-75	5-75	4-72	30-40	4-10
	7-16	Very channery silt loam, loam, extremely channery silt loam	GM, GP-GM	A-1, A-2	0-3	21-31	47-82	7-64	6-64	5-62	28-36	3-9
	>16	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BrF:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	GC, GM, SC, ML	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SC, SM, GC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	SM, GC, SC, GM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, GM, SM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---
Weikert---------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-7	Very channery silt loam, loam, channery silt loam	SM, ML, GM	A-1, A-2, A-4	0-3	8-31	46-85	6-75	5-75	4-72	30-40	4-10
	7-16	Very channery silt loam, loam, extremely channery silt loam	GP-GM, GM	A-1, A-2	0-3	21-31	47-82	7-64	6-64	5-62	28-36	3-9
	>16	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
BtC:												
Blackthorn------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-6	Very channery loam	ML, SM, SC-SM	A-1, A-2, A-4	5-31	5-42	38-94	8-94	6-90	4-69	22-47	3-18
	6-44	Very channery sandy clay loam, clay loam, channery loam, channery sandy loam, very channery loam, very channery clay loam	GM, SC, SC-SM, SM	A-1, A-2, A-4	0	5-21	57-92	11-92	7-92	3-55	19-50	3-28
	44-65	Silty clay loam, silty clay	CL, CH	A-6, A-7	0	0-25	58-100	41-100	33-100	31-100	37-67	19-44
BtE:												
Blackthorn------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-6	Very channery loam	ML, SC-SM, SM	A-1, A-2, A-4	5-31	5-42	38-94	8-94	6-90	4-69	22-47	3-18
	6-44	Very channery sandy clay loam, clay loam, channery loam, channery sandy loam, very channery loam, very channery clay loam	GM, SM, SC-SM, SC	A-1, A-2, A-4	0	5-21	57-92	11-92	7-92	3-55	19-50	3-28
	44-65	Silty clay loam, silty clay	CL, CH	A-6, A-7	0	0-25	58-100	41-100	33-100	31-100	37-67	19-44

Table 16.--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	
BxF:												
Briery----------	0-2	Very channery silt loam	GC	A-2	0	3-24	52-70	35-70	32-70	27-61	27-43	12-18
	2-65	Very channery silt loam, extremely channery silty clay loam	GC	A-2	0	4-19	46-71	23-71	21-71	19-67	27-42	12-22
Rock outcrop----	0-10	Unweathered bedrock			---	---	---	---	---	---	---	---
CbC:												
Calvin----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-5	Channery silt loam	CL, ML	A-4	0-4	3-11	73-100	47-100	41-100	33-97	25-47	6-17
	5-28	Very channery silt loam, channery loam, channery clay loam, channery silt loam	ML, SM, GM	A-2, A-4, A-6	0	0-19	74-97	39-97	32-97	27-94	0-38	NP-19
	28-40	Channery silt loam, very channery silt loam, very channery loam, extremely channery silt loam	SM, GC-GM, GM, SC-SM	A-1, A-2, A-6	0	0-31	46-82	8-82	7-82	6-82	24-40	6-21
	40-44	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbC:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	SM, GM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	SM, GM, CL-ML, ML	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	ML, GM, GC-GM, SM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, GM, ML, SM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SM, SC, GM, GC	A-2, A-4, A-1	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbC:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	ML, GC, SC, GM	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SC, SM, GC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, GC, SC, SM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, GM, SM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbE:												
Calvin----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-5	Channery silt loam	CL, ML	A-4	0-4	3-11	73-100	47-100	41-100	33-97	25-47	6-17
	5-28	Very channery silt loam, channery loam, channery clay loam, channery silt loam	SM, ML, GM	A-2, A-4, A-6	0	0-19	74-97	39-97	32-97	27-94	0-38	NP-19
	28-40	Channery silt loam, very channery silt loam, very channery loam, extremely channery silt loam	GM, GC-GM, SM, SC-SM	A-1, A-2, A-6	0	0-31	46-82	8-82	7-82	6-82	24-40	6-21
	40-44	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbE:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	SM, GM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	CL-ML, GM, ML, SM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	GM, SM, ML, GC-GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, GM, SM, ML	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SM, GM, GC, SC	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbE:												
Berks	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	ML, GM	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	SC, ML, GM, GC	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	SC, SM, GM, GC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, SC, GM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	SM, GM, GC-GM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbF:												
Calvin----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-5	Channery silt loam	ML, CL	A-4	0-4	3-11	73-100	47-100	41-100	33-97	25-47	6-17
	5-28	Very channery silt loam, channery loam, channery clay loam, channery silt loam	SM, ML, GM	A-2, A-4, A-6	0	0-19	74-97	39-97	32-97	27-94	0-38	NP-19
	28-40	Channery silt loam, very channery silt loam, very channery loam, extremely channery silt loam	SM, SC-SM, GM, GC-GM	A-1, A-2, A-6	0	0-31	46-82	8-82	7-82	6-82	24-40	6-21
	40-44	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbF:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	SM, GM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	ML, SM, GM, CL-ML	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	SM, ML, GM, GC-GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, ML, GM, SM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SM, SC, GM, GC	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CbF:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery loam, channery silt loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery loam, channery silt loam	SC, ML, GM, GC	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SC, SM, GC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	GC, SM, SC, GM	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	GC-GM, GM, SM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---
CeF:												
Caneyville------	0-3	Silt loam	CL	A-6	0	0-5	89-100	74-100	63-100	55-91	30-40	11-20
	3-10	Silty clay, clay, silty clay loam, silt loam	CH, CL	A-7	0	0-4	90-100	77-100	69-100	64-100	42-70	20-45
	10-24	Clay, silty clay, channery silty clay	CH	A-7	0-9	0-9	74-100	35-100	29-100	25-100	50-75	30-45
	>24	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CeF:												
Frederick-------	0-8	Gravelly silt loam, silt loam	ML, GM, GC, CL	A-4, A-6	0	0-8	66-100	41-100	34-100	29-96	15-35	NP-15
	8-29	Gravelly silty clay loam, silty clay, clay, silty clay loam	SM, SC, MH, CH	A-7	0	0-4	84-100	43-100	40-100	37-99	50-70	20-40
	29-80	Clay, silty clay, channery clay, channery silty clay	CH	A-7	0	0-15	82-100	67-100	50-100	43-100	60-85	30-50
Rock outcrop----	0-10	Bedrock			---	---	---	---	---	---	---	---
CfB:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	GC-GM, CL-ML, CL, GC	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GP-GC, GC-GM, GC	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CfC:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	CL-ML, CL, GC, GC-GM	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	CL-ML, GC-GM, CL, GC	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GC-GM, GC, GP-GC	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---
CfD:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	GC, CL, CL-ML, GC-GM	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	GC-GM, GC, CL-ML, CL	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GC-GM, GC, GP-GC	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CfE:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	GC, GC-GM, CL-ML, CL	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GC, GP-GC, GC-GM	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---
CfF:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	GC, GC-GM, CL-ML, CL	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	GC-GM, CL-ML, CL, GC	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GC, GP-GC, GC-GM	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CgC:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	CL, CL-ML, GC, GC-GM	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GC, GC-GM, GP-GC	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---
CgE:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	GC-GM, GC, CL-ML, CL	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	CL-ML, CL, GC, GC-GM	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GC, GC-GM, GP-GC	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CgF:												
Cateache--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery silt loam, loam, silt loam	CL-ML, GC, GC-GM, CL	A-4, A-6	0	0-8	82-90	65-90	55-90	45-87	20-40	4-15
	5-29	Channery silt loam, channery silty clay loam, silt loam	CL, CL-ML, GC, GC-GM	A-2, A-4, A-6	0	0-15	40-85	35-80	30-80	25-70	20-40	4-15
	29-36	Very channery silt loam, extremely channery silty clay loam	GC, GC-GM, GP-GC	A-1, A-2, A-4, A-6	0	0-20	20-60	10-50	10-45	10-40	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---
Ch:												
Chavies---------	0-10	Fine sandy loam, loam	SM, SC-SM, ML, CL-ML	A-4	0	0	85-100	75-100	40-90	40-75	15-25	NP-5
	10-54	Fine sandy loam, silt loam, loam	SM, ML	A-4	0	0	85-100	75-100	65-100	45-85	15-35	NP-8
	54-65	Silt loam, gravelly fine sandy loam, loam	CL-ML, ML, SM, SC-SM	A-1-b, A-2, A-4	0	0-5	70-100	60-95	40-85	20-75	15-25	NP-5
CpB:												
Cookport--------	0-1	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-9	Loam	SC, ML, CL, SM	A-4, A-6	0	0-4	86-100	67-100	52-95	37-73	22-68	6-18
	9-22	Sandy clay loam, clay loam, channery loam, loam	SC, CL	A-6	0	0-11	87-100	54-100	44-99	32-77	28-46	12-25
	22-42	Sandy clay loam, clay loam, channery loam, loam	SC, CL	A-6	0	0-10	88-100	57-100	47-99	35-77	28-45	12-25
	42-49	Loam	CL	A-6	0	5-36	100	100	82-99	60-77	27-45	12-25
	>49	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CuB:												
Culleoka--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Channery loam, loam	ML, CL-ML, CL	A-4	0	0-5	90-100	85-100	70-100	55-95	15-35	NP-10
	3-29	Channery silt loam, channery loam, silty clay loam, channery silty clay loam	ML, CL-ML, CL	A-4, A-6	0	5-25	80-95	75-95	65-95	55-90	20-40	2-20
	29-35	Extremely channery silt loam, extremely channery silty clay loam	ML, GM, GC, CL	A-2, A-4, A-6	0	10-60	50-95	40-90	35-90	30-85	20-40	2-20
	35-40	Unweathered bedrock			---	---	---	---	---	---	---	---
CuC:												
Culleoka--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Channery loam, loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-100	55-95	15-35	NP-10
	3-29	Channery silt loam, channery loam, silty clay loam, channery silty clay loam	CL-ML, ML, CL	A-4, A-6	0	5-25	80-95	75-95	65-95	55-90	20-40	2-20
	29-35	Extremely channery silt loam, extremely channery silty clay loam	GM, GC, CL, ML	A-2, A-4, A-6	0	10-60	50-95	40-90	35-90	30-85	20-40	2-20
	35-40	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CuD:												
Culleoka--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Channery loam, loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-100	55-95	15-35	NP-10
	3-29	Channery silt loam, channery loam, silty clay loam, channery silty clay loam	ML, CL-ML, CL	A-4, A-6	0	5-25	80-95	75-95	65-95	55-90	20-40	2-20
	29-35	Extremely channery silt loam, extremely channery silty clay loam	CL, GC, GM, ML	A-2, A-4, A-6	0	10-60	50-95	40-90	35-90	30-85	20-40	2-20
	35-40	Unweathered bedrock			---	---	---	---	---	---	---	---
CyE:												
Culleoka--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Channery loam, loam	CL, CL-ML, ML	A-4	0	0-5	90-100	85-100	70-100	55-95	15-35	NP-10
	3-29	Channery silt loam, channery loam, silty clay loam, channery silty clay loam	CL-ML, ML, CL	A-4, A-6	0	5-25	80-95	75-95	65-95	55-90	20-40	2-20
	29-35	Extremely channery silt loam, extremely channery silty clay loam	CL, GC, GM, ML	A-2, A-4, A-6	0	10-60	50-95	40-90	35-90	30-85	20-40	2-20
	35-40	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
CyF:												
Culleoka--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Channery loam, loam	ML, CL-ML, CL	A-4	0	0-5	90-100	85-100	70-100	55-95	15-35	NP-10
	3-29	Channery silt loam, channery loam, silty clay loam, channery silty clay loam	CL, CL-ML, ML	A-4, A-6	0	5-25	80-95	75-95	65-95	55-90	20-40	2-20
	29-35	Extremely channery silt loam, extremely channery silty clay loam	CL, GC, GM, ML	A-2, A-4, A-6	0	10-60	50-95	40-90	35-90	30-85	20-40	2-20
	35-40	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DeC:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	SM, GM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	CL-ML, GM, ML, SM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	ML, SM, GM, GC-GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	ML, SM, GM, GC-GM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	GC, GM, SC, SM	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DeE:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	SM, GM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	CL-ML, SM, ML, GM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	SM, GC-GM, ML, GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	SM, GC-GM, GM, ML	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SM, SC, GM, GC	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DeF:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	SM, ML, GM, CL-ML	A-2, A-4, A-1	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, GM, ML, SM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, GM, ML, SM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SM, SC, GM, GC	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DhC:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	SM, GM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	SM, ML, GM, CL-ML	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	ML, GM, SM, GC-GM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GM, GC-GM, ML, SM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	GC, GM, SC, SM	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DhC:												
Hazleton--------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-3	Sandy loam, channery loam	GM, ML, SM	A-2, A-4	0-5	4-52	39-91	9-91	7-88	5-67	22-64	3-18
	3-32	Very channery sandy loam, channery loam, fine sandy loam, channery fine sandy loam	GM, SM, SC	A-1, A-2, A-4	0-20	8-62	39-91	9-91	6-80	3-47	15-30	NP-8
	32-52	Extremely channery sandy loam, very channery loamy sand	SM, SC, GM, GC	A-1, A-2, A-4	0-20	8-73	30-91	7-91	5-80	2-47	15-30	NP-8
	>52	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DhE:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	GM, SM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	CL-ML, GM, ML, SM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, GM, ML, SM	A-2, A-4, A-1	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, SM, ML, GM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SC, GC, SM, GM	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DhE:												
Hazleton--------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-3	Sandy loam, channery loam	SM, GM	A-2, A-4	0-5	4-52	39-91	9-91	7-88	5-67	22-64	3-18
	3-32	Very channery sandy loam, channery loam, fine sandy loam, channery fine sandy loam	SM, SC, GM	A-1, A-2, A-4	0-20	8-62	39-91	9-91	6-80	3-47	15-30	NP-8
	32-52	Extremely channery sandy loam, very channery loamy sand	GC, GM, SC, SM	A-1, A-2, A-4	0-20	8-73	30-91	7-91	5-80	2-47	15-30	NP-8
	>52	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DhF:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	SM, GM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	SM, ML, GM, CL-ML	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, GM, ML, SM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	SM, ML, GM, GC-GM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	GM, GC, SC, SM	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DhF:												
Hazleton--------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-3	Sandy loam, channery loam	GM, SM	A-2, A-4	0-5	4-52	39-91	9-91	7-88	5-67	22-64	3-18
	3-32	Very channery sandy loam, channery loam, fine sandy loam, channery fine sandy loam	SM, SC, GM	A-1, A-2, A-4	0-20	8-62	39-91	9-91	6-80	3-47	15-30	NP-8
	32-52	Extremely channery sandy loam, very channery loamy sand	GM, SC, GC, SM	A-1, A-2, A-4	0-20	8-73	30-91	7-91	5-80	2-47	15-30	NP-8
	>52	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
DkF:												
Dekalb----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Channery sandy loam	SM, GM	A-2, A-1, A-4	1-6	9-30	62-96	47-95	27-73	15-49	10-32	NP-10
	2-4	Channery sandy loam	GM, SM	A-4, A-1, A-2	1-10	9-31	46-96	11-95	6-73	3-49	10-32	NP-10
	4-8	Very channery loam	SM, CL-ML, ML, GM	A-2, A-1, A-4	1-20	9-41	46-96	11-95	8-94	6-70	10-32	NP-10
	8-15	Channery sandy loam, very channery loam, very channery sandy loam	GC-GM, GM, ML, SM	A-1, A-2, A-4	0	7-41	39-92	9-88	---	---	15-32	NP-9
	15-23	Channery sandy loam, very channery loam, very channery sandy loam	ML, GM, GC-GM, SM	A-1, A-2, A-4	0	7-52	39-92	9-88	---	---	15-32	NP-9
	23-34	Extremely channery sandy loam, very channery loamy sand	SM, SC, GM, GC	A-1, A-2, A-4	2-10	37-62	30-59	7-59	---	---	15-32	NP-9
	>34	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-10	Bedrock			---	---	---	---	---	---	---	---
Du:												
Dunning---------	0-20	Silt loam, silty clay loam	CL-ML, ML, CL	A-4, A-6	0	0	100	95-100	90-100	85-100	10-50	4-14
	20-65	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0-5	90-100	70-100	60-100	60-100	45-75	20-40

Table 16.--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	
ElF:												
Elliber---------	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-12	Extremely channery silt loam	GM	A-1, A-2, A-4	0	4-9	50-67	21-67	18-65	15-54	22-37	6-13
	12-67	Very channery silt loam, extremely channery loam, very channery clay loam	GM, SM	A-2, A-4	0	16-26	57-78	31-78	24-78	22-77	23-50	7-28
ErB:												
Ernest----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	3-10	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0-9	86-100	66-100	61-97	52-84	20-55	4-15
	10-28	Silty clay loam, silt loam, channery silt loam, channery silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0-11	78-100	51-100	47-100	42-98	25-60	6-22
	28-44	Channery silt loam, channery loam, silty clay loam	GM, SC, ML, CL	A-4, A-6, A-7	0	0-13	75-97	42-97	38-97	33-88	20-45	4-18
	44-62	Channery silt loam, silt loam, silty clay loam	CL, GM, SC, ML	A-4, A-6, A-7	0	0-13	75-96	35-96	28-96	24-96	25-60	6-22

Table 16.--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	
EsC:												
Ernest----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	3-10	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0-9	86-100	66-100	61-97	52-84	20-55	4-15
	10-28	Silty clay loam, silt loam, channery silt loam, channery silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0-11	78-100	51-100	47-100	42-98	25-60	6-22
	28-44	Channery silt loam, channery loam, silty clay loam	ML, GM, SC, CL	A-4, A-6, A-7	0	0-13	75-97	42-97	38-97	33-88	20-45	4-18
	44-62	Channery silt loam, silt loam, silty clay loam	GM, CL, SC, ML	A-4, A-6, A-7	0	0-13	75-96	35-96	28-96	24-96	25-60	6-22
FaE:												
Faywood---------	0-8	Silt loam	CL-ML, ML	A-4	0	0-15	100	72-100	57-100	49-96	25-35	4-10
	8-28	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0-21	82-100	63-100	58-100	54-100	42-70	20-45
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
FaF:												
Faywood---------	0-8	Silt loam	CL-ML, ML	A-4	0	0-15	100	72-100	57-100	49-96	25-35	4-10
	8-28	Silty clay, clay, silty clay loam	CL, CH	A-7	0	0-21	82-100	63-100	58-100	54-100	42-70	20-45
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
FkB:												
Frankstown------	0-4	Silt loam	CL-ML, ML	A-4, A-6	0	0	86-100	68-100	61-99	53-87	25-40	4-12
	4-35	Channery silty clay loam, silt loam, very channery silt loam	GC, CH, CL, ML	A-6, A-7	0	0	70-100	35-100	33-100	30-94	25-55	11-23
	35-45	Channery silty clay loam, channery silt loam, channery clay, very channery silt loam	MH, GC, CL, CH	A-6, A-7	0	0-5	62-100	20-100	18-100	15-100	30-71	11-35
	45-46	Unweathered bedrock			---	---	---	---	---	---	---	---
FkC:												
Frankstown------	0-4	Silt loam	ML, CL-ML	A-4, A-6	0	0	86-100	68-100	61-99	53-87	25-40	4-12
	4-35	Channery silty clay loam, silt loam, very channery silt loam	CH, CL, GC, ML	A-6, A-7	0	0	70-100	35-100	33-100	30-94	25-55	11-23
	35-45	Channery silty clay loam, channery silt loam, channery clay, very channery silt loam	CL, CH, GC, MH	A-6, A-7	0	0-5	62-100	20-100	18-100	15-100	30-71	11-35
	45-46	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
FkD:												
Frankstown------	0-4	Silt loam	ML, CL-ML	A-4, A-6	0	0	86-100	68-100	61-99	53-87	25-40	4-12
	4-35	Channery silty clay loam, silt loam, very channery silt loam	CL, CH, GC, ML	A-6, A-7	0	0	70-100	35-100	33-100	30-94	25-55	11-23
	35-45	Channery silty clay loam, channery silt loam, channery clay, very channery silt loam	CH, CL, MH, GC	A-6, A-7	0	0-5	62-100	20-100	18-100	15-100	30-71	11-35
	45-46	Unweathered bedrock			---	---	---	---	---	---	---	---
FoC:												
Frankstown------	0-4	Silt loam	CL-ML, ML	A-4, A-6	0	0	86-100	68-100	61-99	53-87	25-40	4-12
	4-35	Channery silty clay loam, silt loam, very channery silt loam	ML, CH, CL, GC	A-6, A-7	0	0	70-100	35-100	33-100	30-94	25-55	11-23
	35-45	Channery silty clay loam, channery silt loam, channery clay, very channery silt loam	CH, CL, MH, GC	A-6, A-7	0	0-5	62-100	20-100	18-100	15-100	30-71	11-35
	45-46	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
FoE:												
Frankstown------	0-4	Silt loam	CL-ML, ML	A-4, A-6	0	0	86-100	68-100	61-99	53-87	25-40	4-12
	4-35	Channery silty clay loam, silt loam, very channery silt loam	GC, CL, CH, ML	A-6, A-7	0	0	70-100	35-100	33-100	30-94	25-55	11-23
	35-45	Channery silty clay loam, channery silt loam, channery clay, very channery silt loam	MH, GC, CL, CH	A-6, A-7	0	0-5	62-100	20-100	18-100	15-100	30-71	11-35
	45-46	Unweathered bedrock			---	---	---	---	---	---	---	---
FrB:												
Frederick-------	0-8	Gravelly silt loam, silt loam	ML, GM, GC, CL	A-4, A-6	0	0-8	66-100	41-100	34-100	29-96	15-35	NP-15
	8-29	Gravelly silty clay loam, silty clay, clay, silty clay loam	MH, CH, SC, SM	A-7	0	0-4	84-100	43-100	40-100	37-99	50-70	20-40
	29-80	Clay, silty clay, channery clay, channery silty clay	CH	A-7	0	0-15	82-100	67-100	50-100	43-100	60-85	30-50
FrC:												
Frederick-------	0-8	Gravelly silt loam, silt loam	ML, CL, GC, GM	A-4, A-6	0	0-8	66-100	41-100	34-100	29-96	15-35	NP-15
	8-29	Gravelly silty clay loam, silty clay, clay, silty clay loam	SC, MH, CH, SM	A-7	0	0-4	84-100	43-100	40-100	37-99	50-70	20-40
	29-80	Clay, silty clay, channery clay, channery silty clay	CH	A-7	0	0-15	82-100	67-100	50-100	43-100	60-85	30-50

