United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with Illinois
Agricultural Experiment
Station

Soil Survey of Woodford County, Illinois

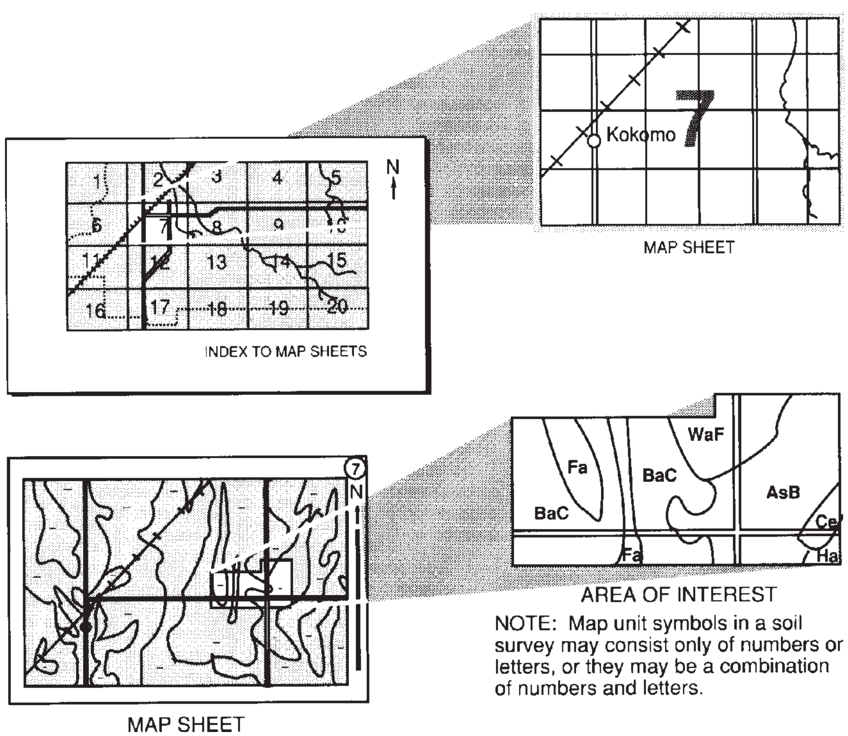
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

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

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

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



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

National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Woodford County Soil and Water Conservation District. Financial assistance was provided by the Woodford County Board and the Illinois Department of Agriculture.

Major fieldwork for this soil survey was completed in 2007. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2005. The tables reflect the data in effect as of April 2009. The most current official data are available via the Web Soil Survey (http://soils.usda.gov).

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

Nondiscrimination Statement

Cover Photo Caption

A prairie restoration in an area of Camden and Martinsville soils on a stream terrace along the Mackinaw River.

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 2010

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Foreword

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

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

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

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

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit 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.

William J. Gradle
State Conservationist
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Soil Survey of
Woodford County, Illinois

By Rick T. Francen, Natural Resources Conservation Service

Fieldwork for the 1999 soil survey by L.L. Merkel, W.M. Teater, and T.R. Ziegler, Natural Resources Conservation Service, and L.L. Gramm, J.K. Hornickel, D.E. Liniger, and S.W. Wegman, Woodford County Soil and Water Conservation District

Updated fieldwork by Rick T. Francen, James K. Hornickel, William M. Teater, and Robert A. Tegeler, Natural Resources Conservation Service

Geographic information assistance provided by Dale Baumgartner, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Agricultural Experiment Station

WOODFORD COUNTY is in central Illinois (fig. 1). It has an area of 347,410 acres, or about 543 square miles. It is bounded on the north by Marshall and La Salle Counties, on the south by McLean and Tazewell Counties, on the west by the Illinois River, and on the east by Livingston County. In 2000, the population of the county was 35,469. Eureka, the county seat, had a population of 5,036 (U.S. Department of Commerce, 2000).

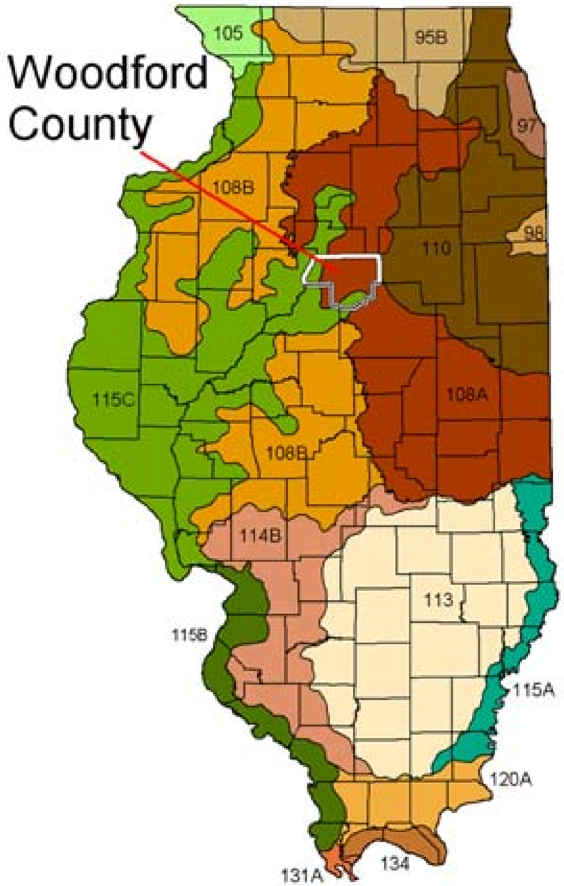
This soil survey updates the survey of Woodford County published in 1999 (Teater, 1999). It provides more information and orthophotographic maps at a slightly larger scale, in both electronic and digital format. Some of the information from the 1999 survey has been incorporated in this publication with little or no alteration.

General Nature of the County

This section provides general information about Woodford County. It describes history and development; physiography, relief, and drainage; farming and agriculture; transportation facilities and industry; and climate.

History and Development

The survey area at one time was characterized by large herds of buffalo. The original inhabitants were the Potawatomi, Fox, Sac, and Ottawa tribes. The Indians were primarily hunters and gatherers. The first European settlement in the county was established in the fall of 1822 near the Illinois River in what is now Spring Bay Township. Many of the later settlers built along Partridge and Walnut Creeks, where



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain
97—Southwestern Michigan Fruit and Truck Crop Belt
98—Southern Michigan and Northern Indiana Drift Plain
105—Northern Mississippi Valley Loess Hills
108A and 108B—Illinois and Iowa Deep Loess and Drift
110—Northern Illinois and Indiana Heavy Till Plain
113—Central Claypan Areas
114B—Southern Illinois and Indiana Thin Loess and Till Plain, Western Part
115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes
120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys, Southern Part
131A—Southern Mississippi River Alluvium
134—Southern Mississippi Valley Loess

Figure 1.—The location of Woodford County and the major land resource areas (MLRAs) in Illinois.

the land was being offered by the government at $1.25 an acre (Woodford County Sesquicentennial History Committee, 1968).