Table 16.--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	
FrD:												
Frederick-------	0-8	Gravelly silt loam, silt loam	GC, ML, GM, CL	A-4, A-6	0	0-8	66-100	41-100	34-100	29-96	15-35	NP-15
	8-29	Gravelly silty clay loam, silty clay, clay, silty clay loam	CH, MH, SC, SM	A-7	0	0-4	84-100	43-100	40-100	37-99	50-70	20-40
	29-80	Clay, silty clay, channery clay, channery silty clay	CH	A-7	0	0-15	82-100	67-100	50-100	43-100	60-85	30-50
FyC:												
Frederick-------	0-8	Gravelly silt loam, silt loam	ML, GM, GC, CL	A-4, A-6	0	0-8	66-100	41-100	34-100	29-96	15-35	NP-15
	8-29	Gravelly silty clay loam, silty clay, clay, silty clay loam	SM, SC, MH, CH	A-7	0	0-4	84-100	43-100	40-100	37-99	50-70	20-40
	29-80	Clay, silty clay, channery clay, channery silty clay	CH	A-7	0	0-15	82-100	67-100	50-100	43-100	60-85	30-50
Caneyville------	0-3	Silt loam	CL	A-6	0	0-5	89-100	74-100	63-100	55-91	30-40	11-20
	3-10	Silty clay, clay, silty clay loam, silt loam	CH, CL	A-7	0	0-4	90-100	77-100	69-100	64-100	42-70	20-45
	10-24	Clay, silty clay, channery silty clay	CH	A-7	0-9	0-9	74-100	35-100	29-100	25-100	50-75	30-45
	>24	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
FyE:												
Frederick-------	0-8	Gravelly silt loam, silt loam	ML, GM, GC, CL	A-4, A-6	0	0-8	66-100	41-100	34-100	29-96	15-35	NP-15
	8-29	Gravelly silty clay loam, silty clay, clay, silty clay loam	CH, MH, SC, SM	A-7	0	0-4	84-100	43-100	40-100	37-99	50-70	20-40
	29-80	Clay, silty clay, channery clay, channery silty clay	CH	A-7	0	0-15	82-100	67-100	50-100	43-100	60-85	30-50
Caneyville------	0-3	Silt loam	CL	A-6	0	0-5	89-100	74-100	63-100	55-91	30-40	11-20
	3-10	Silty clay, clay, silty clay loam, silt loam	CH, CL	A-7	0	0-4	90-100	77-100	69-100	64-100	42-70	20-45
	10-24	Clay, silty clay, channery silty clay	CH	A-7	0-9	0-9	74-100	35-100	29-100	25-100	50-75	30-45
	>24	Unweathered bedrock			---	---	---	---	---	---	---	---
GaC:												
Gauley----------	0-3	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	23-41	23-41	---	---	---	---	---	---
	6-8	Very channery sandy loam, channery sandy loam	SM, ML, GM, CL-ML	A-1, A-2, A-4	1-10	30-50	40-80	40-75	35-70	20-55	15-25	NP-7
	8-26	Channery loam, very channery loam, very channery sandy loam	CL-ML, SM, ML, GM	A-1, A-2, A-4	0	10-40	45-80	40-80	40-75	20-55	15-25	NP-7
	26-38	Extremely channery loam, very channery sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-4	0	10-50	45-75	30-75	25-70	20-50	15-25	NP-7
	>38	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
GaE:												
Gauley----------	0-3	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	3-6	Highly decomposed plant material	PT	A-8	23-41	23-41	---	---	---	---	---	---
	6-8	Very channery sandy loam, channery sandy loam	SM, ML, GM, CL-ML	A-1, A-2, A-4	1-10	30-50	40-80	40-75	35-70	20-55	15-25	NP-7
	8-26	Channery loam, very channery loam, very channery sandy loam	SM, ML, GM, CL-ML	A-1, A-2, A-4	0	10-40	45-80	40-80	40-75	20-55	15-25	NP-7
	26-38	Extremely channery loam, very channery sandy loam	SM, SC-SM, GC-GM, GM	A-1, A-2, A-4	0	10-50	45-75	30-75	25-70	20-50	15-25	NP-7
	>38	Unweathered bedrock			---	---	---	---	---	---	---	---
GnC:												
Gilpin----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-3	Channery silt loam	CL, CL-ML, ML	A-4, A-6	0	0-4	81-94	63-94	57-94	49-84	20-40	4-15
	3-24	Channery loam, channery silt loam, silty clay loam	CL, CL-ML, GC, SC	A-2, A-4, A-6	0	0-19	60-96	20-96	18-96	16-94	20-40	4-15
	24-36	Extremely channery silt loam, channery loam, very channery silt loam, very channery silty clay loam	GC-GM, ML, GC	A-1, A-2, A-4, A-6	0	0-21	41-71	13-71	12-71	10-71	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
GnD:												
Gilpin----------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-2	Highly decomposed plant material	PT	A-8	23-41	23-41	---	---	---	---	---	---
	2-3	Channery silt loam	ML, CL-ML, CL	A-4, A-6	0	0-4	81-94	63-94	57-94	49-84	20-40	4-15
	3-24	Channery loam, channery silt loam, silty clay loam	CL, CL-ML, GC, SC	A-2, A-4, A-6	0	0-19	60-96	20-96	18-96	16-94	20-40	4-15
	24-36	Extremely channery silt loam, channery loam, very channery silt loam, very channery silty clay loam	GC, GC-GM, ML	A-1, A-2, A-4, A-6	0	0-21	41-71	13-71	12-71	10-71	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---
GpC:												
Gilpin----------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-2	Highly decomposed plant material	PT	A-8	23-41	23-41	---	---	---	---	---	---
	2-3	Channery silt loam	CL, CL-ML, ML	A-4, A-6	0	0-4	81-94	63-94	57-94	49-84	20-40	4-15
	3-24	Channery loam, channery silt loam, silty clay loam	CL-ML, SC, CL, GC	A-2, A-4, A-6	0	0-19	60-96	20-96	18-96	16-94	20-40	4-15
	24-36	Extremely channery silt loam, channery loam, very channery silt loam, very channery silty clay loam	ML, GC-GM, GC	A-1, A-2, A-4, A-6	0	0-21	41-71	13-71	12-71	10-71	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
GpE:												
Gilpin----------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-2	Highly decomposed plant material	PT	A-8	23-41	23-41	---	---	---	---	---	---
	2-3	Channery silt loam	CL-ML, ML, CL	A-4, A-6	0	0-4	81-94	63-94	57-94	49-84	20-40	4-15
	3-24	Channery loam, channery silt loam, silty clay loam	CL, CL-ML, GC, SC	A-2, A-4, A-6	0	0-19	60-96	20-96	18-96	16-94	20-40	4-15
	24-36	Extremely channery silt loam, channery loam, very channery silt loam, very channery silty clay loam	ML, GC-GM, GC	A-1, A-2, A-4, A-6	0	0-21	41-71	13-71	12-71	10-71	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---
Ho:												
Holly----------	0-4	Silt loam	ML	A-4	0	0	83-100	66-100	53-100	45-96	25-35	3-10
	4-42	Silt loam, loam, sandy loam, silty clay loam	ML, SM	A-4, A-6	0	0	76-100	60-100	48-100	41-100	20-40	NP-14
	42-65	Silt loam, loam, sandy loam, silty clay loam	SM, ML	A-2, A-4	0	0	64-100	43-100	34-100	29-100	20-40	NP-10
KxF:												
Kaymine---------	0-13	Channery loam, extremely channery loam	GC	A-2, A-4, A-6	0	11-17	44-73	7-73	6-69	5-54	25-35	7-12
	13-65	Extremely channery loam, very stony silt loam, very channery loam	GC	A-2, A-4, A-6	0	4-18	50-71	11-71	10-68	7-53	25-35	7-12
Rock outcrop----	0-10	Bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
LcC:												
Leatherbark-----	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-7	Silt loam	CL-ML	A-4	0	0-23	69-100	51-100	43-100	37-91	22-62	3-17
	7-37	Channery silt loam, very channery silt loam, extremely channery loam, silty clay loam	GM, SC, SM	A-2, A-4	0	0-19	53-86	17-86	14-86	13-85	29-48	10-28
	37-40	Extremely channery silt loam, extremely channery loam, very channery silt loam	GC, SC	A-2	0	0-25	46-79	13-79	12-79	10-77	30-47	12-25
	40-41	Weathered bedrock			---	---	---	---	---	---	---	---
LgB:												
Lily------------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-8	Loam, sandy loam, fine sandy loam	ML, CL-ML	A-4	0	0-4	90-100	77-100	58-95	30-58	15-35	NP-10
	8-25	Clay loam, sandy clay loam, loam, fine sandy loam	ML, SC, CL, SM	A-4, A-6	0	0-4	90-100	77-100	65-100	49-80	15-35	3-15
	25-33	Sandy clay loam, clay loam, gravelly sandy clay loam, loamy sand	CL, SM, ML, SC	A-1-b, A-2, A-4, A-6	0	0-7	73-100	35-100	26-100	8-64	15-35	3-15
	>33	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
LgC:												
Lily----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-8	Loam, sandy loam, fine sandy loam	ML, CL-ML	A-4	0	0-4	90-100	77-100	58-95	30-58	15-35	NP-10
	8-25	Clay loam, sandy clay loam, loam, fine sandy loam	CL, SM, SC, ML	A-4, A-6	0	0-4	90-100	77-100	65-100	49-80	15-35	3-15
	25-33	Sandy clay loam, clay loam, gravelly sandy clay loam, loamy sand	SM, SC, ML, CL	A-1-b, A-2, A-4, A-6	0	0-7	73-100	35-100	26-100	8-64	15-35	3-15
	>33	Unweathered bedrock			---	---	---	---	---	---	---	---
LhE:												
Lily----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-8	Loam, sandy loam, fine sandy loam	CL-ML, ML	A-4	0	0-4	90-100	77-100	58-95	30-58	15-35	NP-10
	8-25	Clay loam, sandy clay loam, loam, fine sandy loam	ML, SC, SM, CL	A-4, A-6	0	0-4	90-100	77-100	65-100	49-80	15-35	3-15
	25-33	Sandy clay loam, clay loam, gravelly sandy clay loam, loamy sand	SM, CL, ML, SC	A-1-b, A-2, A-4, A-6	0	0-7	73-100	35-100	26-100	8-64	15-35	3-15
	>33	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
Lo:												
Lobdell---------	0-10	Silt loam	CL-ML, ML, CL	A-4	0	0	91-100	82-100	65-100	56-96	20-30	NP-8
	10-28	Loam, silt loam, fine sandy loam	ML	A-4	0	0	85-100	62-100	43-96	29-74	20-35	NP-10
	28-65	Silt loam, loam, sandy loam, very gravelly silt loam, gravelly silt loam	CL-ML, SM, CL, ML	A-4	0	0	60-95	15-84	12-84	10-80	15-35	NP-10
MaB:												
Macove----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery loam, channery silt loam	SM, GM	A-1-b, A-2-4, A-4	0-7	5-10	60-79	27-73	19-70	13-54	20-30	NP-7
	5-15	Very channery silt loam, channery silt loam, channery loam	GP-GM, GM, SM	A-1-a, A-1-b, A-4	0-16	5-27	43-82	14-76	11-76	10-73	20-30	NP-7
	15-65	Very channery silt loam, very channery loam, very channery silty clay loam, extremely channery silty clay loam	GP-GM, SM, GM	A-1-a, A-1-b, A-2	0-31	15-62	48-94	5-89	3-89	3-88	20-30	NP-7

Table 16.--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	
MaC:												
Macove----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery loam, channery silt loam	SM, GM	A-1-b, A-2-4, A-4	0-7	5-10	60-79	27-73	19-70	13-54	20-30	NP-7
	5-15	Very channery silt loam, channery silt loam, channery loam	GM, GP-GM, SM	A-1-a, A-1-b, A-4	0-16	5-27	43-82	14-76	11-76	10-73	20-30	NP-7
	15-65	Very channery silt loam, very channery loam, very channery silty clay loam, extremely channery silty clay loam	GM, GP-GM, SM	A-1-a, A-1-b, A-2	0-31	15-62	48-94	5-89	3-89	3-88	20-30	NP-7
MaD:												
Macove----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery loam, channery silt loam	GM, SM	A-1-b, A-2-4, A-4	0-7	5-10	60-79	27-73	19-70	13-54	20-30	NP-7
	5-15	Very channery silt loam, channery silt loam, channery loam	SM, GP-GM, GM	A-1-a, A-1-b, A-4	0-16	5-27	43-82	14-76	11-76	10-73	20-30	NP-7
	15-65	Very channery silt loam, very channery loam, very channery silty clay loam, extremely channery silty clay loam	GM, SM, GP-GM	A-1-a, A-1-b, A-2	0-31	15-62	48-94	5-89	3-89	3-88	20-30	NP-7

Table 16.--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	
McC:												
Macove----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery loam, channery silt loam	GM, SM	A-1-b, A-2-4, A-4	0-7	5-10	60-79	27-73	19-70	13-54	20-30	NP-7
	5-15	Very channery silt loam, channery silt loam, channery loam	SM, GM, GP-GM	A-1-a, A-1-b, A-4	0-16	5-27	43-82	14-76	11-76	10-73	20-30	NP-7
	15-65	Very channery silt loam, very channery loam, very channery silty clay loam, extremely channery silty clay loam	GM, SM, GP-GM	A-1-a, A-1-b, A-2	0-31	15-62	48-94	5-89	3-89	3-88	20-30	NP-7
McE:												
Macove----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery loam, channery silt loam	SM, GM	A-1-b, A-2-4, A-4	0-7	5-10	60-79	27-73	19-70	13-54	20-30	NP-7
	5-15	Very channery silt loam, channery silt loam, channery loam	GP-GM, GM, SM	A-1-a, A-1-b, A-4	0-16	5-27	43-82	14-76	11-76	10-73	20-30	NP-7
	15-65	Very channery silt loam, very channery loam, very channery silty clay loam, extremely channery silty clay loam	GP-GM, GM, SM	A-1-a, A-1-b, A-2	0-31	15-62	48-94	5-89	3-89	3-88	20-30	NP-7

Table 16.--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	
MeF:												
Macove----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-5	Channery loam, channery silt loam	GM, SM	A-1-b, A-2-4, A-4	0-7	5-10	60-79	27-73	19-70	13-54	20-30	NP-7
	5-15	Very channery silt loam, channery silt loam, channery loam	GM, GP-GM, SM	A-1-a, A-1-b, A-4	0-16	5-27	43-82	14-76	11-76	10-73	20-30	NP-7
	15-65	Very channery silt loam, very channery loam, very channery silty clay loam, extremely channery silty clay loam	SM, GP-GM, GM	A-1-a, A-1-b, A-2	0-31	15-62	48-94	5-89	3-89	3-88	20-30	NP-7
Gilpin----------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-2	Highly decomposed plant material	PT	A-8	23-41	23-41	---	---	---	---	---	---
	2-3	Channery silt loam	ML, CL, CL-ML	A-4, A-6	0	0-4	81-94	63-94	57-94	49-84	20-40	4-15
	3-24	Channery loam, channery silt loam, silty clay loam	GC, CL, SC, CL-ML	A-2, A-4, A-6	0	0-19	60-96	20-96	18-96	16-94	20-40	4-15
	24-36	Extremely channery silt loam, channery loam, very channery silt loam, very channery silty clay loam	ML, GC, GC-GM	A-1, A-2, A-4, A-6	0	0-21	41-71	13-71	12-71	10-71	20-40	4-15
	36-37	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
MkC:												
Mandy----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-6	Channery silt loam	CL-ML	A-4	0	0-11	68-85	50-85	42-85	33-72	19-77	3-16
	6-29	Channery silt loam, very channery silt loam, extremely channery loam	GC, GM, SC-SM	A-1, A-2, A-4	0	0-19	53-86	17-86	14-86	12-74	21-41	6-18
	29-37	Extremely channery silt loam, extremely channery loam	GM, SC-SM, GC	A-1, A-2	0	0-25	46-79	13-79	11-79	9-69	0-39	NP-19
	37-38	Weathered bedrock			---	---	---	---	---	---	---	---
MkE:												
Mandy----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-6	Channery silt loam	CL-ML	A-4	0	0-11	68-85	50-85	42-85	33-72	19-77	3-16
	6-29	Channery silt loam, very channery silt loam, extremely channery loam	GC, GM, SC-SM	A-1, A-2, A-4	0	0-19	53-86	17-86	14-86	12-74	21-41	6-18
	29-37	Extremely channery silt loam, extremely channery loam	GC, GM, SC-SM	A-1, A-2	0	0-25	46-79	13-79	11-79	9-69	0-39	NP-19
	37-38	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
MkF:												
Mandy----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-6	Channery silt loam	CL-ML	A-4	0	0-11	68-85	50-85	42-85	33-72	19-77	3-16
	6-29	Channery silt loam, very channery silt loam, extremely channery loam	GC, GM, SC-SM	A-1, A-2, A-4	0	0-19	53-86	17-86	14-86	12-74	21-41	6-18
	29-37	Extremely channery silt loam, extremely channery loam	GC, GM, SC-SM	A-1, A-2	0	0-25	46-79	13-79	11-79	9-69	0-39	NP-19
	37-38	Weathered bedrock			---	---	---	---	---	---	---	---
MkG:												
Mandy----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-6	Channery silt loam	CL-ML	A-4	0	0-11	68-85	50-85	42-85	33-72	19-77	3-16
	6-29	Channery silt loam, very channery silt loam, extremely channery loam	GC, GM, SC-SM	A-1, A-2, A-4	0	0-19	53-86	17-86	14-86	12-74	21-41	6-18
	29-37	Extremely channery silt loam, extremely channery loam	SC-SM, GC, GM	A-1, A-2	0	0-25	46-79	13-79	11-79	9-69	0-39	NP-19
	37-38	Weathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
Ml:												
Melvin----------	0-10	Silt loam	ML, CL-ML, CL	A-4	0	0	95-100	84-100	80-100	68-85	15-55	4-18
	10-58	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	95-100	85-100	77-100	67-100	24-26	5-20
	58-65	Silt loam, silty clay loam, loam, sandy loam	CL-ML, CL	A-4, A-6	0	0	88-100	71-100	53-100	27-66	25-40	5-20
Lindside--------	0-9	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	92-100	87-100	75-94	20-35	2-15
	9-60	Silty clay loam, silt loam, very fine sandy loam	CL-ML, ML, CL	A-4, A-6	0	0	100	94-100	89-100	78-100	18-51	4-18
	60-65	Stratified gravelly sandy loam to silty clay loam, fine sandy loam, very fine sandy loam	ML, SM, SC, CL	A-2, A-4, A-6	0	0	69-100	34-100	26-100	7-55	20-51	4-18