The county was organized in 1841 under the supervision of Thomas Bullock and was annexed from parts of Livingston, McLean, and Tazewell Counties. It was named for Woodford County, Kentucky, the previous home of Mr. Bullock. The first county seat was in Versailles, which was 3 miles south and east of the presentday courthouse in Eureka. In 1843, the county seat was moved to Hanover, which was later renamed Metamora (Le Baron, 1878). In 1896, the county seat was moved to its present location in Eureka (Drury, 1955).

Physiography, Relief, and Drainage

Woodford County is on the Bloomington Ridged Plain of the Central Lowland Province (Leighton and others, 1948). Elevation ranges from more than 850 feet above mean sea level at a point in the southeast corner of the county to less than 450 feet above mean sea level on the flood plain along the Illinois River where the river exits the county (fig. 2). The physiography of the county consists of bluffs, ground moraines, stream terraces, and flood plains.

Most of Woodford County is on a nearly level to moderately sloping ground moraine. Areas adjacent to the streams and drainageways are gently sloping to very steep.

The majority of the county consists of uplands underlain by glacial till deposits from the Wisconsin Episode. The till is covered predominantly by loess, which ranges from 17 feet thick above the bluffs of the Illinois River to less than 4 feet thick in nearly level to gently sloping areas in the southeastern part of the county (Fehrenbacher and others, 1986). The till is exposed in many of the steeper dissected areas of the county. A small part of the county adjacent to the Illinois River consists of nearly level to moderately sloping wind- and water-deposited material on stream terraces and gently sloping to steep eolian material on dunes. This loamy and sandy material can range in thickness from 2 feet to more than 100 feet (Willman and Frye, 1970).

The flood plains along the major streams and their tributaries consist of alluvium, which is poorly sorted. The alluvium is commonly 10 to 20 feet thick along many valleys and 50 to 75 feet thick along major valleys (Willman and Frye, 1970).

Woodford County has nine major watersheds. In the northwestern part of the county, the watersheds of Partridge Creek, Snag Creek, and Crow Creek flow into the Illinois River. In the central-southern part of the county, the watersheds of Panther Creek, Walnut Creek, Mud Creek, and Six-mile Creek flow into the Mackinaw River. In the northeast corner of the county, the watersheds of Long Point Creek and Scattering Paint Creek flow into the Vermilion River.

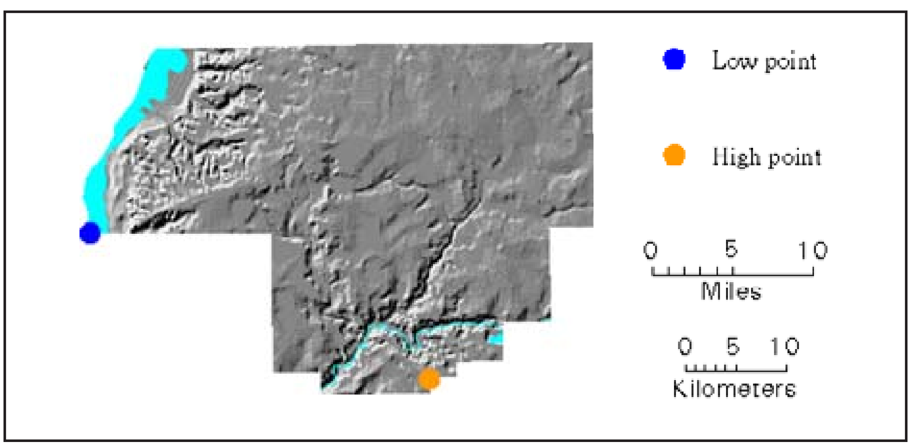


Figure 2.—A generalized relief map of Woodford County showing the location of the highest and lowest points in the county. The blue dot represents the lowest elevation, less than 450 feet above mean sea level, along the Illinois River. The orange dot represents the highest elevation, more than 850 feet above mean sea level. (Source: Illinois State Geological Survey, http://www.isgs.illinois.edu/education/hi-low/hilow-intro.shtml)

Farming and Agriculture

Farming continues to be an important enterprise in Woodford County. The number of farms in the county has gradually decreased since the early 1900s. Today, the average farm is 337 acres (USDA, 2002). An estimated 919 farms make up about 89 percent (309,591 acres) of the total acreage in the county (USDA, 2002). Corn and soybeans are the major crops; they make up approximately 94 percent of the crops planted annually. Secondary farm products include forage, wheat, oats, hogs, cattle, and sheep. In 2002, there were 138,079 acres of corn; 127,886 acres of soybeans; 4,305 acres of forage; 2,280 acres of wheat; and 712 acres of oats. Livestock production included 82,337 head of hogs, 7,163 head of cattle, and 1,387 head of sheep (USDA, 2002). The most productive soils in the survey area are in the north-central part of the county.

Transportation Facilities and Industry

The county's transportation system includes stretches of two interstate highways, three Federal routes, five State routes, and various county highways and roads. Recreational boating is available on the Illinois River. Two railroads are in operation in the county.

Agriculture, manufacturing, and health care services are the major contributors to the economy in the county (Woodford County Web site, http://www.woodford-county.org/). Housing development in the western part of the county has increased to accommodate commuters who work in the Peoria area.

Climate

Woodford County has a continental climate of relatively cold winters and warm, humid summers. Although precipitation is heaviest during the warmer half of the year, winter snow cover and frost usually provide adequate moisture to the soil in spring.

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

In winter, the average temperature is 25.2 degrees F and the average daily minimum temperature is 16.6 degrees. The lowest temperature on record, which occurred at Minonk on February 13, 1905, is -28 degrees. In summer, the average temperature is 72.6 degrees and the average daily maximum temperature is 84.6 degrees. The highest recorded temperature, which occurred at Minonk on July 14, 1936, is 111 degrees.

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

The total annual precipitation is 37.63 inches. Of this total, 21.97 inches, or 58 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 10.71 inches. The heaviest 1-day rainfall on record was 5.01 inches at Minonk on August 3, 1943.

The average seasonal snowfall is 28.1 inches. The greatest recorded 1-day snowfall was 12 inches at Minonk on both January 30, 1939, and February 7, 1933. On the average, 31 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

How This Survey Was Made

This survey was made to provide updated information about the soils and miscellaneous areas in the survey area, which is in Major Land Resource Areas 108A and 115C. Major land resource areas (MLRAs) are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA/NRCS, 2006). Woodford County is a subset of MLRAs 108A and 115C (fig. 1). Map unit design is based on the occurrence of each soil throughout an MLRA. In some places in this publication, a soil may be referred to that was not mapped in Woodford County but that does occur within the MLRA.

The information in this updated survey includes a description of the soils and miscellaneous areas and their location and a discussion of their properties and the subsequent effects on suitability, limitations, and management for specified uses. During the fieldwork for this survey, 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 prepared new soil profile descriptions and studied many existing soil profile descriptions. A soil profile 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 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 is associated with a particular kind or segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, soil scientists develop a concept, or model, of how the soils were formed. This model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil at a specific location on the landscape.