Table 16.--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	
MzC:												
Mertz	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-5	Channery silt loam	CL-ML, GM, ML	A-4, A-6	0-3	5-10	68-96	29-96	25-96	21-86	25-40	4-12
	5-56	Channery silt loam, very channery clay loam, channery silty clay loam, extremely channery silty clay loam, very channery silty clay loam	CL, ML, GC, GM	A-4, A-6, A-7	0	5-13	67-96	30-96	24-96	23-94	30-45	7-20
	56-65	Gravelly silt loam, very gravelly silty clay loam, extremely gravelly silt loam, extremely channery silty clay loam	ML, CL, GM, GC	A-6, A-7	0	4-31	54-85	9-85	7-85	7-84	30-54	10-20

Table 16.--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	
MzE:												
Mertz	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-5	Channery silt loam	ML, GM, CL-ML	A-4, A-6	0-3	5-10	68-96	29-96	25-96	21-86	25-40	4-12
	5-56	Channery silt loam, channery silty clay loam, very channery clay loam, extremely channery silty clay loam, very channery silty clay loam	CL, GM, ML, GC	A-4, A-6, A-7	0	5-13	67-96	30-96	24-96	23-94	30-45	7-20
	56-65	Gravelly silt loam, very gravelly silty clay loam, extremely gravelly silt loam, extremely channery silty clay loam	GM, GC, CL, ML	A-6, A-7	0	4-31	54-85	9-85	7-85	7-84	30-54	10-20
No:												
Nolin	0-5	Loam, silt loam	ML	A-4	0	0	100	95-100	80-95	60-80	15-30	NP-7
	5-65	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	95-100	85-100	75-100	25-46	5-23
Ph:												
Philo	0-8	Silt loam	ML, CL-ML	A-4	0-5	0-5	95-100	80-100	75-90	60-80	20-35	1-10
	8-38	Silt loam, loam	SM, GM, CL-ML, ML	A-4	0-5	0-5	80-100	75-100	70-90	45-80	20-35	1-10
	38-65	Stratified fine sand to sandy loam to silt loam, silt loam	GC, GM, SC, SM	A-2, A-4	0-5	0-10	25-100	20-100	15-95	10-90	15-30	1-10

Table 16.--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	
Po:												
Pope	0-10	Fine sandy loam	CL-ML, SC-SM, SM, ML	A-2, A-4	0	0	85-100	75-100	51-85	25-55	15-20	NP-5
	10-40	Fine sandy loam, loam, sandy loam	SC-SM, ML, CL-ML, SM	A-2, A-4	0	0	95-100	80-100	51-95	25-75	15-30	NP-7
	40-65	Gravelly sandy loam, loamy sand, stratified gravel to sand to silt	GM, SM, ML, SC-SM	A-1, A-2, A-4	0	0-20	45-100	35-100	30-95	15-70	15-30	NP-7
Pt:												
Potomac	0-6	Fine sandy loam	CL-ML, SC-SM, ML, SM	A-2, A-4	0	0-10	52-100	5-100	4-100	2-55	15-20	NP-5
	6-65	Extremely gravelly sandy loam, extremely gravelly loamy sand, extremely gravelly sand, very gravelly loamy sand	GM, GW-GM	A-1	0	6-41	44-59	4-38	3-35	1-17	15-15	NP-3
PuA:												
Purdy	0-8	Silt loam	ML	A-4, A-6, A-7	0	0	95-100	90-100	90-100	90-100	25-50	4-20
	8-30	Silty clay, clay, clay loam, silty clay loam	CH, CL, MH	A-6, A-7	0	0	95-100	90-100	85-100	75-85	30-65	11-30
	30-65	Silty clay, silty clay loam, clay	CH, CL, MH	A-6, A-7	0	0	95-100	90-100	85-100	70-95	30-65	11-30
Qu:												
Quarry	0-10	Bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
Se:												
Sensabaugh------	0-6	Loam	ML, CL, CL-ML	A-4	0	0-4	85-100	69-100	53-96	37-74	16-29	3-9
	6-25	Gravelly loam, gravelly silt loam	GC, SC-SM, CL-ML, CL	A-4, A-6	0	0-5	55-85	10-78	7-75	5-57	20-35	5-14
	25-33	Very gravelly loam, gravelly clay loam, gravelly silty clay loam, gravelly sandy clay loam, gravelly silt loam, extremely gravelly loam	SC-SM, GC-GM, GC, SC	A-4, A-6	0	0-10	54-85	7-78	5-78	3-67	22-36	6-15
	33-65	Extremely gravelly loam, very gravelly clay loam, extremely gravelly sandy clay loam, extremely gravelly silt loam, gravelly clay loam	GC, SC-SM, GC-GM, SC	A-2, A-4, A-6	0	3-10	52-95	5-80	3-80	2-68	20-36	6-15

Table 16.--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	
SfB:												
Shouns----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-4	Channery silt loam	CL, ML, CL-ML	A-4, A-6	0	0	65-100	45-100	36-100	31-96	15-30	3-12
	4-8	Channery silt loam	CL-ML, CL	A-4, A-6	0	0	55-100	15-100	12-100	10-96	15-35	5-15
	8-54	Very channery silty clay loam, clay loam, silt loam, channery silty clay loam	CL	A-6, A-4	0	0	55-100	16-100	10-100	9-98	25-40	8-17
	54-65	Channery silty clay loam, very channery clay loam	CL, ML	A-6, A-7	0	10-41	47-100	7-100	7-100	6-98	30-45	10-20
SfC:												
Shouns----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-4	Channery silt loam	ML, CL, CL-ML	A-4, A-6	0	0	65-100	45-100	36-100	31-96	15-30	3-12
	4-8	Channery silt loam	CL-ML, CL	A-4, A-6	0	0	55-100	15-100	12-100	10-96	15-35	5-15
	8-54	Very channery silty clay loam, clay loam, silt loam, channery silty clay loam	CL	A-6, A-4	0	0	55-100	16-100	10-100	9-98	25-40	8-17
	54-65	Channery silty clay loam, very channery clay loam	CL, ML	A-6, A-7	0	10-41	47-100	7-100	7-100	6-98	30-45	10-20

Table 16.--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	
ShC:												
Shouns----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-4	Channery silt loam	ML, CL, CL-ML	A-4, A-6	0	0	65-100	45-100	36-100	31-96	15-30	3-12
	4-8	Channery silt loam	CL, CL-ML	A-4, A-6	0	0	55-100	15-100	12-100	10-96	15-35	5-15
	8-54	Very channery silty clay loam, clay loam, silt loam, channery silty clay loam	CL	A-6, A-4	0	0	55-100	16-100	10-100	9-98	25-40	8-17
	54-65	Channery silty clay loam, very channery clay loam	CL, ML	A-6, A-7	0	10-41	47-100	7-100	7-100	6-98	30-45	10-20
ShE:												
Shouns----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-4	Channery silt loam	ML, CL-ML, CL	A-4, A-6	0	0	65-100	45-100	36-100	31-96	15-30	3-12
	4-8	Channery silt loam	CL, CL-ML	A-4, A-6	0	0	55-100	15-100	12-100	10-96	15-35	5-15
	8-54	Very channery silty clay loam, clay loam, silt loam, channery silty clay loam	CL	A-6, A-4	0	0	55-100	16-100	10-100	9-98	25-40	8-17
	54-65	Channery silty clay loam, very channery clay loam	ML, CL	A-6, A-7	0	10-41	47-100	7-100	7-100	6-98	30-45	10-20

Table 16.--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	
ShF:												
Shouns----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-4	Channery silt loam	ML, CL-ML, CL	A-4, A-6	0	0	65-100	45-100	36-100	31-96	15-30	3-12
	4-8	Channery silt loam	CL, CL-ML	A-4, A-6	0	0	55-100	15-100	12-100	10-96	15-35	5-15
	8-54	Very channery silty clay loam, clay loam, silt loam, channery silty clay loam	CL	A-6, A-4	0	0	55-100	16-100	10-100	9-98	25-40	8-17
	54-65	Channery silty clay loam, very channery clay loam	CL, ML	A-6, A-7	0	10-41	47-100	7-100	7-100	6-98	30-45	10-20

Table 16.--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	
SmC:												
Simoda----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-4	Silt loam	GC-GM, CL-ML, CL, GC	A-4	0-11	8-35	56-90	34-90	27-90	23-86	20-30	5-10
	4-29	Silt loam, channery loam, channery silty clay loam	SC, ML, GC, CL	A-4, A-6	0	0-14	73-100	42-100	27-100	24-98	25-40	7-14
	29-40	Channery sandy loam, very channery silt loam, silty clay loam, extremely channery silt loam	SC, ML, CL, GC	A-4, A-6	0	0-16	61-100	15-100	12-100	10-100	25-40	7-14
	40-48	Loam, very channery silt loam, channery silty clay loam, channery silt loam	CL, GC, ML, SC	A-4, A-6	0	0-21	47-100	5-100	4-100	4-100	25-40	7-14
	>48	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
SoC:												
Snowdog---------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	24-42	24-42	---	---	---	---	---	---
	2-4	Silt loam	SC-SM, SC, CL, CL-ML	A-2, A-4	5-25	0-25	60-95	55-90	45-90	30-80	20-30	5-10
	4-18	Silt loam, channery silt loam, loam	ML, SM, SC, CL	A-2, A-4, A-6	0-10	0-15	60-95	55-90	45-90	32-80	25-35	5-15
	18-42	Very channery sandy loam, very channery loam	SM, ML, SC, CL	A-2, A-4, A-6	0-15	10-30	45-80	40-75	25-75	10-70	25-35	5-15
	42-67	Channery silt loam, very channery loam, very channery sandy loam	SC, CL	A-2, A-4, A-6	0-15	10-30	45-80	40-75	25-75	10-70	20-40	5-20
SoE:												
Snowdog---------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	24-42	24-42	---	---	---	---	---	---
	2-4	Silt loam	SC, CL, CL-ML, SC-SM	A-2, A-4	5-25	0-25	60-95	55-90	45-90	30-80	20-30	5-10
	4-18	Silt loam, channery silt loam, loam	SM, CL, SC, ML	A-2, A-4, A-6	0-10	0-15	60-95	55-90	45-90	32-80	25-35	5-15
	18-42	Very channery sandy loam, very channery loam	CL, ML, SC, SM	A-2, A-4, A-6	0-15	10-30	45-80	40-75	25-75	10-70	25-35	5-15
	42-67	Channery silt loam, very channery loam, very channery sandy loam	CL, SC	A-2, A-4, A-6	0-15	10-30	45-80	40-75	25-75	10-70	20-40	5-20

Table 16.--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	
SoF:												
Snowdog---------	0-1	Slightly decomposed plant material	PT	A-8	25-43	25-43	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	24-42	24-42	---	---	---	---	---	---
	2-4	Silt loam	CL, CL-ML, SC-SM, SC	A-2, A-4	5-25	0-25	60-95	55-90	45-90	30-80	20-30	5-10
	4-18	Silt loam, channery silt loam, loam	SM, SC, CL, ML	A-2, A-4, A-6	0-10	0-15	60-95	55-90	45-90	32-80	25-35	5-15
	18-42	Very channery sandy loam, very channery loam	SM, ML, CL, SC	A-2, A-4, A-6	0-15	10-30	45-80	40-75	25-75	10-70	25-35	5-15
	42-67	Channery silt loam, very channery loam, very channery sandy loam	CL, SC	A-2, A-4, A-6	0-15	10-30	45-80	40-75	25-75	10-70	20-40	5-20

Table 16.--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	
SvC:												
Summers---------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-3	Highly decomposed plant material	PT	A-8	1-23	1-23	---	---	---	---	---	---
	3-13	Channery loam, very channery sandy loam	GM, ML, SM	A-2, A-4, A-6	0	0-5	60-85	50-70	40-65	30-60	20-40	1-12
	13-28	Channery loam, channery fine sandy loam, channery sandy loam, very channery sandy loam	SM, ML, GC, GM	A-2, A-4	0	5-30	55-80	55-70	45-65	20-55	20-40	1-15
	28-30	Very channery loam, very channery fine sandy loam, very channery sandy loam, extremely channery sandy loam	SM, GM	A-2, A-4, A-6	0	10-50	45-60	30-45	20-45	10-40	20-40	1-12
	>30	Unweathered bedrock			---	---	---	---	---	---	---	---
Tp:												
Tioga-----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-8	Fine sandy loam	SM	A-4	0	0	100	94-100	80-98	34-49	15-15	NP-4
	8-29	Silt loam, loam, fine sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0	66-100	29-100	25-98	20-80	15-15	NP-2
	29-65	Silt loam, gravelly loam, very gravelly loamy sand, fine sandy loam, loamy fine sand	GM, GW-GM, SM	A-1, A-2, A-3, A-4	0	0-6	57-100	10-100	9-97	4-47	15-15	NP-2

Table 16.--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	
Tp:												
Potomac---------	0-6	Fine sandy loam	CL-ML, SC-SM, SM, ML	A-2, A-4	0	0-10	52-100	5-100	4-100	2-55	15-20	NP-5
	6-65	Extremely gravelly sandy loam, extremely gravelly loamy sand, extremely gravelly sand, very gravelly loamy sand	GW-GM, GM	A-1	0	6-41	44-59	4-38	3-35	1-17	15-15	NP-3
TrC:												
Trussel---------	0-2	Moderately decomposed plant material	PT	A-8	1-24	1-24	---	---	---	---	---	---
	2-8	Silt loam	CL, SC, CL-ML	A-4	0	0-23	78-100	53-100	44-100	35-85	20-30	5-10
	8-20	Channery silt loam, channery loam, silty clay loam, silt loam	SC, ML, CL	A-4, A-6	0	0-8	78-100	52-100	46-100	40-95	25-40	7-14
	20-37	Channery silt loam, very channery loam, channery loam	SC, ML, GC, CL	A-2, A-6	0	0-18	58-93	19-93	16-86	12-65	28-45	12-18
	37-65	Channery silt loam, very channery loam, channery loam	GC, ML, SC, CL	A-2, A-6	0	0-19	57-93	18-93	16-88	11-66	28-45	12-18
Uf:												
Udifluvents-----	---	---	---	---	---	---	---	---	---	---	---	---
Fluvaquents-----	---	---	---	---	---	---	---	---	---	---	---	---
Ux:												
Udorthents------	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-10	Bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
WeC:												
Weikert---------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-7	Very channery silt loam, loam, channery silt loam	GM, ML, SM	A-1, A-2, A-4	0-3	8-31	46-85	6-75	5-75	4-72	30-40	4-10
	7-16	Very channery silt loam, loam, extremely channery silt loam	GM, GP-GM	A-1, A-2	0-3	21-31	47-82	7-64	6-64	5-62	28-36	3-9
	>16	Unweathered bedrock			---	---	---	---	---	---	---	---
WeD:												
Weikert---------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-7	Very channery silt loam, loam, channery silt loam	SM, ML, GM	A-1, A-2, A-4	0-3	8-31	46-85	6-75	5-75	4-72	30-40	4-10
	7-16	Very channery silt loam, loam, extremely channery silt loam	GP-GM, GM	A-1, A-2	0-3	21-31	47-82	7-64	6-64	5-62	28-36	3-9
	>16	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
WeF:												
Weikert---------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-7	Very channery silt loam, loam, channery silt loam	ML, GM, SM	A-1, A-2, A-4	0-3	8-31	46-85	6-75	5-75	4-72	30-40	4-10
	7-16	Very channery silt loam, loam, extremely channery silt loam	GM, GP-GM	A-1, A-2	0-3	21-31	47-82	7-64	6-64	5-62	28-36	3-9
	>16	Unweathered bedrock			---	---	---	---	---	---	---	---
WrG:												
Weikert---------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-7	Very channery silt loam, loam, channery silt loam	SM, ML, GM	A-1, A-2, A-4	0-3	8-31	46-85	6-75	5-75	4-72	30-40	4-10
	7-16	Very channery silt loam, loam, extremely channery silt loam	GP-GM, GM	A-1, A-2	0-3	21-31	47-82	7-64	6-64	5-62	28-36	3-9
	>16	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
WrG:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	1-25	1-25	---	---	---	---	---	---
	1-3	Channery silt loam, channery loam	GM, ML	A-2, A-4	0	0-19	55-95	23-95	19-95	15-79	20-67	2-15
	3-6	Channery silt loam, channery loam	SC, GM, ML, GC	A-2, A-4	0	0-18	57-91	26-91	22-91	17-76	20-44	2-15
	6-12	Channery loam, very channery loam, channery silt loam, very channery silt loam	GM, SC, SM, GC	A-1, A-2, A-4	0	0-27	50-86	12-86	9-86	7-78	16-45	2-22
	12-23	Channery loam, very channery loam, channery silt loam, very channery silt loam	SM, GM, SC, GC	A-1, A-2, A-4	0	0-35	48-86	8-86	6-86	5-79	16-44	2-22
	23-30	Extremely channery silt loam, very channery loam, very channery silt loam	SM, GM, GC-GM	A-1, A-2	0	0-47	43-79	8-79	7-79	5-74	16-44	2-22
	30-33	Weathered bedrock			---	---	---	---	---	---	---	---
Rough----------	0-2	Very channery silt loam	SM, GM	A-1, A-2, A-4	0-6	5-14	52-78	14-78	11-78	10-74	0-35	NP-10
	2-4	Extremely channery silt loam, extremely channery loam, very channery silt loam	GM, SM	A-1, A-2	0-6	5-12	52-78	14-78	11-78	10-74	0-35	NP-10
	4-7	Extremely channery silt loam, extremely channery loam	GM, SM	A-1, A-2	0-10	5-63	39-71	6-71	5-71	4-68	0-35	NP-10
	>7	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 16.--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	
ZoA:												
Zoar----------	0-9	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	94-100	88-100	71-100	61-96	0-47	NP-18
	9-43	Silty clay, silty clay loam	ML, MH, CL, CH	A-6, A-7	0	0	95-100	90-100	64-100	59-98	20-52	4-29
	43-65	Clay loam, silty clay loam, clay, channery silty clay, silty clay	CH, CL, MH, ML	A-6, A-7	0	0	58-100	28-100	22-100	21-100	37-101	19-73

Table 17.--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	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
AlB:														
Allegheny	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.05	---	52-86	---	---	4	---	---
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.00-0.10	---	48-74	---	---			
	2-3	23-52	---	---	0.15-0.35	42.00-141.00	0.15-0.25	---	35-70	---	---			
	3-10	23-52	28-50	7-27	1.20-1.40	4.00-14.00	0.12-0.22	0.0-2.9	1.0-4.0	.32	.32			
	10-49	0-52	28-88	0-40	1.20-1.50	4.00-14.00	0.13-0.18	0.0-2.9	0.4-0.8	.28	.28			
	49-65	0-52	28-88	0-40	1.20-1.40	4.00-14.00	0.08-0.17	0.0-2.9	0.4-0.7	.28	.28			
AlC:														
Allegheny	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.05	---	52-86	---	---	4	---	56
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.00-0.10	---	48-74	---	---			
	2-3	23-52	---	---	0.15-0.35	42.00-141.00	0.15-0.25	---	35-70	---	---			
	3-10	23-52	28-50	7-27	1.20-1.40	4.00-14.00	0.12-0.22	0.0-2.9	1.0-4.0	.32	.32			
	10-49	0-52	28-88	0-40	1.20-1.50	4.00-14.00	0.13-0.18	0.0-2.9	0.4-0.8	.28	.28			
	49-65	0-52	28-88	0-40	1.20-1.40	4.00-14.00	0.08-0.17	0.0-2.9	0.4-0.7	.28	.28			
An:														
Atkins	0-4	0-50	50-83	18-27	0.80-1.40	4.00-14.00	0.14-0.22	0.0-2.9	5.2-8.1	.32	.32	4	---	---
	4-29	---	---	18-35	1.20-1.50	0.42-14.00	0.14-0.18	0.0-2.9	1.9-3.3	.32	.32			
	29-65	---	---	10-35	1.20-1.50	1.40-42.00	0.08-0.18	0.0-2.9	0.6-1.1	.28	.32			
Philo	0-8	0-50	50-88	0-27	1.20-1.80	4.00-14.00	0.14-0.20	0.0-2.9	2.0-4.0	.37	.37	5	---	---
	8-38	0-52	28-88	0-27	1.20-1.80	4.00-14.00	0.10-0.20	0.0-2.9	0.0-1.0	.32	.32			
	38-65	0-100	0-88	0-27	1.20-2.00	42.00-141.00	0.03-0.06	0.0-2.9	0.0-0.5	.17	.20			
Potomac	0-6	43-85	0-50	0-20	1.20-1.40	4.00-42.00	0.10-0.14	0.0-2.9	0.5-4.0	.24	.24	3	3	86
	6-65	43-100	0-90	0-20	1.30-1.60	42.00-141.00	0.03-0.06	0.0-2.9	0.2-1.0	.17	.24			
BaE:														
Belmont	0-2	0-0	---	---	0.04-0.10	42.00-141.00	0.55-0.65	---	80-90	---	---	3	---	---
	2-5	0-50	50-88	0-27	1.20-1.40	4.00-42.00	0.16-0.20	0.0-2.9	6.1-10	.32	.32			
	5-8	0-50	50-88	0-27	1.20-1.40	4.00-42.00	0.16-0.20	0.0-2.9	2.3-2.4	.32	.32			
	8-14	0-50	50-83	0-40	1.30-1.50	4.00-14.00	0.14-0.18	3.0-5.9	0.6-1.0	.32	.32			
	14-25	0-50	50-83	0-40	1.30-1.50	4.00-14.00	0.14-0.18	3.0-5.9	0.3-0.5	.32	.32			
	25-37	0-20	40-73	27-60	1.30-1.50	4.00-14.00	0.14-0.18	3.0-5.9	0.1-0.2	.32	.32			
	37-53	0-80	0-73	20-60	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-0.4	.28	.37			
	>53	---	---	---	---	0.00-1.40	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
BcC:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
BcE:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
BcF:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
BkG:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
Weikert	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	---
	1-7	0-52	28-88	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	1.0-5.0	.28	.32			
	7-16	0-52	28-88	0-27	1.20-1.80	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.9	.28	.37			
	>16	---	---	---	---	4.00-141.00	---	---	---	---	---			
Calvin	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-50	50-88	0-27	1.20-1.40	14.00-42.00	0.10-0.18	0.0-2.9	2.0-6.0	.15	.24			
	5-28	0-52	28-88	0-27	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.20	.24			
	28-40	0-52	28-88	0-55	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.28			
	40-44	---	---	---	---	1.40-42.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
BlC:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
BlE:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
BlF:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
BlF:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
BrE:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	48
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
Weikert	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	48
	1-7	0-52	28-88	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	1.0-5.0	.28	.32			
	7-16	0-52	28-88	0-27	1.20-1.80	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.9	.28	.37			
	>16	---	---	---	---	4.00-141.00	---	---	---	---	---			
BrF:														
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	48
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
Weikert	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	48
	1-7	0-52	28-88	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	1.0-5.0	.28	.32			
	7-16	0-52	28-88	0-27	1.20-1.80	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.9	.28	.37			
	>16	---	---	---	---	4.00-141.00	---	---	---	---	---			
BtC:														
Blackthorn	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	4	---	---
	1-6	23-52	28-50	7-27	1.20-1.40	4.00-42.00	0.10-0.15	0.0-2.9	2.0-5.0	.20	.24			
	6-44	23-80	0-55	7-40	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0	.20	.28			
	44-65	0-20	40-73	27-60	1.30-1.60	1.40-14.00	0.14-0.18	3.0-5.9	0.1-0.5	.28	.28			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
BtE:														
Blackthorn----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	4	---	---
	1-6	23-52	28-50	7-27	1.20-1.40	4.00-42.00	0.10-0.15	0.0-2.9	2.0-5.0	.20	.24			
	6-44	23-80	0-55	7-40	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0	.20	.28			
	44-65	0-20	40-73	27-60	1.30-1.60	1.40-14.00	0.14-0.18	3.0-5.9	0.1-0.5	.28	.28			
BxF:														
Briery----------	0-2	---	---	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-3.0	.32	.43	5	8	0
	2-65	---	---	18-32	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.32	.43			
Rock outcrop---------	0-10	---	---	---	---	---	---	---	---	---	---	--	---	0
CbC:														
Calvin----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-50	50-88	0-27	1.20-1.40	14.00-42.00	0.10-0.18	0.0-2.9	2.0-6.0	.15	.24			
	5-28	0-52	28-88	0-27	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.20	.24			
	28-40	0-52	28-88	0-55	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.28			
	40-44	---	---	---	---	1.40-42.00	---	---	---	---	---			
Dekalb----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
Berks----------	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
CbE:														
Calvin----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-50	50-88	0-27	1.20-1.40	14.00-42.00	0.10-0.18	0.0-2.9	2.0-6.0	.15	.24			
	5-28	0-52	28-88	0-27	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.20	.24			
	28-40	0-52	28-88	0-55	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.28			
	40-44	---	---	---	---	1.40-42.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
CbE:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
CbF:														
Calvin	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-50	50-88	0-27	1.20-1.40	14.00-42.00	0.10-0.18	0.0-2.9	2.0-6.0	.15	.24			
	5-28	0-52	28-88	0-27	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.20	.24			
	28-40	0-52	28-88	0-55	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.28			
	40-44	---	---	---	---	1.40-42.00	---	---	---	---	---			
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
Berks	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
CeF:														
Caneyville----------	0-3	0-50	50-83	10-27	1.20-1.40	4.23-14.11	0.17-0.22	0.0-2.9	2.0-4.0	.43	.43	2	---	86
	3-10	0-45	0-73	25-60	1.35-1.60	1.41-4.23	0.12-0.18	3.0-5.9	0.0-0.2	.28	.28			
	10-24	0-45	0-60	40-100	1.35-1.60	1.41-4.23	0.12-0.18	3.0-5.9	0.0-0.2	.28	.28			
	>24	---	---	---	---	0.42-14.11	---	---	---	---	---			
Frederick----------	0-8	0-50	50-83	0-27	1.25-1.50	14.00-42.00	0.12-0.20	0.0-2.9	1.0-4.0	.28	.28	4	---	---
	8-29	0-20	0-73	27-40	1.20-1.50	4.00-14.00	0.10-0.18	3.0-5.9	0.4-1.0	.24	.24			
	29-80	0-45	0-40	40-80	1.20-1.50	4.00-14.00	0.10-0.18	6.0-8.9	0.1-0.5	.24	.24			
Rock outcrop---------	0-10	---	---	---	---	---	---	---	---	---	---	--	---	---
CfB:														
Cateache----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
CfC:														
Cateache----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
CfD:														
Cateache----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
CfE:														
Cateache----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
CfF:														
Cateache----------	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
CgC:														
Cateache	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
CgE:														
Cateache	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
CgF:														
Cateache	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-5	0-52	28-88	0-27	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	12-25	.28	.32			
	5-29	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.12-0.16	3.0-5.9	1.0-3.0	.28	.32			
	29-36	0-50	40-88	0-40	1.30-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.6-1.1	.28	.37			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
Ch:														
Chavies	0-10	43-85	0-50	0-20	1.20-1.40	14.00-42.00	0.11-0.18	0.0-2.9	0.5-4.0	.24	.24	4	3	86
	10-54	0-85	0-88	0-27	1.20-1.40	14.00-42.00	0.11-0.20	0.0-2.9	0.4-0.7	.24	.24			
	54-65	0-85	0-88	0-27	1.30-1.50	14.00-42.00	0.08-0.18	0.0-2.9	0.1-0.2	.24	.24			
CpB:														
Cookport	0-1	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---	3	---	---
	1-9	23-52	31-50	10-27	1.20-1.40	4.00-14.00	0.12-0.16	0.0-2.9	1.0-15	.32	.32			
	9-22	20-80	0-53	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.6-1.2	.24	.28			
	22-42	20-80	0-53	18-35	1.40-1.70	0.42-1.40	0.08-0.12	0.0-2.9	0.3-0.8	.24	.28			
	42-49	20-80	0-53	18-35	1.40-1.70	0.42-1.40	0.08-0.12	0.0-2.9	0.2-0.8	.24	.28			
	>49	---	---	---	---	1.40-4.00	---	---	---	---	---			
CuB:														
Culleoka	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	56
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	4.00-42.00	0.14-0.20	0.0-2.9	8.0-17	.32	.32			
	3-29	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.12-0.20	0.0-2.9	0.7-1.3	.28	.32			
	29-35	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.05-0.14	0.0-2.9	0.5-1.2	.17	.28			
	35-40	---	---	---	---	0.42-14.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
CuC:														
Culleoka	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	56
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	4.00-42.00	0.14-0.20	0.0-2.9	8.0-17	.32	.32			
	3-29	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.12-0.20	0.0-2.9	0.7-1.3	.28	.32			
	29-35	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.05-0.14	0.0-2.9	0.5-1.2	.17	.28			
	35-40	---	---	---	---	0.42-14.00	---	---	---	---	---			
CuD:														
Culleoka	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	56
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	4.00-42.00	0.14-0.20	0.0-2.9	8.0-17	.32	.32			
	3-29	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.12-0.20	0.0-2.9	0.7-1.3	.28	.32			
	29-35	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.05-0.14	0.0-2.9	0.5-1.2	.17	.28			
	35-40	---	---	---	---	0.42-14.00	---	---	---	---	---			
CyE:														
Culleoka	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	56
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	4.00-42.00	0.14-0.20	0.0-2.9	8.0-17	.32	.32			
	3-29	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.12-0.20	0.0-2.9	0.7-1.3	.28	.32			
	29-35	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.05-0.14	0.0-2.9	0.5-1.2	.17	.28			
	35-40	---	---	---	---	0.42-14.00	---	---	---	---	---			
CyF:														
Culleoka	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	56
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	4.00-42.00	0.14-0.20	0.0-2.9	8.0-17	.32	.32			
	3-29	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.12-0.20	0.0-2.9	0.7-1.3	.28	.32			
	29-35	0-50	40-88	0-40	1.20-1.50	4.00-42.00	0.05-0.14	0.0-2.9	0.5-1.2	.17	.28			
	35-40	---	---	---	---	0.42-14.00	---	---	---	---	---			
DeC:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
DeE:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
DeF:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
DhC:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
Hazleton	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	2.0-13	.15	.17			
	3-32	43-85	0-50	0-20	1.20-1.40	14.00-141.00	0.08-0.12	0.0-2.9	0.0-5.0	.15	.20			
	32-52	43-85	0-50	0-20	1.20-1.40	14.00-141.00	0.06-0.12	0.0-2.9	0.0-1.5	.15	.20			
	>52	---	---	---	---	14.00-42.00	---	---	---	---	---			
DhE:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
DhE:														
Hazleton	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	2.0-13	.15	.17			
	3-32	43-85	0-50	0-20	1.20-1.40	14.00-141.00	0.08-0.12	0.0-2.9	0.0-5.0	.15	.20			
	32-52	43-85	0-50	0-20	1.20-1.40	14.00-141.00	0.06-0.12	0.0-2.9	0.0-1.5	.15	.20			
	>52	---	---	---	---	14.00-42.00	---	---	---	---	---			
DhF:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
Hazleton	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	23-52	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-52	28-50	7-27	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	2.0-13	.15	.17			
	3-32	43-85	0-50	0-20	1.20-1.40	14.00-141.00	0.08-0.12	0.0-2.9	0.0-5.0	.15	.20			
	32-52	43-85	0-50	0-20	1.20-1.40	14.00-141.00	0.06-0.12	0.0-2.9	0.0-1.5	.15	.20			
	>52	---	---	---	---	14.00-42.00	---	---	---	---	---			
DkF:														
Dekalb	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	30-50	---	---	2	---	---
	1-2	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	2-4	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	4-8	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	2.0-10	.17	.24			
	8-15	23-52	28-50	7-27	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	15-23	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.06-0.12	0.0-2.9	0.7-2.0	.17	.24			
	23-34	43-85	0-50	0-20	1.20-1.50	42.00-141.00	0.05-0.10	0.0-2.9	0.2-0.9	.17	.24			
	>34	---	---	---	---	14.00-42.00	---	---	---	---	---			
Rock outcrop	0-10	---	---	---	---	---	---	---	---	---	---	--	---	0
Du:														
Dunning	0-20	0-50	50-83	12-40	1.20-1.40	4.00-14.00	0.19-0.23	0.0-2.9	2.0-10	.37	.37	5	---	56
	20-65	0-45	0-40	35-60	1.40-1.65	0.42-1.40	0.14-0.18	3.0-5.9	1.0-4.0	.28	.28			
ElF:														
Elliber	0-2	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	48
	2-12	0-50	50-88	0-27	1.20-1.40	4.00-42.00	0.08-0.12	0.0-2.9	1.0-3.0	.17	.32			
	12-67	0-52	0-55	0-40	1.40-1.60	4.00-42.00	0.08-0.12	0.0-2.9	0.6-1.0	.17	.32			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
ErB:														
Ernest	0-2	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	2-3	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	3-10	0-50	50-83	15-20	1.20-1.40	4.00-14.00	0.14-0.20	0.0-2.9	2.0-4.0	.43	.43			
	10-28	0-50	50-83	20-35	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-2.0	.32	.32			
	28-44	0-52	15-83	18-30	1.40-1.70	0.42-4.00	0.08-0.12	0.0-2.9	0.2-1.0	.32	.37			
	44-62	0-50	50-83	0-35	1.30-1.60	0.42-4.00	0.08-0.12	3.0-5.9	0.1-1.0	.32	.37			
EsC:														
Ernest	0-2	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	2-3	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	3-10	0-50	50-83	15-20	1.20-1.40	4.00-14.00	0.14-0.20	0.0-2.9	2.0-4.0	.43	.43			
	10-28	0-50	50-83	20-35	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-2.0	.32	.32			
	28-44	0-52	15-83	18-30	1.40-1.70	0.42-4.00	0.08-0.12	0.0-2.9	0.2-1.0	.32	.37			
	44-62	0-50	50-83	0-35	1.30-1.60	0.42-4.00	0.08-0.12	3.0-5.9	0.1-1.0	.32	.37			
FaE:														
Faywood	0-8	0-50	50-88	0-27	1.30-1.40	4.00-14.00	0.18-0.22	0.0-2.9	1.0-6.0	.37	.37	3	---	56
	8-28	0-45	0-73	27-100	1.35-1.45	0.42-4.00	0.12-0.17	3.0-5.9	1.0-2.5	.28	.28			
	28-32	---	---	---	---	0.00-0.00	---	---	---	---	---			
FaF:														
Faywood	0-8	0-50	50-88	0-27	1.30-1.40	4.00-14.00	0.18-0.22	0.0-2.9	1.0-6.0	.37	.37	3	---	56
	8-28	0-45	0-73	27-100	1.35-1.45	0.42-4.00	0.12-0.17	3.0-5.9	1.0-2.5	.28	.28			
	28-32	---	---	---	---	0.00-0.00	---	---	---	---	---			
FkB:														
Frankstown	0-4	0-50	50-83	18-27	1.20-1.40	4.00-14.00	0.18-0.22	0.0-2.9	1.0-4.0	.37	.37	3	---	---
	4-35	0-50	50-83	25-35	1.30-1.50	4.00-14.00	0.14-0.20	3.0-5.9	0.4-1.0	.28	.28			
	35-45	0-50	0-88	18-45	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-0.8	.28	.32			
	45-46	---	---	---	---	0.00-1.40	---	---	---	---	---			
FkC:														
Frankstown	0-4	0-50	50-83	18-27	1.20-1.40	4.00-14.00	0.18-0.22	0.0-2.9	1.0-4.0	.37	.37	3	---	---
	4-35	0-50	50-83	25-35	1.30-1.50	4.00-14.00	0.14-0.20	3.0-5.9	0.4-1.0	.28	.28			
	35-45	0-50	0-88	18-45	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-0.8	.28	.32			
	45-46	---	---	---	---	0.00-1.40	---	---	---	---	---			
FkD:														
Frankstown	0-4	0-50	50-83	18-27	1.20-1.40	4.00-14.00	0.18-0.22	0.0-2.9	1.0-4.0	.37	.37	3	---	---
	4-35	0-50	50-83	25-35	1.30-1.50	4.00-14.00	0.14-0.20	3.0-5.9	0.4-1.0	.28	.28			
	35-45	0-50	0-88	18-45	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-0.8	.28	.32			
	45-46	---	---	---	---	0.00-1.40	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
FoC:														
Frankstown	0-4	0-50	50-83	18-27	1.20-1.40	4.00-14.00	0.18-0.22	0.0-2.9	1.0-4.0	.37	.37	3	---	---
	4-35	0-50	50-83	25-35	1.30-1.50	4.00-14.00	0.14-0.20	3.0-5.9	0.4-1.0	.28	.28			
	35-45	0-50	0-88	18-45	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-0.8	.28	.32			
	45-46	---	---	---	---	0.00-1.40	---	---	---	---	---			
FoE:														
Frankstown	0-4	0-50	50-83	18-27	1.20-1.40	4.00-14.00	0.18-0.22	0.0-2.9	1.0-4.0	.37	.37	3	---	---
	4-35	0-50	50-83	25-35	1.30-1.50	4.00-14.00	0.14-0.20	3.0-5.9	0.4-1.0	.28	.28			
	35-45	0-50	0-88	18-45	1.30-1.50	4.00-14.00	0.12-0.16	3.0-5.9	0.2-0.8	.28	.32			
	45-46	---	---	---	---	0.00-1.40	---	---	---	---	---			
FrB:														
Frederick	0-8	0-50	50-83	0-27	1.25-1.50	14.00-42.00	0.12-0.20	0.0-2.9	1.0-4.0	.28	.28	4	---	56
	8-29	0-20	0-73	27-40	1.20-1.50	4.00-14.00	0.10-0.18	3.0-5.9	0.4-1.0	.24	.24			
	29-80	0-45	0-40	40-80	1.20-1.50	4.00-14.00	0.10-0.18	6.0-8.9	0.1-0.5	.24	.24			
FrC:														
Frederick	0-8	0-50	50-83	0-27	1.25-1.50	14.00-42.00	0.12-0.20	0.0-2.9	1.0-4.0	.28	.28	4	---	56
	8-29	0-20	0-73	27-40	1.20-1.50	4.00-14.00	0.10-0.18	3.0-5.9	0.4-1.0	.24	.24			
	29-80	0-45	0-40	40-80	1.20-1.50	4.00-14.00	0.10-0.18	6.0-8.9	0.1-0.5	.24	.24			
FrD:														
Frederick	0-8	0-50	50-83	0-27	1.25-1.50	14.00-42.00	0.12-0.20	0.0-2.9	1.0-4.0	.28	.28	4	---	56
	8-29	0-20	0-73	27-40	1.20-1.50	4.00-14.00	0.10-0.18	3.0-5.9	0.4-1.0	.24	.24			
	29-80	0-45	0-40	40-80	1.20-1.50	4.00-14.00	0.10-0.18	6.0-8.9	0.1-0.5	.24	.24			
FyC:														
Frederick	0-8	0-50	50-83	0-27	1.25-1.50	14.00-42.00	0.12-0.20	0.0-2.9	1.0-4.0	.28	.28	4	---	56
	8-29	0-20	0-73	27-40	1.20-1.50	4.00-14.00	0.10-0.18	3.0-5.9	0.4-1.0	.24	.24			
	29-80	0-45	0-40	40-80	1.20-1.50	4.00-14.00	0.10-0.18	6.0-8.9	0.1-0.5	.24	.24			
Caneyville	0-3	0-50	50-83	10-27	1.20-1.40	4.23-14.11	0.17-0.22	0.0-2.9	2.0-4.0	.43	.43	3	7	38
	3-10	0-45	0-73	25-60	1.35-1.60	1.41-4.23	0.12-0.18	3.0-5.9	0.0-0.2	.28	.28			
	10-24	0-45	0-60	40-100	1.35-1.60	1.41-4.23	0.12-0.18	3.0-5.9	0.0-0.2	.28	.28			
	>24	---	---	---	---	0.42-14.11	---	---	---	---	---			
FyE:														
Frederick	0-8	0-50	50-83	0-27	1.25-1.50	14.00-42.00	0.12-0.20	0.0-2.9	1.0-4.0	.28	.28	4	---	56
	8-29	0-20	0-73	27-40	1.20-1.50	4.00-14.00	0.10-0.18	3.0-5.9	0.4-1.0	.24	.24			
	29-80	0-45	0-40	40-80	1.20-1.50	4.00-14.00	0.10-0.18	6.0-8.9	0.1-0.5	.24	.24			
Caneyville	0-3	0-50	50-83	10-27	1.20-1.40	4.23-14.11	0.17-0.22	0.0-2.9	2.0-4.0	.43	.43	3	---	---
	3-10	0-45	0-73	25-60	1.35-1.60	1.41-4.23	0.12-0.18	3.0-5.9	0.0-0.2	.28	.28			
	10-24	0-45	0-60	40-100	1.35-1.60	1.41-4.23	0.12-0.18	3.0-5.9	0.0-0.2	.28	.28			
	>24	---	---	---	---	0.42-14.11	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
GaC:														
Gauley	0-3	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	---
	3-6	43-85	---	---	0.15-0.35	42.00-141.00	0.15-0.45	---	35-70	---	---			
	6-8	43-85	0-50	0-20	1.20-2.00	14.00-42.00	0.10-0.16	0.0-2.9	2.0-14	.17	.17			
	8-26	23-52	28-50	7-27	1.20-2.00	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.17	.24			
	26-38	23-52	28-50	7-27	1.20-2.00	14.00-42.00	0.06-0.10	0.0-2.9	0.2-2.5	.17	.24			
	>38	---	---	---	---	1.40-4.00	---	---	---	---	---			
GaE:														
Gauley	0-3	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	---
	3-6	43-85	---	---	0.15-0.35	42.00-141.00	0.15-0.45	---	35-70	---	---			
	6-8	43-85	0-50	0-20	1.20-2.00	14.00-42.00	0.10-0.16	0.0-2.9	2.0-14	.17	.17			
	8-26	23-52	28-50	7-27	1.20-2.00	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.17	.24			
	26-38	23-52	28-50	7-27	1.20-2.00	14.00-42.00	0.06-0.10	0.0-2.9	0.2-2.5	.17	.24			
	>38	---	---	---	---	1.40-4.00	---	---	---	---	---			
GnC:														
Gilpin	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	0-50	50-83	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-18	.32	.32			
	3-24	0-52	28-87	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-1.2	.24	.28			
	24-36	0-52	28-87	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-1.2	.24	.32			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
GnD:														
Gilpin	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	43-85	---	---	0.15-0.35	42.00-141.00	0.15-0.45	---	35-70	---	---			
	2-3	0-50	50-83	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-18	.32	.32			
	3-24	0-52	28-87	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-1.2	.24	.28			
	24-36	0-52	28-87	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-1.2	.24	.32			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
GpC:														
Gilpin	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	43-85	---	---	0.15-0.35	42.00-141.00	0.15-0.45	---	35-70	---	---			
	2-3	0-50	50-83	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-18	.32	.32			
	3-24	0-52	28-87	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-1.2	.24	.28			
	24-36	0-52	28-87	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-1.2	.24	.32			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			
GpE:														
Gilpin	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	43-85	---	---	0.15-0.35	42.00-141.00	0.15-0.45	---	35-70	---	---			
	2-3	0-50	50-83	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-18	.32	.32			
	3-24	0-52	28-87	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-1.2	.24	.28			
	24-36	0-52	28-87	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-1.2	.24	.32			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
Ho:														
Holly	0-4	0-50	50-88	0-27	1.20-1.40	4.00-14.00	0.20-0.24	0.0-2.9	2.0-5.0	.28	.28	5	6	48
	4-42	0-85	0-88	0-40	1.20-1.50	1.40-14.00	0.17-0.21	0.0-2.9	0.6-1.1	.28	.32			
	42-65	0-85	0-88	0-40	1.20-1.45	4.00-42.00	0.10-0.20	0.0-2.9	0.4-0.8	.28	.32			
KxF:														
Kaymine	0-13	23-52	28-50	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.5-3.0	.32	.43	5	8	0
	13-65	23-52	28-50	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.2-0.4	.32	.43			
Rock outcrop	0-10	---	---	---	---	---	---	---	---	---	---	--	---	0
LcC:														
Leatherbark	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-7	0-50	50-83	7-27	1.20-1.50	4.00-14.00	0.10-0.17	0.0-2.9	2.0-13	.20	.20			
	7-37	0-52	28-83	18-40	1.30-1.50	0.42-4.00	0.09-0.17	3.0-5.9	0.8-1.2	.28	.28			
	37-40	0-52	28-83	18-35	1.30-1.50	0.42-4.00	0.09-0.17	3.0-5.9	0.5-0.8	.28	.28			
	40-41	---	---	---	---	0.00-1.40	---	---	---	---	---			
LgB:														
Lily	0-1	0-0	---	---	0.05-0.20	42.00-141.00	---	---	52-86	---	---	2	---	56
	1-8	43-86	0-50	7-27	1.20-1.40	4.00-42.00	0.13-0.18	0.0-2.9	0.5-4.0	.28	.37			
	8-25	20-80	0-53	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.2-0.9	.28	.28			
	25-33	20-90	0-53	0-40	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.2-0.3	.17	.24			
	>33	---	---	---	---	1.40-4.00	---	---	---	---	---			
LgC:														
Lily	0-1	0-0	---	---	0.05-0.20	42.00-141.00	---	---	52-86	---	---	2	---	56
	1-8	43-86	0-50	7-27	1.20-1.40	4.00-42.00	0.13-0.18	0.0-2.9	0.5-4.0	.28	.37			
	8-25	20-80	0-53	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.2-0.9	.28	.28			
	25-33	20-90	0-53	0-40	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.2-0.3	.17	.24			
	>33	---	---	---	---	1.40-4.00	---	---	---	---	---			
LhE:														
Lily	0-1	0-0	---	---	0.05-0.20	42.00-141.00	---	---	52-86	---	---	2	---	56
	1-8	43-86	0-50	7-27	1.20-1.40	4.00-42.00	0.13-0.18	0.0-2.9	0.5-4.0	.28	.37			
	8-25	20-80	0-53	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.2-0.9	.28	.28			
	25-33	20-90	0-53	0-40	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.2-0.3	.17	.24			
	>33	---	---	---	---	1.40-4.00	---	---	---	---	---			
Lo:														
Lobdell	0-10	0-50	50-88	0-27	1.20-1.40	4.00-14.00	0.20-0.24	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	10-28	0-85	0-88	0-27	1.25-1.60	4.00-14.00	0.17-0.22	0.0-2.9	0.4-0.8	.37	.43			
	28-65	0-85	0-88	0-27	1.20-1.60	4.00-42.00	0.12-0.18	0.0-2.9	0.3-0.6	.37	.43			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
MaB:														
Macove	0-1	---	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	56
	1-5	23-85	0-50	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.20	.28			
	5-15	0-52	28-88	0-27	1.20-1.50	14.00-42.00	0.08-0.14	0.0-2.9	0.5-1.0	.20	.32			
	15-65	2-52	28-88	0-40	1.20-1.80	14.00-42.00	0.08-0.12	0.0-2.9	0.0-0.5	.20	.32			
MaC:														
Macove	0-1	---	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	56
	1-5	23-85	0-50	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.20	.28			
	5-15	0-52	28-88	0-27	1.20-1.50	14.00-42.00	0.08-0.14	0.0-2.9	0.5-1.0	.20	.32			
	15-65	2-52	28-88	0-40	1.20-1.80	14.00-42.00	0.08-0.12	0.0-2.9	0.0-0.5	.20	.32			
MaD:														
Macove	0-1	---	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	56
	1-5	23-85	0-50	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.20	.28			
	5-15	0-52	28-88	0-27	1.20-1.50	14.00-42.00	0.08-0.14	0.0-2.9	0.5-1.0	.20	.32			
	15-65	2-52	28-88	0-40	1.20-1.80	14.00-42.00	0.08-0.12	0.0-2.9	0.0-0.5	.20	.32			
McC:														
Macove	0-1	---	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	---
	1-5	23-85	0-50	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.20	.28			
	5-15	0-52	28-88	0-27	1.20-1.50	14.00-42.00	0.08-0.14	0.0-2.9	0.5-1.0	.20	.32			
	15-65	2-52	28-88	0-40	1.20-1.80	14.00-42.00	0.08-0.12	0.0-2.9	0.0-0.5	.20	.32			
McE:														
Macove	0-1	---	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	---
	1-5	23-85	0-50	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.20	.28			
	5-15	0-52	28-88	0-27	1.20-1.50	14.00-42.00	0.08-0.14	0.0-2.9	0.5-1.0	.20	.32			
	15-65	2-52	28-88	0-40	1.20-1.80	14.00-42.00	0.08-0.12	0.0-2.9	0.0-0.5	.20	.32			
MeF:														
Macove	0-1	---	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	4	8	0
	1-5	23-85	0-50	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.20	.28			
	5-15	0-52	28-88	0-27	1.20-1.50	14.00-42.00	0.08-0.14	0.0-2.9	0.5-1.0	.20	.32			
	15-65	2-52	28-88	0-40	1.20-1.80	14.00-42.00	0.08-0.12	0.0-2.9	0.0-0.5	.20	.32			
Gilpin	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	43-85	---	---	0.15-0.35	42.00-141.00	0.15-0.45	---	35-70	---	---			
	2-3	0-50	50-83	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-18	.32	.32			
	3-24	0-52	28-87	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-1.2	.24	.28			
	24-36	0-52	28-87	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-1.2	.24	.32			
	36-37	---	---	---	---	0.00-1.40	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
MkC:														
Mandy	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-6	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-20	.24	.32			
	6-29	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-2.2	.17	.24			
	29-37	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-1.0	.17	.24			
	37-38	---	---	---	---	0.00-1.40	---	---	---	---	---			
MkE:														
Mandy	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-6	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-20	.24	.32			
	6-29	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-2.2	.17	.24			
	29-37	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-1.0	.17	.24			
	37-38	---	---	---	---	0.00-1.40	---	---	---	---	---			
MkF:														
Mandy	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-6	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-20	.24	.32			
	6-29	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-2.2	.17	.24			
	29-37	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-1.0	.17	.24			
	37-38	---	---	---	---	0.00-1.40	---	---	---	---	---			
MkG:														
Mandy	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-6	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.5-20	.24	.32			
	6-29	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-2.2	.17	.24			
	29-37	0-52	28-88	0-27	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.6-1.0	.17	.24			
	37-38	---	---	---	---	0.00-1.40	---	---	---	---	---			
Ml:														
Melvin	0-10	0-50	50-83	12-17	1.20-1.60	4.00-14.00	0.18-0.23	0.0-2.9	0.5-3.0	.43	.43	5	---	56
	10-58	0-50	50-83	12-35	1.30-1.60	4.00-14.00	0.18-0.23	0.0-2.9	0.5-2.0	.43	.43			
	58-65	0-85	0-50	7-35	1.40-1.70	4.00-14.00	0.16-0.23	0.0-2.9	0.2-1.5	.43	.43			
Lindside	0-9	0-50	50-83	15-27	0.80-1.40	4.00-14.00	0.20-0.26	0.0-2.9	2.0-4.0	.32	.32	5	---	---
	9-60	0-85	0-73	18-35	1.20-1.40	1.40-14.00	0.17-0.22	0.0-2.9	0.5-0.9	.37	.37			
	60-65	20-85	0-73	0-35	1.20-1.40	1.40-42.00	0.12-0.18	0.0-2.9	0.3-0.8	.32	.32			
MzC:														
Mertz	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	4	---	---
	1-2	0-50	---	---	0.10-0.20	2.00-141.00	0.03-0.08	---	48-84	---	---			
	2-5	0-50	50-83	10-25	1.20-1.40	4.00-14.00	0.10-0.15	0.0-2.9	2.0-5.0	.28	.32			
	5-56	0-50	31-83	20-40	1.40-1.60	1.40-4.00	0.07-0.12	0.0-2.9	0.0-0.5	.17	.20			
	56-65	0-50	50-83	20-40	1.40-1.60	1.40-4.00	0.07-0.12	0.0-2.9	0.0-0.5	.17	.24			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
MzE:														
Mertz	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	4	---	---
	1-2	0-50	---	---	0.10-0.20	2.00-141.00	0.03-0.08	---	48-84	---	---			
	2-5	0-50	50-83	10-25	1.20-1.40	4.00-14.00	0.10-0.15	0.0-2.9	2.0-5.0	.28	.32			
	5-56	0-50	31-83	20-40	1.40-1.60	1.40-4.00	0.07-0.12	0.0-2.9	0.0-0.5	.17	.20			
	56-65	0-50	50-83	20-40	1.40-1.60	1.40-4.00	0.07-0.12	0.0-2.9	0.0-0.5	.17	.24			
No:														
Nolin	0-5	0-52	28-83	10-25	1.20-1.40	4.00-14.00	0.14-0.18	0.0-2.9	2.0-4.0	.37	.37	5	---	56
	5-65	0-50	50-83	18-35	1.25-1.50	4.00-14.00	0.18-0.23	0.0-2.9	0.3-2.0	.43	.43			
Ph:														
Philo	0-8	0-50	50-88	0-27	1.20-1.80	4.00-14.00	0.14-0.20	0.0-2.9	2.0-4.0	.37	.37	5	---	---
	8-38	0-52	28-88	0-27	1.20-1.80	4.00-14.00	0.10-0.20	0.0-2.9	0.0-1.0	.32	.32			
	38-65	0-100	0-88	0-27	1.20-2.00	42.00-141.00	0.03-0.06	0.0-2.9	0.0-0.5	.17	.20			
Po:														
Pope	0-10	43-85	0-50	5-15	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	1.0-4.0	.28	.28	5	---	86
	10-40	43-85	0-50	5-18	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.4-1.2	.28	.28			
	40-65	0-100	0-100	5-20	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.2-2.0	.28	.20			
Pt:														
Potomac	0-6	43-85	0-50	0-20	1.20-1.40	4.00-42.00	0.10-0.14	0.0-2.9	0.5-4.0	.24	.24	3	3	86
	6-65	43-100	0-90	0-20	1.30-1.60	42.00-141.00	0.03-0.06	0.0-2.9	0.2-1.0	.17	.24			
PuA:														
Purdy	0-8	0-50	50-88	0-27	1.30-1.50	1.40-4.00	0.18-0.24	3.0-5.9	1.0-4.0	.43	.43	3	---	---
	8-30	0-45	15-73	27-100	1.30-1.60	0.42-1.40	0.12-0.18	3.0-5.9	0.1-0.3	.32	.32			
	30-65	0-20	30-70	27-60	1.30-1.60	0.42-1.40	0.10-0.16	3.0-5.9	0.1-0.2	.32	.32			
Qu:														
Quarry	0-10	---	---	---	---	---	---	---	---	---	---	--	---	0
Se:														
Sensabaugh	0-6	23-52	28-50	7-27	1.25-1.40	4.00-42.00	0.12-0.18	0.0-2.9	1.0-4.0	.24	.24	5	---	---
	6-25	0-52	28-88	0-27	1.30-1.50	4.00-42.00	0.10-0.16	0.0-2.9	0.5-3.0	.20	.24			
	25-33	0-80	0-88	0-40	1.30-1.50	4.00-42.00	0.10-0.15	0.0-2.9	0.2-2.0	.17	.24			
	33-65	0-80	0-88	0-40	1.25-1.50	4.00-42.00	0.08-0.14	0.0-2.9	0.2-2.0	.17	.20			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
SfB:														
Shouns	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.13-0.20	0.0-2.9	1.0-10	.32	.32			
	4-8	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-3.5	.28	.28			
	8-54	0-50	15-88	0-40	1.40-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-1.0	.28	.28			
	54-65	0-45	15-73	27-40	1.40-1.60	4.00-14.00	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			
SfC:														
Shouns	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.13-0.20	0.0-2.9	1.0-10	.32	.32			
	4-8	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-3.5	.28	.28			
	8-54	0-50	15-88	0-40	1.40-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-1.0	.28	.28			
	54-65	0-45	15-73	27-40	1.40-1.60	4.00-14.00	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			
ShC:														
Shouns	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.13-0.20	0.0-2.9	1.0-10	.32	.32			
	4-8	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-3.5	.28	.28			
	8-54	0-50	15-88	0-40	1.40-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-1.0	.28	.28			
	54-65	0-45	15-73	27-40	1.40-1.60	4.00-14.00	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			
ShE:														
Shouns	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.13-0.20	0.0-2.9	1.0-10	.32	.32			
	4-8	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-3.5	.28	.28			
	8-54	0-50	15-88	0-40	1.40-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-1.0	.28	.28			
	54-65	0-45	15-73	27-40	1.40-1.60	4.00-14.00	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			
ShF:														
Shouns	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.13-0.20	0.0-2.9	1.0-10	.32	.32			
	4-8	0-50	50-88	0-27	1.35-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-3.5	.28	.28			
	8-54	0-50	15-88	0-40	1.40-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-1.0	.28	.28			
	54-65	0-45	15-73	27-40	1.40-1.60	4.00-14.00	0.09-0.15	0.0-2.9	0.0-0.5	.28	.28			
SmC:														
Simoda	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.10-0.14	0.0-2.9	1.0-4.0	.17	.32			
	4-29	0-52	28-88	0-40	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-1.0	.24	.28			
	29-40	0-85	0-88	0-40	1.40-1.70	0.42-1.40	0.08-0.12	0.0-2.9	0.1-0.7	.24	.28			
	40-48	0-52	28-88	0-40	1.20-1.50	1.40-4.00	0.08-0.12	0.0-2.9	0.1-0.5	.24	.28			
	>48	---	---	---	---	0.00-1.40	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
SoC:														
Snowdog	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	1.0-80	.20	.28			
	4-18	0-52	28-88	0-27	1.20-1.80	4.00-14.00	0.12-0.16	0.0-2.9	0.5-18	.24	.28			
	18-42	23-85	0-50	0-27	1.40-2.00	0.42-4.00	0.08-0.12	0.0-2.9	0.4-1.5	.24	.32			
	42-67	0-85	0-88	0-27	1.20-2.00	4.00-42.00	0.08-0.12	0.0-2.9	0.4-1.5	.17	.24			
SoE:														
Snowdog	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	1.0-80	.20	.28			
	4-18	0-52	28-88	0-27	1.20-1.80	4.00-14.00	0.12-0.16	0.0-2.9	0.5-18	.24	.28			
	18-42	23-85	0-50	0-27	1.40-2.00	0.42-4.00	0.08-0.12	0.0-2.9	0.4-1.5	.24	.32			
	42-67	0-85	0-88	0-27	1.20-2.00	4.00-42.00	0.08-0.12	0.0-2.9	0.4-1.5	.17	.24			
SoF:														
Snowdog	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	0-50	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	49-84	---	---			
	2-4	0-50	50-88	0-27	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	1.0-80	.20	.28			
	4-18	0-52	28-88	0-27	1.20-1.80	4.00-14.00	0.12-0.16	0.0-2.9	0.5-18	.24	.28			
	18-42	23-85	0-50	0-27	1.40-2.00	0.42-4.00	0.08-0.12	0.0-2.9	0.4-1.5	.24	.32			
	42-67	0-85	0-88	0-27	1.20-2.00	4.00-42.00	0.08-0.12	0.0-2.9	0.4-1.5	.17	.24			
SvC:														
Summers	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	3	---	---
	1-2	23-85	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	48-84	---	---			
	2-3	23-85	0-50	10-20	0.15-0.35	42.00-141.00	0.15-0.45	---	35-70	---	---			
	3-13	23-85	0-50	10-20	1.20-1.40	14.00-141.00	0.09-0.14	0.0-2.9	2.0-10	.20	.24			
	13-28	23-85	0-50	8-18	1.20-1.50	14.00-42.00	0.09-0.14	0.0-2.9	0.2-1.5	.20	.28			
	28-30	23-85	0-50	7-15	1.20-1.50	14.00-42.00	0.06-0.10	0.0-2.9	0.1-1.0	.20	.32			
	>30	---	---	---	---	1.40-4.00	---	---	---	---	---			
Tp:														
Tioga	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	5	---	56
	1-8	43-85	0-50	0-20	1.15-1.40	4.00-42.00	0.15-0.21	0.0-2.9	2.0-6.0	.37	.37			
	8-29	---	---	0-20	1.15-1.45	4.00-42.00	0.07-0.20	0.0-2.9	0.0-1.0	.28	.32			
	29-65	---	---	0-20	1.25-1.55	4.00-141.00	0.02-0.20	0.0-2.9	0.0-1.0	.28	.32			
Potomac	0-6	43-85	0-50	0-20	1.20-1.40	4.00-42.00	0.10-0.14	0.0-2.9	0.5-4.0	.24	.24	3	3	86
	6-65	43-100	0-90	0-20	1.30-1.60	42.00-141.00	0.03-0.06	0.0-2.9	0.2-1.0	.17	.24			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
TrC:														
Trussel	0-2	---	---	---	0.10-0.20	42.00-141.00	0.03-0.08	---	52-86	---	---	4	---	---
	2-8	---	---	7-25	1.20-1.50	4.00-14.00	0.10-0.17	0.0-2.9	1.0-16	.20	.24			
	8-20	---	---	18-35	1.30-1.50	4.00-14.00	0.09-0.17	0.0-2.9	1.0-8.0	.28	.28			
	20-37	---	---	18-27	1.40-1.70	0.42-4.00	0.09-0.13	0.0-2.9	0.5-4.0	.24	.28			
	37-65	---	---	18-27	1.30-1.60	4.00-14.00	0.10-0.14	0.0-2.9	0.5-4.0	.24	.28			
Uf:														
Udifluvents	---	---	---	---	---	---	---	---	---	---	---	--	---	---
Fluvaquents	---	---	---	---	---	---	---	---	---	---	---	--	---	---
Ux:														
Udorthents	---	---	---	---	---	---	---	---	---	---	---	--	---	---
Rock outcrop	0-10	---	---	---	---	---	---	---	---	---	---	--	---	0
WeC:														
Weikert	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	48
	1-7	0-52	28-88	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	1.0-5.0	.28	.32			
	7-16	0-52	28-88	0-27	1.20-1.80	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.9	.28	.37			
	>16	---	---	---	---	4.00-141.00	---	---	---	---	---			
WeD:														
Weikert	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	48
	1-7	0-52	28-88	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	1.0-5.0	.28	.32			
	7-16	0-52	28-88	0-27	1.20-1.80	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.9	.28	.37			
	>16	---	---	---	---	4.00-141.00	---	---	---	---	---			
WeF:														
Weikert	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	---	48
	1-7	0-52	28-88	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	1.0-5.0	.28	.32			
	7-16	0-52	28-88	0-27	1.20-1.80	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.9	.28	.37			
	>16	---	---	---	---	4.00-141.00	---	---	---	---	---			
WrG:														
Weikert	0-1	0-0	---	---	0.05-0.20	42.00-141.00	0.00-0.03	---	52-86	---	---	2	8	0
	1-7	0-52	28-88	0-27	1.00-1.40	14.00-42.00	0.08-0.14	0.0-2.9	1.0-5.0	.28	.32			
	7-16	0-52	28-88	0-27	1.20-1.80	14.00-42.00	0.04-0.08	0.0-2.9	0.2-0.9	.28	.37			
	>16	---	---	---	---	4.00-141.00	---	---	---	---	---			