Individual soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate 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. The maximum depth of observation was about 80 inches (6.7 feet). The soil scientists noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, soil 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. Interpretations are modified as necessary to fit local conditions, and some new interpretations are developed to meet local needs. Interpretations and tables for this soil survey were generated using the National Soil Information System (NASIS) version 5.4.0. 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 seasonal high water table within certain depths in most years, but they cannot predict that the 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.

Aerial photographs used in this update survey were taken in 2005. Soil scientists also studied U.S. Geological Survey topographic maps (enlarged to a scale of 1:12,000) and orthophotographs to relate land and image features. Specific soil boundaries from the soil maps published in 1999 (Teater, 1999) were drawn on the orthophotographs. Adjustments of soil boundary lines were made to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the general processes of soil formation and the soil-landscape units in the survey area. It also describes the system of soil classification.

Factors of Soil Formation

Steve Suhl, resource soil scientist, and William Teater, soil scientist, Natural Resources Conservation Service, helped prepare this section.

A soil is a three-dimensional natural body consisting of mineral and organic material that can support plant growth. The nature of any soil at a given site is the result of the interaction of the factors of soil formation and their influence on the processes of soil formation.

There are five factors of soil formation—parent material, climate, plants and animals, topography, and time. Climate and plants and animals act directly on parent material, which is modified by topography over time. Theoretically, if all these factors were identical at different sites, the soils at these sites would be identical. Differences among the soils are caused by variations in one or more of these factors.

Parent Material

Parent material is the unconsolidated geologic material in which the soil forms. It determines the basis for the chemical and mineralogical composition of the soil. The properties of the parent material vary greatly, sometimes within small areas, depending on how the material was deposited. The soils in Woodford County developed in a variety of parent materials. The majority of the soils formed in eolian deposits. Other soils formed in glacial drift, alluvium, colluvium, overburden from mining or excavating, or a combination of these. Figure 3 shows the relationship of parent material to some of the major soils in the county.

Eolian deposits are sediments deposited by wind. The primary source of these sediments was the Illinois River. The Illinois River valley consisted of outwash deposited by glacial meltwater. During periods of low temperatures and precipitation rates, the meltwaters would recede, exposing the barren outwash surface to wind erosion. During intense wind erosion events, the finer components from the outwash were transported and deposited downwind along the adjacent river bluffs and uplands. The coarser silts and sands were deposited near the source, and the finer silts were carried longer distances and deposited over broad areas. In Woodford County, eolian sediments were deposited during the Wisconsin Episode and are either loess or windblown sand.

Loess is the major parent material in Woodford County. It is composed almost entirely of silt. The thickness of the loess is about 17 feet on the Illinois River bluffs; it gradually decreases from west to east across the county and is 4 feet or less in the southeast corner of the county (Willman and Frye, 1970). Dissected areas and

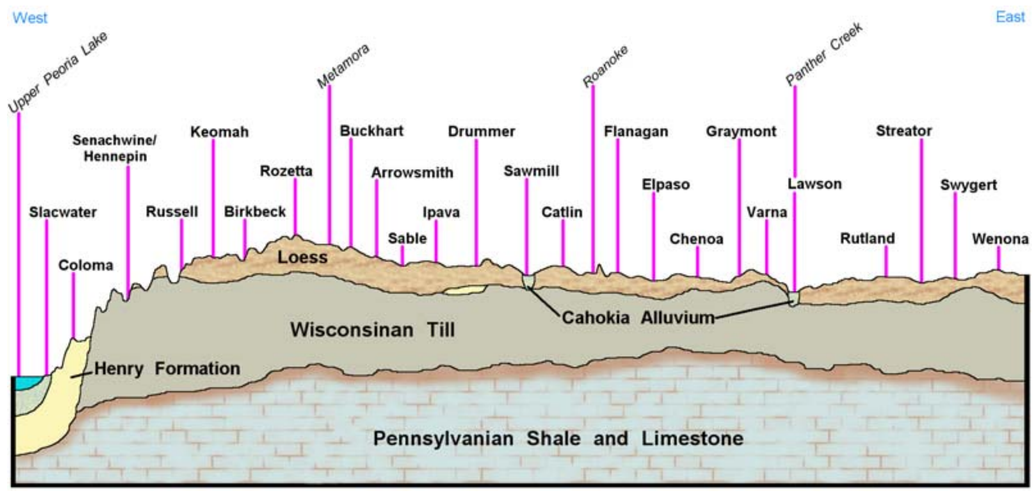


Figure 3.—Typical cross section showing the relationship of parent materials to soils in Woodford County.

ravines have lost some or all of the loess cap as a result of erosion. Ipava and Rozetta soils formed entirely in loess.

Windblown sand is poorly graded and is primarily composed of fine sand and medium sand. It is in areas along the Illinois River valley. Soils that formed entirely in windblown sand are of minor extent in Woodford County. Coloma soils are examples.

Drift is glacially deposited sediment. There are two main types of drift—till and outwash.

Till is material that was deposited directly by glacial ice with little or no water action. It typically has particles of various sizes, including sand, silt, clay, and some pebbles, cobbles, and larger rock fragments. The small pebbles in till generally have distinct edges and corners, indicating that they have not been subject to tumbling in water. Till is well graded and unstratified. In Woodford County, several varieties of till were deposited during the Wisconsin Episode. Generally, the clay content of the till deposits is highest in the northeast corner of the county and lowest in the southwest corner. Senachwine soils are examples of soils that formed in till deposited during the Wisconsin Episode. These soils occur in the dissected areas of the county. Soils that formed predominantly in till typically have a thin overlying layer of loess.

Outwash includes all sediments deposited by running water from melting glaciers. The size of the particles that can be transported by water, as either bedload or suspended sediments, depends on the gradient, volume, and velocity of the moving water. Water velocity decreases when a stream loses grade or flows into a larger body of water. As the velocity decreases, suspended particles begin to settle out. The coarser materials, such as gravel and cobbles, are deposited nearer to the source; the finer materials, such as fine sands, silts, and clays, are carried farther downstream. The pebbles in outwash generally have rounded edges and corners, indicating that they have been subject to tumbling in water. Outwash is poorly graded, is stratified, and is variable in composition because of variations in the rate of the flow of water during deposition. Outwash is generally permeable. The outwash in Woodford County was deposited during the Wisconsin Episode. Soils that formed in outwash deposits are of small extent in the county. Plano and Drummer soils are examples of soils that formed in loess and in the underlying outwash.

Alluvium is material deposited by running water. Stream alluvium is soil material deposited by floodwater along streams. The source of the alluvium generally is material eroded from other parent materials farther upstream in the watershed. Stream alluvium is poorly graded, stratified, and well sorted. The texture of the soil material varies, depending on the speed of the floodwater, the duration of the flooding, and the distance from the streambank. The more rapidly moving water within the stream channel slows quickly once it is outside the channel as the concentrated channel flow changes to broad overland flow. As the water velocity decreases, the coarser textured material is deposited near the channel. The fine textured material is carried a greater distance from the channel. Landes soils are examples of soils that formed close to the stream channel where the alluvium is coarser textured. Lawson soils formed in finer textured alluvium farther from the stream channel. Areas that remain flooded for extensive periods of time with slowly moving water, such as backswamps, provide the environment for fine textured material to settle out. Sawmill soils are examples of soils that formed in these areas.