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
WrG:														
Berks----------	0-1	0-0	---	---	0.02-0.20	42.00-141.00	0.55-0.65	---	30-50	---	---	3	---	---
	1-3	---	---	7-27	0.80-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-16	.17	.32			
	3-6	---	---	7-27	0.90-1.50	4.00-42.00	0.08-0.12	0.0-2.9	2.0-5.0	.17	.32			
	6-12	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.2-2.0	.17	.24			
	12-23	---	---	5-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	23-30	---	---	5-32	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.5	.17	.24			
	30-33	---	---	---	---	1.40-14.00	---	---	---	---	---			
Rough----------	0-2	0-50	50-88	0-27	1.20-1.40	14.00-141.00	0.04-0.10	0.0-2.9	0.5-2.0	.20	.28	1	---	---
	2-4	0-50	28-88	0-27	1.20-1.40	14.00-141.00	0.04-0.09	0.0-2.9	0.0-1.0	.15	.20			
	4-7	0-50	28-88	0-27	1.20-1.40	14.00-141.00	0.02-0.09	0.0-2.9	0.0-0.5	.10	.20			
	>7	---	---	---	---	0.00-1.40	---	---	---	---	---			
ZoA:														
Zoar----------	0-9	0-50	50-88	0-27	1.20-1.40	4.00-14.00	0.15-0.18	0.0-2.9	1.0-5.0	.43	.43	3	---	---
	9-43	0-20	40-73	7-40	1.30-1.60	0.42-4.00	0.12-0.15	3.0-5.9	0.5-1.2	.32	.32			
	43-65	0-45	15-73	27-100	1.40-1.70	0.42-1.40	0.08-0.12	3.0-5.9	0.1-0.4	.32	.32			