Colluvium is soil material deposited by local, unconcentrated runoff from adjacent slopes. Colluvium is not well sorted. Peotone soils formed in colluvium.

Overburden from open-pit mining is the overlying material excavated to expose the sand and gravel. It consists of unconsolidated material, which includes the solum and substratum of the modern soil. The characteristics of the soil on mined land reflect the character of the overburden, the method of mining, and the degree of reclamation. For example, the parent material of the loamy Orthents is a heterogeneous mixture of loess and outwash. This mixture is the result of a mining process in which little or no segregation of materials occurs.

Climate

The climate in Woodford County has significantly affected the soil-forming processes. The county currently has a humid, temperate climate. In this climatic environment, physical and chemical weathering of the parent material can occur along with the accumulation of organic matter, the decomposition of minerals, the formation and translocation of clay, the leaching of soluble compounds, and alternating periods of freezing and thawing.

The two climatic factors that have the greatest influence on soil-forming processes are precipitation and temperature. Precipitation supplies the moisture needed for most physical and chemical processes and determines the depth to which these processes occur. The soil moisture regime, which is only a partial function of precipitation, determines the processes that occur in the soil. The rate at which these physical and chemical processes proceed is dependent upon the temperature, particularly its relationship to the soil temperature regime.

Two soil moisture regimes occur in the county—aquic and udic. The aquic soil moisture regime is a reducing regime in a soil that is virtually free of dissolved oxygen because of saturation by water or by water of the capillary fringe. Biological activity is necessary to remove dissolved oxygen from ground water; therefore, the soil temperature must also be above biologic zero (5 degrees C) for some time while the soil is saturated. Sable soils have an aquic soil moisture regime. The udic soil moisture regime implies that the soil moisture control section is not dry in any part for as long as 90 cumulative days per year. Also required, except for short periods, is a three-phase system, solid-liquid-gas, in part or all of the soil moisture control section when the soil temperature is above biologic zero. Rozetta soils have a udic soil moisture regime.

The mesic soil temperature regime is the only temperature regime recognized in the county. This regime implies that the mean annual soil temperature is 8 degrees C or higher but is lower than 15 degrees C, and the difference between mean summer and mean winter soil temperatures is more than 5 degrees C at a depth of 20 inches.

Plants and Animals

The vegetation under which a soil forms influences several important soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic matter to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Several different types of vegetation have influenced the formation of the soils in Woodford County. These include prairie vegetation, upland hardwood forests, forest-prairie transition areas, and flood-plain vegetation. These vegetation types are described in the following paragraphs.

Prairie Vegetation.—The decomposition of the roots of annual prairie grasses provides well distributed subsurface accumulations of organic materials, resulting in a thick, dark surface layer. Ipava soils formed under prairie vegetation. The average content of organic matter in the surface layer of these soils is 3.5 to 5.0 percent.

Upland Hardwood Forests.—The primary contribution of organic matter is from the annual additions of leaf litter to the surface layer, resulting in a thin, dark surface layer. Rozetta soils formed under this type of vegetation. The average content of organic matter in the surface layer of these soils is 1 to 3 percent.

Forest-Prairie Transition Areas.—Soils that formed in these areas exhibit modified characteristics of both forest and prairie vegetative regimes. The average content of organic matter in the surface layer of soils that formed in these transitional areas is 2 to 3 percent. Atterberry soils are examples.

Flood Plains.—Soils on flood plains formed under a combination of trees and grasses. They have colors that largely reflect those of the sediments in which they formed. Lawson soils are examples.

Bacteria, fungi, and many other micro-organisms decompose organic material and release nutrients to growing plants. They influence the formation of structural units, or peds. Soil properties, such as drainage, temperature, and reaction, influence the type of micro-organisms that live in the soil. Fungi are generally more active in the more acid soils, and bacteria are more active in the less acid soils.

Earthworms, crayfish, insects, and small burrowing animals mix the soil and create small channels that influence soil aeration and the percolation of water. Earthworms help to incorporate crop residue or other organic material into the soil. The organic material improves soil tilth. In areas that are well populated with earthworms, the leaf litter that accumulates on the soil in the fall has generally been incorporated into the soil by the following spring. If the earthworm population is low, part of the leaf litter can remain on the surface of the soil for several years.

Human activities have significantly influenced soil formation through their effect on soil health. Degradation processes, such as erosion, compaction, contamination, disaggregation, loss of biological activity, and depletion of nutrients, have damaged soil health. Native forests have been cleared and wet soils drained for farming and other uses. The development of land for urban uses or for surface mining has significantly influenced the soils in some areas.

Topography

Topography describes the configuration of the land surface in terms of relief and contour. It influences soil formation mainly through its effect on the proportion of surface-water runoff to infiltration and on the degree of erosion or deposition. In Woodford County, the less sloping areas generally have a lower rate of runoff and a greater rate of infiltration than areas on the steeper slopes. Soils that formed in the less sloping areas tend to be more developed than the soils in the steeper areas and generally have a thicker profile.

The degree of the effect of topography is dependent upon the type and stability of the land surface. There are two types of land surfaces—aggrading and degrading—and three levels of stability—stable, metastable, and active. In Woodford County, aggrading surfaces receive material either from deposition associated with flooding or by the accumulation of erosional sediments. Sarpy soils formed on natural levees on flood plains, which are active-aggrading land surfaces. Natural levees receive depositions of sediment from frequent episodes of flooding. Sable soils formed in broad, low-lying areas on drainage divides (talfs) that receive runoff from upslope but accumulate little sediment from hillslope erosion. These broad, low-lying areas are examples of stable-aggrading land surfaces. Degrading surfaces lose material primarily by the process of erosion. Keomah soils formed on the broad summits of interfluves. Broad summits are examples of stable-degrading surfaces, where runoff is limited. Rozetta soils occur on shoulders of hillslopes and thus are more susceptible than the Keomah soils to runoff and erosion. Shoulders are metastable-degrading surfaces, where increased runoff leads to higher rates of erosion. Backslopes are examples of active-degrading surfaces. Senachwine soils are on backslopes, where runoff and erosion rates are highest.

Time

The length of time that the parent material has been exposed to the soil-forming processes influences the degree of genetic horizon development that occurs within the soil. The evaluation of time as a factor in soil formation is difficult because of the effects of the other soil-forming factors. The influence of time can be modified by erosion, deposition of material, topography, and kind of parent material. For example, in the steeper areas on the landscape, much of the rainfall is lost to runoff and little is available to infiltrate and move through the parent material. Soil formation does not proceed as rapidly in these areas as in other areas, and the surface soil that does form is commonly partially removed by erosion. Soils in these areas are immature even though the slopes have been exposed to weathering for thousands of years. Hennepin soils are examples. Some areas on flood plains receive alluvial material during each flood event. The soils that form in these areas are commonly immature because the repeated episodes of deposition interrupt soil formation. Lawson soils are examples of soils that formed in stream alluvium.