Table 18.--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
	Inches	meq/100 g	meq/100 g	pH
AlB:				
Allegheny	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	60-160	20-80	3.5-4.7
	3-10	---	1.1-5.1	3.6-5.5
	10-49	---	0.0-8.1	3.6-5.5
	49-65	---	0.0-8.1	3.6-5.5
AlC:				
Allegheny	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	60-160	20-80	3.5-4.7
	3-10	---	1.1-5.1	3.6-5.5
	10-49	---	0.0-8.1	3.6-5.5
	49-65	---	0.0-8.1	3.6-5.5
An:				
Atkins	0-4	---	4.1-6.9	4.5-5.5
	4-29	---	4.6-11	4.5-5.5
	29-65	---	2.7-12	4.5-5.5
Philo	0-8	9.0-18	5.0-14	4.5-6.0
	8-38	9.0-18	0.0-8.0	4.5-6.0
	38-65	3.0-15	0.0-7.0	4.5-6.0
Potomac	0-6	4.0-10	2.0-7.0	5.1-7.8
	6-65	2.0-6.0	0.5-4.0	5.1-7.8
BaE:				
Belmont	0-2	60-125	60-94	3.6-4.5
	2-5	0.0-15	---	5.1-6.5
	5-8	0.0-15	---	5.1-6.5
	8-14	0.0-21	---	5.1-6.5
	14-25	0.0-21	---	5.1-6.5
	25-37	14-31	---	5.6-7.3
	37-53	11-31	---	5.6-7.8
	>53	---	---	---
BcC:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
BcE:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
BcF:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
BkG:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
Weikert	0-1	45-125	5.0-60	3.8-4.7
	1-7	12-19	5.0-20	4.5-5.5
	7-16	7.0-15	3.0-15	3.6-5.5
	>16	---	---	---
Calvin	0-1	40-125	5.0-60	3.8-4.7
	1-5	16-23	2.2-7.1	4.5-6.0
	5-28	9.0-13	4.6-15	4.5-6.0
	28-40	7.0-11	4.6-15	4.5-6.0
	40-44	---	---	---
BlC:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
BlE:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
BlE:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
BlF:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
BrE:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
Weikert	0-1	45-125	5.0-60	3.8-4.7
	1-7	12-19	5.0-20	4.5-5.5
	7-16	7.0-15	3.0-15	3.6-5.5
	>16	---	---	---
BrF:				
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
Weikert	0-1	45-125	5.0-60	3.8-4.7
	1-7	12-19	5.0-20	4.5-5.5
	7-16	7.0-15	3.0-15	3.6-5.5
	>16	---	---	---
BtC:				
Blackthorn	0-1	40-125	5.0-60	3.8-4.7
	1-6	---	1.1-4.9	4.5-6.0
	6-44	---	1.2-8.0	4.5-6.0
	44-65	---	5.3-13	4.5-5.5

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
BtE:				
Blackthorn	0-1	40-125	5.0-60	3.8-4.7
	1-6	---	1.1-4.9	4.5-6.0
	6-44	---	1.2-8.0	4.5-6.0
	44-65	---	5.3-13	4.5-5.5
BxF:				
Briery	0-2	9.1-15	---	5.1-7.8
	2-65	9.1-17	---	5.1-7.8
Rock outcrop	0-10	---	---	---
CbC:				
Calvin	0-1	40-125	5.0-60	3.8-4.7
	1-5	16-23	2.2-7.1	4.5-6.0
	5-28	9.0-13	4.6-15	4.5-6.0
	28-40	7.0-11	4.6-15	4.5-6.0
	40-44	---	---	---
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
CbE:				
Calvin	0-1	40-125	5.0-60	3.8-4.7
	1-5	16-23	2.2-7.1	4.5-6.0
	5-28	9.0-13	4.6-15	4.5-6.0
	28-40	7.0-11	4.6-15	4.5-6.0
	40-44	---	---	---
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
CbF:				
Calvin	0-1	40-125	5.0-60	3.8-4.7
	1-5	16-23	2.2-7.1	4.5-6.0
	5-28	9.0-13	4.6-15	4.5-6.0
	28-40	7.0-11	4.6-15	4.5-6.0
	40-44	---	---	---
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
CeF:				
Caneyville	0-3	15-20	---	5.1-7.3
	3-10	15-25	---	5.1-7.3
	10-24	18-30	---	5.6-7.8
	>24	---	---	---
Frederick	0-8	12-30	10-16	4.5-6.5
	8-29	8.0-16	6.0-15	4.5-7.3
	29-80	7.0-18	6.0-15	4.5-7.3
Rock outcrop	0-10	---	---	---
CfB:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---
CfC:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---
CfD:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
CfE:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---
CfF:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---
CgC:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---
CgE:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---
CgF:				
Cateache	0-1	40-125	5.0-60	3.8-4.7
	1-5	12-28	7.5-13	4.5-6.0
	5-29	8.2-14	4.4-7.5	4.5-6.0
	29-36	7.5-13	4.4-7.5	5.1-6.0
	36-37	---	---	---
Ch:				
Chavies	0-10	5.0-16	3.0-14	4.5-7.3
	10-54	3.0-14	2.0-12	4.5-7.3
	54-65	0.5-8.0	0.5-8.0	4.5-6.0
CpB:				
Cookport	0-1	45-135	10-75	3.8-4.6
	1-9	8.0-25	3.0-12	4.5-5.5
	9-22	4.0-10	2.0-5.0	3.6-5.5
	22-42	3.0-8.0	2.0-5.0	3.6-5.5
	42-49	3.0-8.0	2.0-5.0	3.6-5.5
	>49	---	---	---
CuB:				
Culleoka	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	0.0-15	0.0-8.6	5.1-6.0
	3-29	0.0-21	0.0-8.2	5.1-6.0
	29-35	0.0-21	0.0-8.2	5.1-6.5
	35-40	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
CuC:				
Culleoka	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	0.0-15	0.0-8.6	5.1-6.0
	3-29	0.0-21	0.0-8.2	5.1-6.0
	29-35	0.0-21	0.0-8.2	5.1-6.5
	35-40	---	---	---
CuD:				
Culleoka	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	0.0-15	0.0-8.6	5.1-6.0
	3-29	0.0-21	0.0-8.2	5.1-6.0
	29-35	0.0-21	0.0-8.2	5.1-6.5
	35-40	---	---	---
CyE:				
Culleoka	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	0.0-15	0.0-8.6	5.1-6.0
	3-29	0.0-21	0.0-8.2	5.1-6.0
	29-35	0.0-21	0.0-8.2	5.1-6.5
	35-40	---	---	---
CyF:				
Culleoka	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	0.0-15	0.0-8.6	5.1-6.0
	3-29	0.0-21	0.0-8.2	5.1-6.0
	29-35	0.0-21	0.0-8.2	5.1-6.5
	35-40	---	---	---
DeC:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
DeE:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
DeF:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
DhC:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
Hazleton	0-1	40-125	5.0-65	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	13-22	5.0-12	3.6-5.5
	3-32	5.0-9.0	2.0-5.0	3.6-5.5
	32-52	5.0-9.0	2.0-5.0	3.6-5.5
	>52	---	---	---
DhE:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
Hazleton	0-1	40-125	5.0-65	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	13-22	5.0-12	3.6-5.5
	3-32	5.0-9.0	2.0-5.0	3.6-5.5
	32-52	5.0-9.0	2.0-5.0	3.6-5.5
	>52	---	---	---
DhF:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
Hazleton	0-1	40-125	5.0-65	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	13-22	5.0-12	3.6-5.5
	3-32	5.0-9.0	2.0-5.0	3.6-5.5
	32-52	5.0-9.0	2.0-5.0	3.6-5.5
	>52	---	---	---
DkF:				
Dekalb	0-1	80-125	60-94	3.6-4.5
	1-2	9.0-18	3.0-18	3.6-6.5
	2-4	9.0-18	3.0-18	3.6-6.5
	4-8	9.0-18	3.0-18	3.6-6.5
	8-15	3.0-7.0	1.0-10	3.6-5.5
	15-23	3.0-7.0	1.0-10	3.6-5.5
	23-34	3.0-8.0	2.0-10	3.6-5.5
	>34	---	---	---
Rock outcrop	0-10	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
Du:				
Dunning	0-20	6.5-22	6.0-22	5.6-7.8
	20-65	19-32	19-32	5.6-7.8
ElF:				
Elliber	0-2	40-125	5.0-60	3.8-4.7
	2-12	2.6-4.4	0.0-5.1	3.6-5.5
	12-67	3.8-6.1	0.0-7.9	3.6-5.5
ErB:				
Ernest	0-2	40-125	5.0-60	3.7-4.7
	2-3	45-135	10-75	3.8-4.6
	3-10	15-25	8.5-11	4.5-6.0
	10-28	6.0-15	10-18	4.5-5.5
	28-44	4.0-14	9.2-16	4.5-5.5
	44-62	4.0-14	0.1-18	4.5-5.5
EsC:				
Ernest	0-2	40-125	5.0-60	3.7-4.7
	2-3	45-135	10-75	3.8-4.6
	3-10	15-25	8.5-11	4.5-6.0
	10-28	6.0-15	10-18	4.5-5.5
	28-44	4.0-14	9.2-16	4.5-5.5
	44-62	4.0-14	0.1-18	4.5-5.5
FaE:				
Faywood	0-8	0.0-15	0.0-8.2	5.1-7.8
	8-28	14-53	0.0-18	5.1-7.8
	28-32	---	---	---
FaF:				
Faywood	0-8	0.0-15	0.0-8.2	5.1-7.8
	8-28	14-53	0.0-18	5.1-7.8
	28-32	---	---	---
FkB:				
Frankstown	0-4	15-40	10-15	5.1-6.0
	4-35	10-20	6.0-10	4.5-6.0
	35-45	10-20	6.0-10	4.5-6.0
	45-46	---	---	---
FkC:				
Frankstown	0-4	15-40	10-15	5.1-6.0
	4-35	10-20	6.0-10	4.5-6.0
	35-45	10-20	6.0-10	4.5-6.0
	45-46	---	---	---
FkD:				
Frankstown	0-4	15-40	10-15	5.1-6.0
	4-35	10-20	6.0-10	4.5-6.0
	35-45	10-20	6.0-10	4.5-6.0
	45-46	---	---	---
FoC:				
Frankstown	0-4	15-40	10-15	5.1-6.0
	4-35	10-20	6.0-10	4.5-6.0
	35-45	10-20	6.0-10	4.5-6.0
	45-46	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
FoE:				
Frankstown	0-4	15-40	10-15	5.1-6.0
	4-35	10-20	6.0-10	4.5-6.0
	35-45	10-20	6.0-10	4.5-6.0
	45-46	---	---	---
FrB:				
Frederick	0-8	12-30	10-16	4.5-6.5
	8-29	8.0-16	6.0-15	4.5-7.3
	29-80	7.0-18	6.0-15	4.5-7.3
FrC:				
Frederick	0-8	12-30	10-16	4.5-6.5
	8-29	8.0-16	6.0-15	4.5-7.3
	29-80	7.0-18	6.0-15	4.5-7.3
FrD:				
Frederick	0-8	12-30	10-16	4.5-6.5
	8-29	8.0-16	6.0-15	4.5-7.3
	29-80	7.0-18	6.0-15	4.5-7.3
FyC:				
Frederick	0-8	12-30	10-16	4.5-6.5
	8-29	8.0-16	6.0-15	4.5-7.3
	29-80	7.0-18	6.0-15	4.5-7.3
Caneyville	0-3	15-20	---	5.1-7.3
	3-10	15-25	---	5.1-7.3
	10-24	18-30	---	5.6-7.8
	>24	---	---	---
FyE:				
Frederick	0-8	12-30	10-16	4.5-6.5
	8-29	8.0-16	6.0-15	4.5-7.3
	29-80	7.0-18	6.0-15	4.5-7.3
Caneyville	0-3	15-20	---	5.1-7.3
	3-10	15-25	---	5.1-7.3
	10-24	18-30	---	5.6-7.8
	>24	---	---	---
GaC:				
Gauley	0-3	40-125	5.0-60	3.7-4.7
	3-6	60-160	20-80	3.5-4.7
	6-8	15-30	2.0-5.4	3.6-5.5
	8-26	2.5-10	1.3-3.5	3.6-5.5
	26-38	2.0-9.0	1.3-3.5	3.6-5.5
	>38	---	---	---
GaE:				
Gauley	0-3	40-125	5.0-60	3.7-4.7
	3-6	60-160	20-80	3.5-4.7
	6-8	15-30	2.0-5.4	3.6-5.5
	8-26	2.5-10	1.3-3.5	3.6-5.5
	26-38	2.0-9.0	1.3-3.5	3.6-5.5
	>38	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
GnC:				
Gilpin	0-1	40-125	5.0-60	3.7-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	15-40	3.0-15	3.6-5.5
	3-24	3.0-12	3.0-9.0	3.6-5.5
	24-36	3.0-14	3.0-9.0	3.6-5.5
	36-37	---	---	---
GnD:				
Gilpin	0-1	40-125	5.0-60	3.7-4.7
	1-2	60-160	20-80	3.5-4.7
	2-3	15-40	3.0-15	3.6-5.5
	3-24	3.0-12	3.0-9.0	3.6-5.5
	24-36	3.0-14	3.0-9.0	3.6-5.5
	36-37	---	---	---
GpC:				
Gilpin	0-1	40-125	5.0-60	3.7-4.7
	1-2	60-160	20-80	3.5-4.7
	2-3	15-40	3.0-15	3.6-5.5
	3-24	3.0-12	3.0-9.0	3.6-5.5
	24-36	3.0-14	3.0-9.0	3.6-5.5
	36-37	---	---	---
GpE:				
Gilpin	0-1	40-125	5.0-60	3.7-4.7
	1-2	60-160	20-80	3.5-4.7
	2-3	15-40	3.0-15	3.6-5.5
	3-24	3.0-12	3.0-9.0	3.6-5.5
	24-36	3.0-14	3.0-9.0	3.6-5.5
	36-37	---	---	---
Ho:				
Holly	0-4	6.5-11	4.3-7.3	5.6-7.3
	4-42	5.4-9.5	4.1-7.1	5.1-7.3
	42-65	6.0-11	5.2-8.7	5.6-7.8
KxF:				
Kaymine	0-13	4.0-11	3.0-8.0	5.6-7.8
	13-65	2.0-10	1.0-7.0	5.6-7.8
Rock outcrop	0-10	---	---	---
LcC:				
Leatherbark	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-7	75-130	41-75	3.6-5.5
	7-37	8.0-24	5.0-28	3.6-5.5
	37-40	4.0-14	3.0-12	3.6-5.5
	40-41	---	---	---
LgB:				
Lily	0-1	---	---	3.8-4.7
	1-8	2.9-16	2.2-12	3.6-5.5
	8-25	5.1-12	3.8-9.1	3.6-5.5
	25-33	5.4-9.3	4.0-7.0	3.6-5.5
	>33	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
LgC:				
Lily	0-1	---	---	3.8-4.7
	1-8	2.9-16	2.2-12	3.6-5.5
	8-25	5.1-12	3.8-9.1	3.6-5.5
	25-33	5.4-9.3	4.0-7.0	3.6-5.5
	>33	---	---	---
LhE:				
Lily	0-1	---	---	3.8-4.7
	1-8	2.9-16	2.2-12	3.6-5.5
	8-25	5.1-12	3.8-9.1	3.6-5.5
	25-33	5.4-9.3	4.0-7.0	3.6-5.5
	>33	---	---	---
Lo:				
Lobdell	0-10	7.2-13	3.8-6.5	5.1-7.3
	10-28	6.5-12	4.0-7.5	5.1-7.3
	28-65	7.0-12	5.6-8.5	5.6-7.3
MaB:				
Macove	0-1	40-125	5.0-60	3.8-4.7
	1-5	15-27	4.0-19	4.5-6.0
	5-15	7.0-13	7.0-12	4.5-6.0
	15-65	7.0-12	8.0-14	4.5-6.0
MaC:				
Macove	0-1	40-125	5.0-60	3.8-4.7
	1-5	15-27	4.0-19	4.5-6.0
	5-15	7.0-13	7.0-12	4.5-6.0
	15-65	7.0-12	8.0-14	4.5-6.0
MaD:				
Macove	0-1	40-125	5.0-60	3.8-4.7
	1-5	15-27	4.0-19	4.5-6.0
	5-15	7.0-13	7.0-12	4.5-6.0
	15-65	7.0-12	8.0-14	4.5-6.0
McC:				
Macove	0-1	40-125	5.0-60	3.8-4.7
	1-5	15-27	4.0-19	4.5-6.0
	5-15	7.0-13	7.0-12	4.5-6.0
	15-65	7.0-12	8.0-14	4.5-6.0
McE:				
Macove	0-1	40-125	5.0-60	3.8-4.7
	1-5	15-27	4.0-19	4.5-6.0
	5-15	7.0-13	7.0-12	4.5-6.0
	15-65	7.0-12	8.0-14	4.5-6.0
MeF:				
Macove	0-1	40-125	5.0-60	3.8-4.7
	1-5	15-27	4.0-19	4.5-6.0
	5-15	7.0-13	7.0-12	4.5-6.0
	15-65	7.0-12	8.0-14	4.5-6.0
Gilpin	0-1	40-125	5.0-60	3.7-4.7
	1-2	60-160	20-80	3.5-4.7
	2-3	15-40	3.0-15	3.6-5.5
	3-24	3.0-12	3.0-9.0	3.6-5.5
	24-36	3.0-14	3.0-9.0	3.6-5.5
	36-37	---	---	---