Processes of Soil Formation

Soil forms through the complex interaction of four general processes. These processes are additions, transformations, removals, and translocations. The importance of these processes in the formation of a given soil varies.

The accumulation of organic matter in the A horizon of the mineral soils in Woodford County is an example of an addition. The most striking example of this addition is the formation of a mollic epipedon. The mollic epipedon forms in an environment that features optimum amounts of moisture, temperature, and bivalent cations. Such an environment allows grasses to thrive. The underground decomposition of roots and of organic residues from the surface that have been taken underground by animals results in the characteristic thickness and darkness of the mollic epipedon. Ipava soils are examples of soils that have a mollic epipedon.

Transformations are changes that take place in the soil. An example is the reduction of iron and manganese. Typically, iron oxides coat soil particles and, in an aerated environment, produce yellowish, yellowish brown, or reddish colors. Manganese oxides produce black colors. Micro-organisms that are able to generate energy from the oxidation of soil organic matter in this aerated environment flourish. The energy is necessary for the micro-organisms to conduct the basic functions of life. When a soil becomes saturated with water and the dissolved oxygen is depleted or removed, anaerobic conditions develop. In an anaerobic environment, micro-organisms that can derive energy from the reduction of oxidized compounds, such as iron and manganese, become prevalent. The energy produced is used to create chemical compounds from organic matter that are necessary to sustain life. The reduced iron and manganese compounds are mobile and migrate in the soil water throughout the soil profile. Reduced iron and manganese can move with the soil water to other parts of the soil (translocation) and can be removed entirely from the soil by leaching (removal). After the iron and manganese are gone, the leached area, or depletion, generally has a grayish or whitish color, which is the natural color of the mineral grain. If the reduced iron comes in contact with oxygen, it can re-oxidize. The result is the formation of brightly colored concentrations or accumulations. The processes of reduction, translocation, and oxidation result in the development of distinctive soil morphological characteristics called redoximorphic features. Repeated cycles of saturation and drying create a mottled soil. Part of the soil is gray because of the loss of iron, and other parts are brown because the iron oxide has accumulated or has not been removed. The somewhat poorly drained Ipava soils are examples of soils in which this process has occurred. If a soil remains saturated for long periods, iron may be leached from the soil. Such soils are generally grayish, or gleyed. The poorly drained Sable soils are examples.

Removals that occur within the soil are commonly a result of leaching. The leaching of calcium carbonate from many of the soils in the county is an example of a removal. The parent material of these soils was initially high in calcium carbonate. Water percolating through the soil dissolved and transported the carbonate into the deeper soil layers. Calcium carbonate is relatively soluble and is removed relatively early in the formation of the soil. It is also a powerful flocculent, and its removal facilitates the translocation of clay and the formation of illuvial horizons. The loss of solid mineral and organic particles through erosion is another example of a removal. Such losses can be serious because the material lost is typically the most productive part of the soil profile.

Translocations are movements from one place to another in the soil. An example is the formation of an illuvial horizon through the translocation of clay from the A or E horizon, the zone of eluviation, or loss, to the B horizon, the zone of illuviation, or gain. In Rozetta soils, for example, significant clay has accumulated, forming an illuvial horizon called an argillic horizon. The argillic horizon developed on a relatively old, stable landscape. Fine clay was transferred from the A or E horizon by water from rain and melting snow downward through the soil to the B horizon, where it was deposited on the faces of peds and along pores.

Soils and Soil-Landscape Units

Soils are natural bodies that are distributed on the landscape in a predictable way in response to a systematic interaction of the five major factors of soil formation—parent material, time, topography, plants and animals, and climate. The relationship of landscape to these five factors results in a soil-landscape unit (Hudson, 1992). A soil-landscape unit is similar to a landform that has been modified by one or more of the soil-forming factors. Within a particular soil-landscape unit, the same kind of soil should develop. Changes in the interaction of one or more of the five factors leads to a change in the soil-landscape unit, influencing the soil-forming processes and the soil that forms within this unit.

The following paragraphs describe the relationships and interactions that occur in some of the more common soil-landscape units in Woodford County and the soils that have formed in these units.

Upland landscapes predominate in Woodford County. These landscapes range from broad, relatively undissected drainage divides to dissected areas adjacent to streams and rivers. The predominant parent materials are loess and the underlying till. Much of the calcium carbonate present when the loess was deposited has been leached to a sufficient depth to facilitate soil development.

The broad low-lying areas on the drainage divides (talfs) are stable-aggrading land surfaces. These land surfaces receive water through direct precipitation and runoff from upslope, resulting in a wet soil microclimate. A seasonal high water table is near the surface much of the year, and at times the area is ponded. Redoximorphic features associated with prolonged saturated conditions, such as a depleted soil matrix and iron and manganese accumulations along root channels and pores, occur at the soil surface as a result of the seasonal high water table.

The native vegetation in this soil-landscape unit was prairie grass. Additions of organic material from the decomposition of the extensive and deep root systems of these grasses resulted in a thick, dark surface layer called a mollic epipedon.

The saturated conditions and poor aeration influenced the rate of decomposition of organic material. This rate is slower in soils that are saturated for prolonged periods, resulting in a thicker mollic epipedon and a higher content of organic matter than in soils in better aerated positions upslope.

The extended periods of saturation also impeded the movement or illuviation of clay. A cambic horizon has developed through the aggregation of soil particles into structural units, or peds, and the development of redoximorphic features. Sable soils formed in areas of this soil-landscape unit.

Upslope from the low-lying areas is a soil-landscape unit composed of summits of broad rises on drainage divides. These areas are stable-degrading land surfaces that receive water primarily through direct precipitation. The seasonal high water table is at a lower depth than in soils in the adjacent low-lying areas, and the associated redoximorphic features indicate a fluctuating water table. The soil microclimate alternates between periods when the soil is saturated and periods when the soil is unsaturated. The yellowish brown soil matrix in the upper part of the profile indicates an oxidizing environment; the redoximorphic features are associated with periods of wetting and drying.

The native vegetation in areas of this soil-landscape unit was prairie grasses, but these landscape positions are better aerated than the low-lying positions and tend to have a higher rate of decomposition of organic matter. As a result, the soils in these areas generally have a slightly thinner mollic epipedon and a lower content of organic matter than the soils in the low-lying areas.

Fluctuations in depth to the water table disrupt the soil fabric through wetting and drying cycles, which aid in the dispersal, movement, and deposition of clay as films on ped surfaces and as linings of pores. The result is the formation of an argillic horizon. Ipava soils formed in areas of this soil-landscape unit.

In areas near drainageways, the soil-landscape unit is more dissected and is composed of broad summits of interfluves. It has characteristics similar to those of the unit on summits of broad rises on drainage divides. These dissected areas are stable-degrading land surfaces that receive water primarily through direct precipitation. The depth to the seasonal high water table and the associated redoximorphic features are nearly identical to those of the soil-landscape unit on summits of broad rises.

The native vegetation in this soil-landscape unit is transitional between forest and prairie vegetation. The soils in these areas have a dark surface layer, but they do not have a mollic epipedon because the dark surface layer is not thick enough and does not have a sufficient accumulation of organic matter. This type of surface horizon is called an ochric epipedon.

A light-colored, eluvial subsurface horizon (called an albic horizon) also has developed in the soils in these areas. This horizon is typical of soils that formed under forest vegetation. In this horizon, much of the clay and free iron oxides has been removed and the color is determined primarily by the uncoated silt and sand particles. The clay translocated from the eluvial horizon to the illuvial horizon results in the formation of an argillic horizon. Atterberry soils are in areas of this soil-landscape unit.

Adjacent to the preceding soil-landscape unit is a unit that is also composed of summits of interfluves but that is generally closer to the opposing interfluve drainageways and on narrower summits. These areas are stable-degrading land surfaces that receive water through direct precipitation. Water that does not infiltrate the soil is lost through surface flow or runoff. Runoff increases the susceptibility to erosion.

The seasonal high water table and the associated redoximorphic features occur at a much lower depth than in the soils on broad summits. The upper part of the soil profile is generally yellowish brown and free of depletions, indicating an oxidizing environment. Depletions occurring in the lower part of the subsoil are generally restricted to the pores within the soil.

The native vegetation in areas of this soil-landscape unit is forest. Under forest vegetation, most of the addition of organic material occurs above ground. Organic matter is not incorporated as deep in the soil profile as it is in soils that formed under prairie vegetation, and the content decreases rapidly with increasing depth. Therefore, the dark surface layer in these soils is thinner than that of the Atterberry soils. An ochric epipedon and an albic horizon have developed.

The more acid-leaching environment that occurs under forest vegetation allows dispersed clay particles to be translocated to a greater depth than in similar positions under prairie vegetation. The result is a well developed argillic horizon. Rozetta soils formed in areas of this soil-landscape unit.

In rolling landscapes adjacent to the major rivers in the county is a soil-landscape unit composed of convex summits of narrow interfluves and shoulders. These areas are metastable-degrading land surfaces that receive water through direct precipitation but also lose some of this water through runoff. Runoff increases the susceptibility to erosion and creates a drier soil microclimate. The seasonal high water table is below the depth of the developing soil profile. The entire profile is yellowish brown or brown, indicating an oxidizing environment.

The native vegetation in this soil-landscape unit is forest. The soils have an ochric epipedon and albic and argillic horizons. Russell soils are examples.

Downslope from this soil-landscape unit is a unit composed of backslopes of side slopes. These areas are active-degrading land surfaces that receive water through direct precipitation but also lose much of this water through runoff. Runoff increases the susceptibility to erosion. The depth to the seasonal high water table is similar to that in the Russell soils, and thus the soil profile is yellowish brown or brown and is free of depletions.

The native vegetation in this soil-landscape unit is forest. These soils have an ochric epipedon and an argillic horizon. Senachwine soils formed in areas of this soil-landscape unit.

On the narrow flood plains between opposing side slopes is an active-aggrading land surface that receives depositions of sediment from frequent episodes of flooding. The nearly continual deposition of sediment interrupts the soil-forming processes. The result is a less developed soil profile. The developing soil profile has a mollic epipedon, but it also still has the fine stratification common to recent alluvial deposits and has no diagnostic subsurface horizons. Lawson soils formed in areas of this soil-landscape unit.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 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 4 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 Mollisol.

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 Udoll (*Ud*, meaning humid, plus *oll*, from Mollisol).

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 Argiudolls (*Argi*, meaning white clay, plus *udolls*, the suborder of the Mollisols 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 Argiudolls.

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

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

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each major soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2006). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units 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. More information about each map unit is given under the headings “Use and Management of the Soils” and “Soil Properties.”

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*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given 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, Russell silt loam, 5 to 10 percent slopes, eroded, is a phase of the Russell series.

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Senachwine-Hennepin loams, 18 to 35 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the components in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Drummer and Elpaso silty clay loams, 0 to 2 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. The map unit Pits, gravel, is an example. Some miscellaneous areas that are too small or narrow to be mapped at the scale used for the survey are identified with a special symbol on the soil maps.

Table 5 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.

Alvin Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Alvin fine sandy loam, 2 to 5 percent slopes, in a cultivated field; Vermilion County, Illinois; 2,320 feet south and 1,760 feet east of the northwest corner of sec. 32, T. 21 N., R. 11 W.; USGS Danville NE topographic quadrangle; lat. 40 degrees 14 minutes 08 seconds N. and long. 87 degrees 36 minutes 58 seconds W.; UTM Zone 16, 447588 easting, 4454089 northing; NAD 83:

Ap—0 to 8 inches; brown (10YR 4/3) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; moderately acid; abrupt smooth boundary.

BE—8 to 11 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine subangular blocky structure; very friable; few distinct grayish brown (10YR 5/2) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—11 to 15 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate fine subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—15 to 25 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

E and Bt—25 to 74 inches; yellowish brown (10YR 5/4) loamy fine sand (E); weak medium subangular blocky structure; very friable; strongly acid; dark yellowish brown (10YR 4/6) fine sandy loam (Bt); 3 to 10 percent of volume; occurs as common to many thin lamellae; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

C—74 to 80 inches; 80 percent brown (10YR 4/3) and 20 percent yellowish brown (10YR 5/6), stratified fine sandy loam; massive; friable; moderately acid.

Range in Characteristics

Depth to the base of soil development: 40 to more than 80 inches

Ap or A horizon(s):
Hue—10YR
Value—3 or 4
Chroma—1 to 4
Texture—loamy sand, sandy loam, or fine sandy loam

E, EB, or BE horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 4
Texture—sandy loam or fine sandy loam

Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, or fine sandy loam; thin layers of sandy clay loam in some pedons
Content of rock fragments—0 to 5 percent by volume

E part of the E and Bt horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—loamy sand, loamy fine sand, or sand
Content of rock fragments—0 to 5 percent by volume

Bt part of the E and Bt horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loamy sand
Content of rock fragments—0 to 5 percent by volume

C or BC horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loamy sand, sand, or fine sandy loam
Content of rock fragments—0 to 5 percent by volume

131A—Alvin loamy sand, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits (fig. 4)

Map Unit Composition

Alvin and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have more clay in the surface layer
- Soils that have a thicker dark surface layer

Properties and Qualities of the Alvin Soil

Parent material: Wind- or water-deposited loamy and sandy material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

131B—Alvin sandy loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Backslopes (fig. 4)