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
MkC:				
Mandy	0-1	40-125	5.0-60	3.8-4.7
	1-6	15-80	9.0-13	3.6-5.5
	6-29	8.0-15	5.0-9.0	3.6-5.5
	29-37	5.0-10	2.0-6.0	3.6-5.5
	37-38	---	---	---
MkE:				
Mandy	0-1	40-125	5.0-60	3.8-4.7
	1-6	15-80	9.0-13	3.6-5.5
	6-29	8.0-15	5.0-9.0	3.6-5.5
	29-37	5.0-10	2.0-6.0	3.6-5.5
	37-38	---	---	---
MkF:				
Mandy	0-1	40-125	5.0-60	3.8-4.7
	1-6	15-80	9.0-13	3.6-5.5
	6-29	8.0-15	5.0-9.0	3.6-5.5
	29-37	5.0-10	2.0-6.0	3.6-5.5
	37-38	---	---	---
MkG:				
Mandy	0-1	40-125	5.0-60	3.8-4.7
	1-6	15-80	9.0-13	3.6-5.5
	6-29	8.0-15	5.0-9.0	3.6-5.5
	29-37	5.0-10	2.0-6.0	3.6-5.5
	37-38	---	---	---
Ml:				
Melvin	0-10	6.0-15	---	5.6-7.8
	10-58	8.0-14	---	5.6-7.8
	58-65	8.0-14	---	5.6-7.8
Lindside	0-9	8.0-20	6.0-12	5.1-7.8
	9-60	10-16	8.0-14	5.1-7.8
	60-65	8.0-18	8.0-14	5.6-7.8
MzC:				
Mertz	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-125	10-75	3.8-4.6
	2-5	15-25	8.0-12	5.1-7.3
	5-56	8.0-15	7.0-14	5.1-6.0
	56-65	8.0-15	7.0-14	4.5-5.5
MzE:				
Mertz	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-125	10-75	3.8-4.6
	2-5	15-25	8.0-12	5.1-7.3
	5-56	8.0-15	7.0-14	5.1-6.0
	56-65	8.0-15	7.0-14	4.5-5.5
No:				
Nolin	0-5	6.0-15	---	5.6-8.4
	5-65	6.0-20	---	5.6-8.4
Ph:				
Philo	0-8	9.0-18	5.0-14	4.5-6.0
	8-38	9.0-18	0.0-8.0	4.5-6.0
	38-65	3.0-15	0.0-7.0	4.5-6.0

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
Po:				
Pope	0-10	6.0-20	4.0-11	3.6-5.5
	10-40	5.0-11	3.0-7.0	3.6-5.5
	40-65	4.0-12	3.0-7.0	3.6-5.5
Pt:				
Potomac	0-6	4.0-10	2.0-7.0	5.1-7.8
	6-65	2.0-6.0	0.5-4.0	5.1-7.8
PuA:				
Purdy	0-8	7.5-18	5.6-14	3.6-5.5
	8-30	12-22	9.4-16	3.6-5.5
	30-65	9.7-18	7.3-13	3.6-5.5
Qu:				
Quarry	0-10	---	---	---
Se:				
Sensabaugh	0-6	5.0-15	4.0-11	5.6-7.8
	6-25	6.0-11	5.0-8.0	5.6-7.8
	25-33	4.0-12	3.0-9.0	5.6-7.8
	33-65	3.0-10	2.0-7.0	5.6-7.8
SfB:				
Shouns	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-85	8.0-13	5.1-6.0
	4-8	9.0-15	4.0-8.5	5.1-6.0
	8-54	6.0-12	4.0-8.5	5.1-6.0
	54-65	6.0-12	4.0-8.5	5.1-6.0
SfC:				
Shouns	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-85	8.0-13	5.1-6.0
	4-8	9.0-15	4.0-8.5	5.1-6.0
	8-54	6.0-12	4.0-8.5	5.1-6.0
	54-65	6.0-12	4.0-8.5	5.1-6.0
ShC:				
Shouns	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-85	8.0-13	5.1-6.0
	4-8	9.0-15	4.0-8.5	5.1-6.0
	8-54	6.0-12	4.0-8.5	5.1-6.0
	54-65	6.0-12	4.0-8.5	5.1-6.0
ShE:				
Shouns	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-85	8.0-13	5.1-6.0
	4-8	9.0-15	4.0-8.5	5.1-6.0
	8-54	6.0-12	4.0-8.5	5.1-6.0
	54-65	6.0-12	4.0-8.5	5.1-6.0

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
ShF:				
Shouns	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-85	8.0-13	5.1-6.0
	4-8	9.0-15	4.0-8.5	5.1-6.0
	8-54	6.0-12	4.0-8.5	5.1-6.0
	54-65	6.0-12	4.0-8.5	5.1-6.0
SmC:				
Simoda	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	4.8-16	3.6-12	3.6-5.5
	4-29	5.6-11	4.2-8.2	3.6-5.5
	29-40	4.0-10	3.0-7.7	3.6-5.5
	40-48	4.7-9.9	3.5-7.4	3.6-5.5
	>48	---	---	---
SoC:				
Snowdog	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-95	10-70	3.6-5.5
	4-18	10-45	7.0-15	3.6-5.5
	18-42	2.0-16	1.5-8.0	3.6-5.5
	42-67	2.0-16	1.5-8.0	3.6-5.5
SoE:				
Snowdog	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-95	10-70	3.6-5.5
	4-18	10-45	7.0-15	3.6-5.5
	18-42	2.0-16	1.5-8.0	3.6-5.5
	42-67	2.0-16	1.5-8.0	3.6-5.5
SoF:				
Snowdog	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-4	15-95	10-70	3.6-5.5
	4-18	10-45	7.0-15	3.6-5.5
	18-42	2.0-16	1.5-8.0	3.6-5.5
	42-67	2.0-16	1.5-8.0	3.6-5.5
SvC:				
Summers	0-1	40-125	5.0-60	3.8-4.7
	1-2	45-135	10-75	3.8-4.6
	2-3	60-160	20-80	3.5-4.7
	3-13	10-25	3.5-24	4.5-5.5
	13-28	6.0-16	1.7-9.6	4.5-5.5
	28-30	2.0-9.0	1.5-9.0	4.5-5.5
	>30	---	---	---
Tp:				
Tioga	0-1	40-125	5.0-60	3.8-4.7
	1-8	12-28	---	5.1-7.3
	8-29	3.0-15	---	5.1-7.3
	29-65	3.0-15	---	5.6-7.8
Potomac	0-6	4.0-10	2.0-7.0	5.1-7.8
	6-65	2.0-6.0	0.5-4.0	5.1-7.8

Table 18.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
TrC:				
Trussel	0-2	45-135	10-75	3.8-4.6
	2-8	20-100	15-45	3.6-5.5
	8-20	8.0-20	2.0-20	3.6-5.5
	20-37	4.0-14	2.0-14	3.6-5.5
	37-65	4.0-14	2.0-14	3.6-5.5
Uf:				
Udifluvents	---	---	---	---
Fluvaquents	---	---	---	---
Ux:				
Udorthents	---	---	---	---
Rock outcrop	0-10	---	---	---
WeC:				
Weikert	0-1	45-125	5.0-60	3.8-4.7
	1-7	12-19	5.0-20	4.5-5.5
	7-16	7.0-15	3.0-15	3.6-5.5
	>16	---	---	---
WeD:				
Weikert	0-1	45-125	5.0-60	3.8-4.7
	1-7	12-19	5.0-20	4.5-5.5
	7-16	7.0-15	3.0-15	3.6-5.5
	>16	---	---	---
WeF:				
Weikert	0-1	45-125	5.0-60	3.8-4.7
	1-7	12-19	5.0-20	4.5-5.5
	7-16	7.0-15	3.0-15	3.6-5.5
	>16	---	---	---
WrG:				
Weikert	0-1	45-125	5.0-60	3.8-4.7
	1-7	12-19	5.0-20	4.5-5.5
	7-16	7.0-15	3.0-15	3.6-5.5
	>16	---	---	---
Berks	0-1	60-125	50-94	3.6-4.5
	1-3	---	---	3.6-6.5
	3-6	---	1.0-6.4	3.6-6.5
	6-12	---	1.1-12	3.6-6.5
	12-23	---	1.2-13	3.6-6.5
	23-30	---	1.2-13	3.6-6.5
	30-33	---	---	---
Rough	0-2	---	1.0-10	3.6-5.0
	2-4	---	1.0-10	3.6-5.0
	4-7	---	1.0-10	3.6-5.0
	>7	---	---	---
ZoA:				
Zoar	0-9	---	3.5-9.0	4.5-5.5
	9-43	---	3.5-16	4.5-5.5
	43-65	---	3.5-22	4.5-5.5

Table 19.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
AlB:										
Allegheny	B	Medium	Jan-Dec	---	---	---	---	None	---	---
AlC:										
Allegheny	B	Medium	Jan-Dec	---	---	---	---	None	---	---
An:										
Atkins	D	Very high								
			January	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			February	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			March	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			April	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			May	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			June	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			July	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Occasional
			September	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			October	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			November	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			December	0.0-1.0	>6.0	---	---	None	Brief	Frequent
Philo	B	Low								
			January	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			February	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			March	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			April	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			May	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Brief	Occasional
			December	1.5-3.0	>6.0	---	---	None	Brief	Occasional

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
An:										
Potomac	A	Very low								
			January	---	---	---	---	None	Brief	Frequent
			February	---	---	---	---	None	Brief	Frequent
			March	---	---	---	---	None	Brief	Frequent
			April	---	---	---	---	None	Brief	Frequent
			May	---	---	---	---	None	Brief	Frequent
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Occasional
			September	---	---	---	---	None	Brief	Occasional
			October	---	---	---	---	None	Brief	Occasional
			November	---	---	---	---	None	Brief	Frequent
			December	---	---	---	---	None	Brief	Frequent
BaE:										
Belmont	B	High	Jan-Dec	---	---	---	---	None	---	---
BcC:										
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	---
BcE:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
BcF:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
BkG:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
Weikert	C/D	Medium	Jan-Dec	---	---	---	---	None	---	---
Calvin	C	Medium	Jan-Dec	---	---	---	---	None	---	---
BlC:										
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	---
Dekalb	A	Low	Jan-Dec	---	---	---	---	None	---	---
BlE:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
Dekalb	A	Medium	Jan-Dec	---	---	---	---	None	---	---
BlF:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
BlF:										
Dekalb	A	Medium	Jan-Dec	---	---	---	---	None	---	---
BrE:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
Weikert	C/D	Medium	Jan-Dec	---	---	---	---	None	---	---
BrF:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
Weikert	C/D	Medium	Jan-Dec	---	---	---	---	None	---	---
BtC:										
Blackthorn	B	Low	Jan-Dec	---	---	---	---	None	---	---
BtE:										
Blackthorn	B	Medium	Jan-Dec	---	---	---	---	None	---	---
BxF:										
Briery	C	Medium	Jan-Dec	---	---	---	---	None	---	---
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	---
CbC:										
Calvin	C	Low	Jan-Dec	---	---	---	---	None	---	---
Dekalb	A	Low	Jan-Dec	---	---	---	---	None	---	---
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	---
CbE:										
Calvin	C	Medium	Jan-Dec	---	---	---	---	None	---	---
Dekalb	A	Medium	Jan-Dec	---	---	---	---	None	---	---
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
CbF:										
Calvin	C	Medium	Jan-Dec	---	---	---	---	None	---	---
Dekalb	A	Medium	Jan-Dec	---	---	---	---	None	---	---
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---
CeF:										
Caneyville, karst	C	High	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
CeF:										
Frederick, karst----------	B	High	Jan-Dec	---	---	---	---	None	---	---
Rock outcrop--------------	D	Very high	Jan-Dec	---	---	---	---	None	---	---
CfB:										
Cateache------------------	C	Medium	Jan-Dec	---	---	---	---	None	---	---
CfC:										
Cateache------------------	C	Medium	Jan-Dec	---	---	---	---	None	---	---
CfD:										
Cateache------------------	C	High	Jan-Dec	---	---	---	---	None	---	---
CfE:										
Cateache------------------	C	High	Jan-Dec	---	---	---	---	None	---	---
CfF:										
Cateache------------------	C	High	Jan-Dec	---	---	---	---	None	---	---
CgC:										
Cateache------------------	C	Medium	Jan-Dec	---	---	---	---	None	---	---
CgE:										
Cateache------------------	C	High	Jan-Dec	---	---	---	---	None	---	---
CgF:										
Cateache------------------	C	High	Jan-Dec	---	---	---	---	None	---	---
Ch:										
Chavies-------------------	B	Very low	Jan-Dec	---	---	---	---	None	Very brief	Rare
CpB:										
Cookport------------------	C	Very high								
			January	1.2-2.5	1.5-3.5	---	---	None	---	None
			February	1.4-2.5	1.5-2.5	---	---	None	---	None
			March	1.4-2.5	1.5-2.5	---	---	None	---	None
			April	1.4-2.5	1.5-2.5	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	1.4-2.5	1.5-2.5	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	1.4-2.5	1.5-2.5	---	---	None	---	None
			December	1.4-2.5	1.5-2.5	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
CuB:										
Culleoka	B	Medium	Jan-Dec	---	---	---	---	None	---	---
CuC:										
Culleoka	B	Medium	Jan-Dec	---	---	---	---	None	---	---
CuD:										
Culleoka	B	High	Jan-Dec	---	---	---	---	None	---	---
CyE:										
Culleoka	B	High	Jan-Dec	---	---	---	---	None	---	---
CyF:										
Culleoka	B	High	Jan-Dec	---	---	---	---	None	---	---
DeC:										
Dekalb	C	Low	Jan-Dec	---	---	---	---	None	---	---
DeE:										
Dekalb	C	Medium	Jan-Dec	---	---	---	---	None	---	---
DeF:										
Dekalb	C	Medium	Jan-Dec	---	---	---	---	None	---	---
DhC:										
Dekalb	A	Low	Jan-Dec	---	---	---	---	None	---	---
Hazleton	B	Low	Jan-Dec	---	---	---	---	None	---	---
DhE:										
Dekalb	A	Medium	Jan-Dec	---	---	---	---	None	---	---
Hazleton	B	Medium	Jan-Dec	---	---	---	---	None	---	---
DhF:										
Dekalb	A	Medium	Jan-Dec	---	---	---	---	None	---	---
Hazleton	B	Medium	Jan-Dec	---	---	---	---	None	---	---
DkF:										
Dekalb	C	Medium	Jan-Dec	---	---	---	---	None	---	---
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
Du:										
Dunning	D	Negligible								
			January	0.0-0.5	>6.0	0.0-1.6	Brief	Occasional	Brief	Occasional
			February	0.0-0.5	>6.0	0.0-1.6	Brief	Occasional	Brief	Occasional
			March	0.0-0.5	>6.0	0.0-1.6	Brief	Occasional	Brief	Occasional
			April	0.0-0.5	>6.0	0.0-1.6	Brief	Occasional	Brief	Occasional
			May	0.0-0.8	>6.0	0.0-1.6	Brief	Occasional	Brief	Occasional
			June	0.0-0.8	>6.0	0.0-1.6	Brief	Occasional	Very brief	Rare
			July	0.0-0.8	>6.0	0.0-1.6	Brief	Occasional	Very brief	Rare
			August	0.0-0.8	>6.0	0.0-1.6	Brief	Occasional	Very brief	Rare
			September	0.0-1.6	>6.0	0.0-1.6	Brief	Occasional	Very brief	Rare
			October	0.0-1.6	>6.0	0.0-1.6	Brief	Occasional	Very brief	Rare
			November	0.0-0.5	>6.0	0.0-1.6	Brief	Occasional	Brief	Occasional
			December	0.0-0.5	>6.0	0.0-1.6	Brief	Occasional	Brief	Occasional
ElF:										
Elliber	A	Medium	Jan-Dec	---	---	---	---	None	---	---
ErB:										
Ernest	C	Medium								
			January	1.5-2.3	1.9-3.0	---	---	None	---	None
			February	1.5-2.3	1.9-3.0	---	---	None	---	None
			March	1.5-2.3	1.9-3.0	---	---	None	---	None
			April	1.5-2.3	1.9-3.0	---	---	None	---	None
			May	1.5-2.3	1.9-3.0	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	1.5-2.3	1.9-3.0	---	---	None	---	None
			December	1.5-2.3	1.9-3.0	---	---	None	---	None
EsC:										
Ernest	C	Medium								
			January	1.5-2.3	1.9-3.0	---	---	None	---	None
			February	1.5-2.3	1.9-3.0	---	---	None	---	None
			March	1.5-2.3	1.9-3.0	---	---	None	---	None
			April	1.5-2.3	1.9-3.0	---	---	None	---	None
			May	1.5-2.3	1.9-3.0	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	1.5-2.3	1.9-3.0	---	---	None	---	None
			December	1.5-2.3	1.9-3.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
FaE:										
Faywood	C	Very high	Jan-Dec	---	---	---	---	None	---	---
FaF:										
Faywood	C	Very high	Jan-Dec	---	---	---	---	None	---	---
FkB:										
Frankstown	B	Medium	Jan-Dec	---	---	---	---	None	---	---
FkC:										
Frankstown	B	Medium	Jan-Dec	---	---	---	---	None	---	---
FkD:										
Frankstown	B	High	Jan-Dec	---	---	---	---	None	---	---
FoC:										
Frankstown	B	Medium	Jan-Dec	---	---	---	---	None	---	---
FoE:										
Frankstown	B	High	Jan-Dec	---	---	---	---	None	---	---
FrB:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	---
FrC:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	---
FrD:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	---
FyC:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	---
Caneyville	C	Medium	Jan-Dec	---	---	---	---	None	---	---
FyE:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	---
Caneyville	C	High	Jan-Dec	---	---	---	---	None	---	---
GaC:										
Gauley	C	Medium	Jan-Dec	---	---	---	---	None	---	---
GaE:										
Gauley	C	High	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
GnC:										
Gilpin	C	High	Jan-Dec	---	---	---	---	None	---	---
GnD:										
Gilpin	C	Very high	Jan-Dec	---	---	---	---	None	---	---
GpC:										
Gilpin	C	High	Jan-Dec	---	---	---	---	None	---	---
GpE:										
Gilpin	C	Very high	Jan-Dec	---	---	---	---	None	---	---
Ho:										
Holly	B/D	Very high								
			January	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			February	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			March	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			April	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			May	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Occasional
			September	---	---	---	---	None	Brief	Occasional
			October	---	---	---	---	None	Brief	Occasional
			November	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			December	0.0-1.0	>6.0	---	---	None	Brief	Frequent
KxF:										
Kaymine	C	Medium	Jan-Dec	---	---	---	---	None	---	---
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	---
LcC:										
Leatherbark	C	Very high								
			January	0.5-1.0	>6.0	---	---	None	---	None
			February	0.5-1.0	>6.0	---	---	None	---	None
			March	0.5-1.0	>6.0	---	---	None	---	None
			April	0.5-1.0	>6.0	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	0.5-1.0	>6.0	---	---	None	---	None
			December	0.5-1.0	>6.0	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
LgB:										
Lily	B	Medium	Jan-Dec	---	---	---	---	None	---	---
LgC:										
Lily	B	Medium	Jan-Dec	---	---	---	---	None	---	---
LhE:										
Lily	B	High	Jan-Dec	---	---	---	---	None	---	---
Lo:										
Lobdell	B	Low								
			January	1.5-2.0	>6.0	---	---	None	Brief	Occasional
			February	1.5-2.0	>6.0	---	---	None	Brief	Occasional
			March	1.5-2.0	>6.0	---	---	None	Brief	Occasional
			April	1.5-2.0	>6.0	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
			November	---	---	---	---	None	Brief	Occasional
			December	1.5-2.0	>6.0	---	---	None	Brief	Occasional
MaB:										
Macove	B	Low	Jan-Dec	---	---	---	---	None	---	---
MaC:										
Macove	B	Low	Jan-Dec	---	---	---	---	None	---	---
MaD:										
Macove	B	Medium	Jan-Dec	---	---	---	---	None	---	---
McC:										
Macove	B	Low	Jan-Dec	---	---	---	---	None	---	---
McE:										
Macove	B	Medium	Jan-Dec	---	---	---	---	None	---	---
MeF:										
Macove	B	Medium	Jan-Dec	---	---	---	---	None	---	---
Gilpin	C	Very high	Jan-Dec	---	---	---	---	None	---	---
MkC:										
Mandy	C	High	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
MkE:										
Mandy	C	Very high	Jan-Dec	---	---	---	---	None	---	---
MkF:										
Mandy	C	Very high	Jan-Dec	---	---	---	---	None	---	---
MkG:										
Mandy	C	Very high	Jan-Dec	---	---	---	---	None	---	---
Ml:										
Melvin	D	Very high								
			January	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			February	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			March	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			April	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			May	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			June	0.0-1.6	>6.0	---	---	None	Very brief	Rare
			July	0.0-1.6	>6.0	---	---	None	Very brief	Rare
			August	0.0-1.6	>6.0	---	---	None	Very brief	Rare
			September	0.0-1.6	>6.0	---	---	None	Very brief	Rare
			October	0.0-1.6	>6.0	---	---	None	Very brief	Rare
			November	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			December	0.0-1.0	>6.0	---	---	None	Brief	Frequent
Lindside	C	Low								
			January	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			February	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			March	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			April	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			May	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			June	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			July	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			August	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			September	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			October	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			November	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			December	1.5-3.0	>6.0	---	---	None	Brief	Occasional
MzC:										
Mertz	C	Medium	Jan-Dec	---	---	---	---	None	---	---
MzE:										
Mertz	C	High	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
No:										
Nolin----------	B	Low								
			January	---	---	---	---	None	Brief	Occasional
			February	3.0-6.0	>6.0	---	---	None	Brief	Occasional
			March	3.0-6.0	>6.0	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Brief	Occasional
			December	---	---	---	---	None	Brief	Occasional
Ph:										
Philo----------	B	Low								
			January	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			February	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			March	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			April	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			May	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Brief	Occasional
			December	1.5-3.0	>6.0	---	---	None	Brief	Occasional
Po:										
Pope----------	B	Very low								
			January	---	---	---	---	None	Brief	Occasional
			February	---	---	---	---	None	Brief	Occasional
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Brief	Occasional
			December	---	---	---	---	None	Brief	Occasional

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
Pt:										
Potomac	A	Very low								
			January	---	---	---	---	None	Brief	Frequent
			February	---	---	---	---	None	Brief	Frequent
			March	---	---	---	---	None	Brief	Frequent
			April	---	---	---	---	None	Brief	Frequent
			May	---	---	---	---	None	Brief	Frequent
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Occasional
			September	---	---	---	---	None	Brief	Occasional
			October	---	---	---	---	None	Brief	Occasional
			November	---	---	---	---	None	Brief	Frequent
			December	---	---	---	---	None	Brief	Frequent
PuA:										
Purdy	D	Very high								
			January	0.0-1.0	>6.0	---	---	None	---	None
			February	1.0	>6.0	---	---	None	---	None
			March	1.0	>6.0	---	---	None	---	None
			April	1.0	>6.0	---	---	None	---	None
			May	1.0	>6.0	---	---	None	---	None
			June	1.0	>6.0	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	1.0	>6.0	---	---	None	---	None
			December	1.0	>6.0	---	---	None	---	None
Qu:										
Quarry	---	---	Jan-Dec	---	---	---	---	None	---	---
Se:										
Sensabaugh	B	Very low								
			January	4.0-6.0	>6.0	---	---	None	Brief	Occasional
			February	4.0-6.0	>6.0	---	---	None	Brief	Occasional
			March	4.0-6.0	>6.0	---	---	None	Brief	Occasional
			April	4.0-6.0	>6.0	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Brief	Occasional
			December	---	---	---	---	None	Brief	Occasional

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
SfB:										
Shouns	B	Medium	Jan-Dec	---	---	---	---	None	---	---
SfC:										
Shouns	B	Medium	Jan-Dec	---	---	---	---	None	---	---
ShC:										
Shouns	B	Medium	Jan-Dec	---	---	---	---	None	---	---
ShE:										
Shouns	B	High	Jan-Dec	---	---	---	---	None	---	---
ShF:										
Shouns	B	High	Jan-Dec	---	---	---	---	None	---	---
SmC:										
Simoda	C	High								
			January	1.5-2.5	>6.0	---	---	None	---	None
			February	1.5-2.5	>6.0	---	---	None	---	None
			March	1.5-2.5	>6.0	---	---	None	---	None
			April	1.5-2.5	>6.0	---	---	None	---	None
			May	1.5-2.5	>6.0	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	1.5-2.5	>6.0	---	---	None	---	None
			December	1.5-2.5	>6.0	---	---	None	---	None
SoC:										
Snowdog	C	Medium	Jan-Dec	1.5-2.5	>6.0	---	---	None	---	None
SoE:										
Snowdog	C	High	Jan-Dec	1.5-2.5	>6.0	---	---	None	---	None
SoF:										
Snowdog	C	High	Jan-Dec	1.5-2.5	>6.0	---	---	None	---	None
SvC:										
Summers	B	Medium	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
Tp:										
Tioga	B	Very low								
			January	---	---	---	---	None	Brief	Occasional
			February	---	---	---	---	None	Brief	Occasional
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Brief	Occasional
			December	---	---	---	---	None	Brief	Occasional
Potomac	A	Very low								
			January	---	---	---	---	None	Brief	Frequent
			February	---	---	---	---	None	Brief	Frequent
			March	---	---	---	---	None	Brief	Frequent
			April	---	---	---	---	None	Brief	Frequent
			May	---	---	---	---	None	Brief	Frequent
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Occasional
			September	---	---	---	---	None	Brief	Occasional
			October	---	---	---	---	None	Brief	Occasional
			November	---	---	---	---	None	Brief	Frequent
			December	---	---	---	---	None	Brief	Frequent
TrC:										
Trussel	C	Very high	Jan-Dec	0.0-0.5	1.0-2.5	---	---	None	---	None
Uf:										
Udifluvents	---	---								
			January	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			February	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			March	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			April	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			May	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			June	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			July	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			August	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			September	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			October	1.5-3.0	>6.0	---	---	None	Very brief	Rare
			November	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			December	1.5-3.0	>6.0	---	---	None	Brief	Occasional

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
Uf:										
Fluvaquents	---	---								
			January	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			February	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			March	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			April	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			May	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			June	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			July	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			August	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			September	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			October	0.0-1.0	>6.0	---	---	None	Brief	Occasional
			November	0.0-1.0	>6.0	---	---	None	Brief	Frequent
			December	0.0-1.0	>6.0	---	---	None	Brief	Frequent
Ux:										
Udorthents	---	---	Jan-Dec	---	---	---	---	None	---	---
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	---
WeC:										
Weikert	B/D	Low	Jan-Dec	---	---	---	---	None	---	---
WeD:										
Weikert	B/D	Medium	Jan-Dec	---	---	---	---	None	---	---
WeF:										
Weikert	B/D	Medium	Jan-Dec	---	---	---	---	None	---	---
WrG:										
Rough	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Weikert	B/D	Medium	Jan-Dec	---	---	---	---	None	---	---
Berks	C	High	Jan-Dec	---	---	---	---	None	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
ZoA:										
Zoar----------	C	Low								
			January	1.5-2.5	>6.0	---	---	None	---	None
			February	1.5-2.5	>6.0	---	---	None	---	None
			March	1.5-2.5	>6.0	---	---	None	---	None
			April	1.5-2.5	>6.0	---	---	None	---	None
			May	---	---	---	---	None	---	None
			June	---	---	---	---	None	---	None
			July	---	---	---	---	None	---	None
			August	---	---	---	---	None	---	None
			September	---	---	---	---	None	---	None
			October	---	---	---	---	None	---	None
			November	---	---	---	---	None	---	None
			December	1.5-2.5	>6.0	---	---	None	---	None

Table 20.--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			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
AlB:						
Allegheny	---	---	---	Low	Low	High
AlC:						
Allegheny	---	---	---	---	Low	High
An:						
Atkins	---	---	---	High	High	Moderate
Philo	---	---	---	Moderate	Low	High
Potomac	---	---	---	Low	Low	Moderate
BaE:						
Belmont	Bedrock (lithic)	40-60	---	Moderate	Moderate	Moderate
BcC:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
BcE:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
BcF:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
BkG:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
Weikert	Bedrock (paralithic)	10-20	---	Moderate	Moderate	Moderate
Calvin	Bedrock (paralithic)	20-40	---	Moderate	Low	Moderate
BlC:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
BlE:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
BlF:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
BrE:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
BrE:						
Weikert	Bedrock (paralithic)	10-20	---	Moderate	Moderate	Moderate
BrF:						
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
Weikert	Bedrock (paralithic)	10-20	---	Moderate	Moderate	Moderate
BtC:						
Blackthorn	---	---	---	Low	Moderate	High
BtE:						
Blackthorn	---	---	---	Low	Moderate	High
BxF:						
Briery	---	---	---	Moderate	Low	Low
Rock outcrop	Bedrock (lithic)	0-0	---	---	---	---
CbC:						
Calvin	Bedrock (paralithic)	20-40	---	Moderate	Low	Moderate
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
CbE:						
Calvin	Bedrock (paralithic)	20-40	---	Moderate	Low	Moderate
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
CbF:						
Calvin	Bedrock (paralithic)	20-40	---	Moderate	Low	Moderate
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
CeF:						
Caneyville	Bedrock (lithic)	20-40	---	---	High	Moderate
Frederick	---	---	---	Moderate	Moderate	High
Rock outcrop	Bedrock (lithic)	0-4	---	---	---	---
CfB:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
CfC:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate
CfD:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate
CfE:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate
CfF:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate
CgC:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate
CgE:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate
CgF:						
Cateache	Bedrock (paralithic)	20-40	---	Moderate	Moderate	Moderate
Ch:						
Chavies	---	---	---	---	Low	Moderate
CpB:						
Cookport	Bedrock (lithic)	40-60	---	Moderate	Moderate	Moderate
CuB:						
Culleoka	Bedrock (paralithic)	20-40	---	---	Low	Moderate
CuC:						
Culleoka	Bedrock (paralithic)	20-40	---	---	Low	Moderate
CuD:						
Culleoka	Bedrock (paralithic)	20-40	---	---	Low	Moderate
CyE:						
Culleoka	Bedrock (paralithic)	20-40	---	---	Low	Moderate
CyF:						
Culleoka	Bedrock (paralithic)	20-40	---	---	Low	Moderate
DeC:						
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
DeE:						
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
DeF:						
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
DhC:						
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
Hazleton	Bedrock (lithic)	40-60	---	Moderate	Low	High
DhE:						
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
Hazleton	Bedrock (lithic)	40-60	---	Moderate	Low	High
DhF:						
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
Hazleton	Bedrock (lithic)	40-60	---	Moderate	Low	High
DkF:						
Dekalb	Bedrock (lithic)	20-40	---	Low	Low	High
Rock outcrop	Bedrock (lithic)	0-4	---	---	---	---
Du:						
Dunning	---	---	---	---	High	Moderate
ElF:						
Elliber	---	---	---	Moderate	Low	High
ErB:						
Ernest	Fragipan	---	Noncemented	Moderate	Moderate	Moderate
EsC:						
Ernest	Fragipan	---	Noncemented	Moderate	Moderate	Moderate
FaE:						
Faywood	Bedrock (lithic)	20-40	---	---	High	Moderate
FaF:						
Faywood	Bedrock (lithic)	20-40	---	---	High	Moderate
FkB:						
Frankstown	Bedrock (lithic)	40-80	---	Moderate	Moderate	Moderate
FkC:						
Frankstown	Bedrock (lithic)	40-80	---	Moderate	Moderate	Moderate
FkD:						
Frankstown	Bedrock (lithic)	40-80	---	Moderate	Moderate	Moderate
FoC:						
Frankstown	Bedrock (lithic)	40-80	---	Moderate	Moderate	Moderate
FoE:						
Frankstown	Bedrock (lithic)	40-80	---	Moderate	Moderate	Moderate
FrB:						
Frederick	---	---	---	Moderate	Moderate	High
FrC:						
Frederick	---	---	---	Moderate	Moderate	High
FrD:						
Frederick	---	---	---	Moderate	Moderate	High

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
FyC:						
Frederick	---	---	---	Moderate	Moderate	High
Caneyville	Bedrock (lithic)	20-40	---	---	High	Moderate
FyE:						
Frederick	---	---	---	Moderate	Moderate	High
Caneyville	Bedrock (lithic)	20-40	---	Moderate	High	Moderate
GaC:						
Gauley	Bedrock (lithic)	20-40	---	Moderate	Low	High
GaE:						
Gauley	Bedrock (lithic)	20-40	---	Moderate	Low	High
GnC:						
Gilpin	Bedrock (paralithic)	20-40	---	Moderate	Low	High
GnD:						
Gilpin	Bedrock (paralithic)	20-40	---	Moderate	Low	High
GpC:						
Gilpin	Bedrock (paralithic)	20-40	---	Moderate	Low	High
GpE:						
Gilpin	Bedrock (paralithic)	20-40	---	Moderate	Low	High
Ho:						
Holly	---	---	---	High	High	Moderate
KxF:						
Kaymine	---	---	---	Moderate	Low	Low
Rock outcrop	Bedrock (lithic)	0-4	---	---	---	---
LcC:						
Leatherbark	Bedrock (lithic)	20-40	---	---	High	High
LgB:						
Lily	Bedrock (lithic)	20-40	---	---	Moderate	High
LgC:						
Lily	Bedrock (lithic)	20-40	---	---	Moderate	High
LhE:						
Lily	Bedrock (lithic)	20-40	---	---	Moderate	High
Lo:						
Lobdell	---	---	---	High	Low	Moderate
MaB:						
Macove	---	---	---	Moderate	Moderate	Moderate
MaC:						
Macove	---	---	---	Moderate	Moderate	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
MaD:						
Macove	---	---	---	Moderate	Moderate	Moderate
McC:						
Macove	---	---	---	Moderate	Moderate	Moderate
McE:						
Macove	---	---	---	Moderate	Moderate	Moderate
MeF:						
Macove	---	---	---	Moderate	Moderate	Moderate
Gilpin	Bedrock (paralithic)	20-40	---	Moderate	Low	High
MkC:						
Mandy	Bedrock (paralithic)	20-40	---	Low	Low	High
MkE:						
Mandy	Bedrock (paralithic)	20-40	---	Low	Low	High
MkF:						
Mandy	Bedrock (paralithic)	20-40	---	Low	Low	High
MkG:						
Mandy	Bedrock (paralithic)	20-40	---	Low	Low	High
Ml:						
Melvin	---	---	---	---	High	Low
Lindside	---	---	---	High	Moderate	Low
MzC:						
Mertz	---	---	---	Moderate	Moderate	High
MzE:						
Mertz	---	---	---	Moderate	Moderate	High
No:						
Nolin	---	---	---	---	Low	Moderate
Ph:						
Philo	---	---	---	Moderate	Low	High
Po:						
Pope	---	---	---	Moderate	Low	High
Pt:						
Potomac	---	---	---	Low	Low	Moderate
PuA:						
Purdy	---	---	---	High	High	High
Qu:						
Quarry	Bedrock (lithic)	0-4	---	---	---	---
Se:						
Sensabaugh	---	---	---	---	Low	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
SfB:						
Shouns	---	---	---	---	Moderate	Moderate
SfC:						
Shouns	---	---	---	---	Moderate	Moderate
ShC:						
Shouns	---	---	---	Moderate	Moderate	Moderate
ShE:						
Shouns	---	---	---	Moderate	Moderate	Moderate
ShF:						
Shouns	---	---	---	Moderate	Moderate	Moderate
SmC:						
Simoda	Bedrock (lithic)	45-72	---	Moderate	Moderate	High
SoC:						
Snowdog	---	---	---	Moderate	Moderate	High
SoE:						
Snowdog	---	---	---	Moderate	Moderate	High
SoF:						
Snowdog	---	---	---	Moderate	Moderate	High
SvC:						
Summers	Bedrock (lithic)	20-40	---	Moderate	Low	High
Tp:						
Tioga	---	---	---	Moderate	Low	Moderate
Potomac	---	---	---	Low	Low	Moderate
TrC:						
Trussel	---	---	---	High	High	High
Uf:						
Udifluvents	---	---	---	---	---	---
Fluvaquents	---	---	---	---	---	---
Ux:						
Udorthents	---	---	---	---	---	---
Rock outcrop	Bedrock (lithic)	0-4	---	---	---	---
WeC:						
Weikert	Bedrock (paralithic)	10-20	---	Moderate	Moderate	Moderate
WeD:						
Weikert	Bedrock (paralithic)	10-20	---	Moderate	Moderate	Moderate
WeF:						
Weikert	Bedrock (paralithic)	10-20	---	Moderate	Moderate	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
WrG:						
Weikert	Bedrock (paralithic)	10-20	---	Moderate	Moderate	Moderate
Berks	Bedrock (paralithic)	20-40	---	Low	Low	High
Rough	Bedrock (lithic)	4-10	---	Moderate	High	High
ZoA:						
Zoar	---	---	---	Moderate	High	High

Table 21.--Classification of the Soils

Soil name	Family or higher taxonomic class
Allegheny	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Atkins	Fine-loamy, mixed, active, acid, mesic Fluvaquentic Endoaquepts
Belmont	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Berks	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Blackthorn	Loamy-skeletal, mixed, semiactive, mesic Typic Hapludults
Briery	Loamy-skeletal, mixed, active, nonacid, frigid Typic Udorthents
Calvin	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Caneyville	Fine, mixed, active, mesic Typic Hapludalfs
Cateache	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Chavies	Coarse-loamy, mixed, active, mesic Ultic Hapludalfs
Cookport	Fine-loamy, mixed, active, mesic Aquic Fragiudults
Culleoka	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Dekalb	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Dunning	Fine, mixed, active, mesic Fluvaquentic Endoaquolls
Elliber	Loamy-skeletal, mixed, semiactive, mesic Typic Hapludults
Ernest	Fine-loamy, mixed, superactive, mesic Aquic Fragiudults
Faywood	Fine, mixed, active, mesic Typic Hapludalfs
Fluvaquents	Fluvaquents
Frankstown	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Frederick	Fine, mixed, semiactive, mesic Typic Paleudults
Gauley	Loamy-skeletal, siliceous, superactive, frigid Typic Haplorthods
Gilpin	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Hazleton	Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts
Holly	Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Kaymine	Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents
Leatherbark	Fine-loamy, mixed, subactive, frigid Aquic Dystrudepts
Lily	Fine-loamy, siliceous, semiactive, mesic Typic Hapludults
Lindside	Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts
Lobdell	Fine-loamy, mixed, active, mesic Fluvaquentic Eutrudepts
Macove	Loamy-skeletal, mixed, active, mesic Typic Hapludults
Mandy	Loamy-skeletal, mixed, active, frigid Typic Dystrudepts
Melvin	Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Mertz	Loamy-skeletal, mixed, semiactive, mesic Typic Hapludults
Nolin	Fine-silty, mixed, active, mesic Dystric Fluventic Eutrudepts
Philo	Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts
Pope	Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts
Potomac	Sandy-skeletal, mixed, mesic Typic Udifluvents
Purdy	Fine, mixed, active, mesic Typic Endoaquults
Rough	Loamy-skeletal, mixed, active, acid, mesic Lithic Udorthents
Sensabaugh	Fine-loamy, mixed, semiactive, mesic Dystric Fluventic Eutrudepts
Shouns	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Simoda	Fine-loamy, mixed, semiactive, frigid Typic Fragiudepts
Snowdog	Fine-loamy, siliceous, active, frigid Typic Fragiudepts
Summers	Loamy-skeletal, siliceous, active, frigid Humic Dystrudepts
Tioga	Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Trussel	Fine-loamy, mixed, semiactive, frigid Aeric Fragiaquepts
Udifluvents	Udifluvents
Udorthents	Udorthents
Weikert	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Zoar	Fine, mixed, semiactive, mesic Aquic Hapludults

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