Map Unit Composition

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

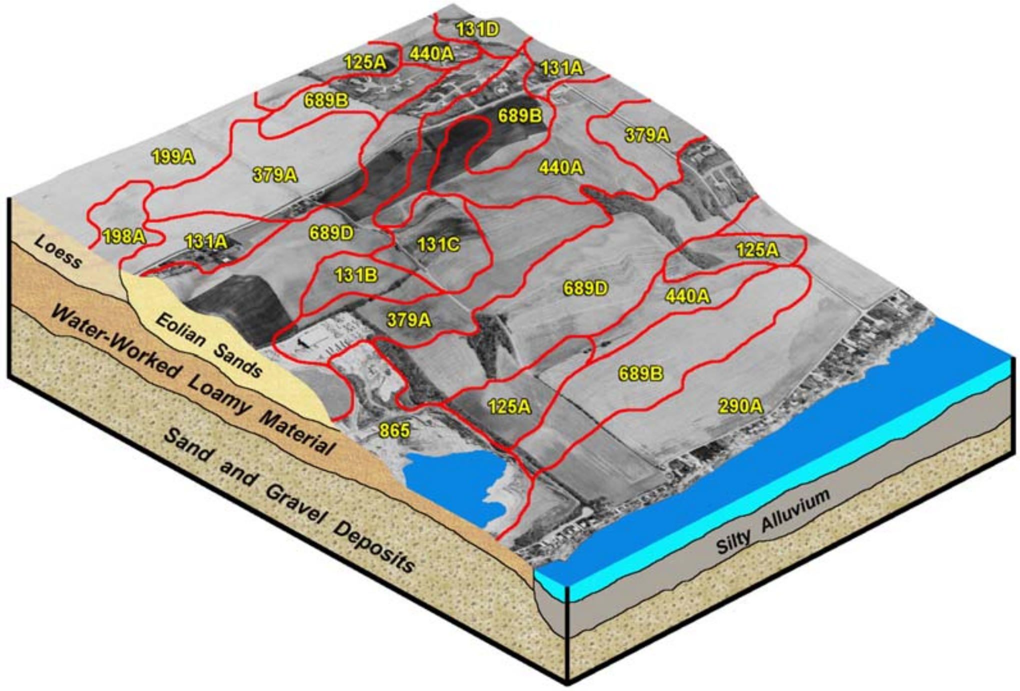


Figure 4.—Typical pattern of nearly level to strongly sloping soils on stream terraces. These soils formed in loess and the underlying water-worked loamy material; entirely in water-worked loamy material; in water-worked loamy material and the underlying sand and gravel deposits; in water-worked loamy material and/or eolian sands; or entirely in eolian sands.

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have a thicker dark surface layer
- Soils that have a thinner surface layer

Dissimilar soils:
- The well drained Senachwine soils in the higher landscape positions
- The well drained Hennepin soils in the lower landscape positions

Properties and Qualities of the Alvin Soil

Parent material: Wind- or water-deposited loamy and sandy material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

131C—Alvin sandy loam, 5 to 10 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Backslopes (fig. 4)

Map Unit Composition

Alvin and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have a thicker dark surface layer
- Soils that have a thinner surface layer

Properties and Qualities of the Alvin Soil

Parent material: Loamy and sandy eolian material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

131D—Alvin sandy loam, 10 to 18 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Backslopes (fig. 4)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have a thicker dark surface layer
- Soils that have a thinner surface layer
- Soils that have more clay in the subsoil
- Soils that have less sand throughout

Dissimilar soils:
- The well drained Landes soils on flood plains

Properties and Qualities of the Alvin Soil

Parent material: Loamy and sandy eolian material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

131F—Alvin sandy loam, 18 to 35 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have a thicker dark surface layer
- Soils that have a thinner surface layer
- Soils that have more clay in the subsoil
- Soils that have less sand throughout

Dissimilar soils:
- The well drained Landes soils on flood plains

Properties and Qualities of the Alvin Soil

Parent material: Loamy and sandy eolian material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Arrowsmith Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Arrowsmith silt loam, 0 to 2 percent slopes, at an elevation of 770 feet; McLean County, Illinois; 650 feet south and 1,350 feet east of the northwest corner of sec. 18, T. 22 N., R. 5 E.; USGS Farmer City North, Illinois, topographic quadrangle; lat. 40 degrees 22 minutes 3.1 seconds N. and long. 88 degrees 40 minutes 59.9 seconds W.; UTM Zone 16, 357083 easting, 4469912 northing; NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure; very friable; neutral; abrupt smooth boundary.

A—8 to 12 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure; friable; neutral; abrupt smooth boundary.

Bt1—12 to 17 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt2—17 to 23 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron the matrix; few fine spherical black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt3—23 to 30 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; many fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few fine spherical black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; slightly alkaline; abrupt smooth boundary.

BCk—30 to 39 inches; light olive brown (2.5Y 5/4) silt loam; weak coarse subangular blocky structure; friable; very few faint dark grayish brown (2.5Y 4/2) clay films lining pores; many fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; many fine and medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few fine spherical black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions in the matrix; few medium spherical white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; strongly effervescent; moderately alkaline; gradual smooth boundary.

Ck—39 to 60 inches; light olive brown (2.5Y 5/4) silt loam; massive; friable; many fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; many medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few fine spherical black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions in the matrix; few medium spherical white (10YR 8/1) weakly cemented calcium carbonate concretions throughout; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of soil development: 25 to 40 inches
Depth to carbonates: 25 to 40 inches
Depth to the base of the argillic horizon: 25 to 40 inches
Other features: Some pedons have an AB or BA horizon.

Ap or A horizon:
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam
Reaction—slightly acid or neutral

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or silty clay loam
Reaction—slightly acid to slightly alkaline

BCk or BCkg horizon (where present):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silt loam
Reaction—slightly alkaline or moderately alkaline

Ck or Ckg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or silt
Reaction—moderately alkaline

715A—Arrowsmith silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and footslopes (fig. 5)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Sable and Spaulding soils in swales

Properties and Qualities of the Arrowsmith Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None

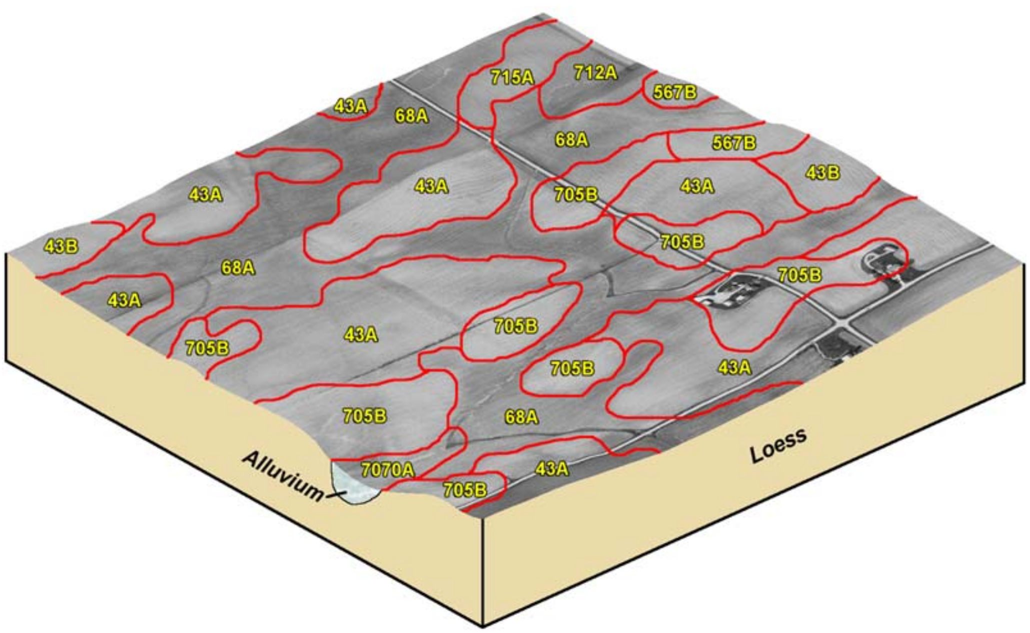


Figure 5.—Typical pattern of nearly level and gently sloping upland prairie soils that formed in loess and nearly level soils that formed in alluvium on flood plains.

Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Atterberry Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Atterberry silt loam, 0 to 2 percent slopes, at an elevation of 660 feet; Bureau County, Illinois; 1,650 feet north and 1,120 feet east of the southwest corner of sec. 34, T. 16 N., R. 9 E.; USGS Princeton South, Illinois, topographic quadrangle; lat. 41 degrees 19 minutes 30 seconds N. and long. 89 degrees 26 minutes 47 seconds W.; UTM Zone 16, 295253 easting, 4577728 northing; NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

E—9 to 13 inches; light brownish gray (10YR 6/2) silt loam; moderate thin platy structure; friable; few fine roots; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

BE—13 to 17 inches; brown (10YR 5/3) silt loam; moderate medium platy structure parting to moderate very fine subangular blocky; friable; few fine roots; common faint brown (10YR 4/3) clay films on faces of peds and common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine distinct dark brown (7.5YR 3/2) concretions of iron-manganese throughout; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Bt—17 to 24 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; common faint light gray (10YR 7/2) (dry) clay depletions on faces of peds and in pores; common fine spherical distinct dark brown (7.5YR 3/2) concretions of iron-manganese throughout; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary.

Btg1—24 to 33 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds and in pores; common fine spherical prominent dark brown (7.5YR 3/2) concretions of iron-manganese throughout; common fine faint light brownish gray (2.5Y 6/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary.

Btg2—33 to 40 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; common fine prominent spherical dark brown (7.5YR 3/2) concretions of iron-manganese throughout; many fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary.

Btg3—40 to 48 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary.

BCg—48 to 55 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; friable; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear wavy boundary.

Cg—55 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly acid.

Range in Characteristics

Depth to the base of soil development: 42 to 72 inches
Other features: Most pedons have a BE or EB horizon and a BC or BCg horizon.

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

E horizon(s):
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silt loam

C or Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

61A—Atterberry silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits, talfs (fig. 6)

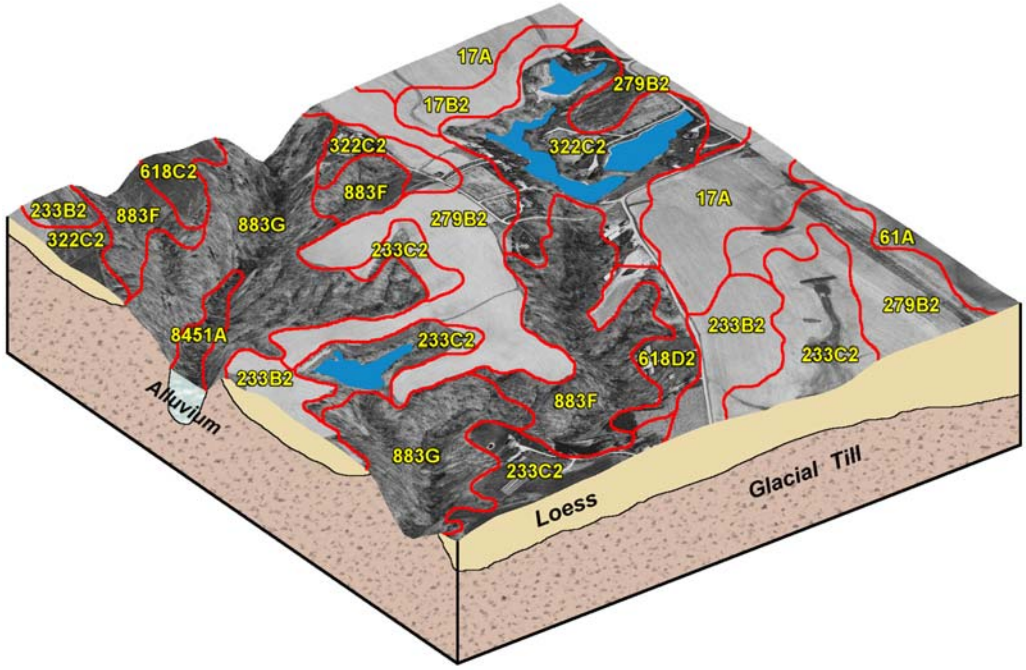


Figure 6.—Typical pattern of nearly level to very steep upland forest soils that formed in loess, in loess and the underlying glacial till, or entirely in glacial till and nearly level soils that formed in alluvium on flood plains.

Map Unit Composition

Atterberry and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have a lighter colored surface layer and have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Atterberry Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 0.5 foot to 2.0 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Beaucoup Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls

Typical Pedon

Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 475 feet; Adams County, Illinois; 727 feet south and 2,577 feet west of the northeast corner of sec. 9, T. 1 N., R. 9 W.; USGS Long Island, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 39 seconds N. and long. 91 degrees 26 minutes 50 seconds W.; UTM Zone 15, 632420 easting, 4439184 northing; NAD 83:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine granular structure; friable; common fine roots; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron between peds; neutral; gradual smooth boundary.

A—6 to 15 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine distinct dark yellowish brown (10YR 3/4) masses of oxidized iron-manganese between peds; neutral; gradual smooth boundary.

Bg1—15 to 24 inches; dark gray (10YR 4/1) silty clay loam; weak fine prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few fine distinct dark yellowish brown (10YR 4/4) masses of oxidized iron-manganese throughout; neutral; clear smooth boundary.

Bg2—24 to 35 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; very few faint dark gray (5Y 4/1) organo-clay films in root channels and pores; common fine prominent dark yellowish brown (10YR 4/4) and few fine prominent dark brown (7.5YR 3/4) masses of oxidized iron-manganese and strong brown (7.5YR 4/6) masses of oxidized iron throughout; neutral; clear smooth boundary.

Bg3—35 to 48 inches; gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; very few faint dark gray (5Y 4/1) organo-clay films in root channels and pores; few fine prominent dark yellowish brown (10YR 4/4) and few fine prominent dark brown (7.5YR 3/4) masses of oxidized iron-manganese and strong brown (7.5YR 4/6) masses of oxidized iron throughout; neutral; clear smooth boundary.

BCg—48 to 60 inches; gray (5Y 5/1), stratified silt loam and silty clay loam; weak medium prismatic structure; friable; very few faint dark gray (5Y 4/1) organo-clay films in root channels and pores; common fine prominent dark yellowish brown (10YR 4/4) and few fine prominent dark brown (7.5YR 3/4) and strong brown (7.5YR 4/6) masses of oxidized iron-manganese throughout; neutral; clear smooth boundary.

Cg1—60 to 70 inches; dark gray (10YR 4/1), stratified silt loam and silty clay loam; massive; friable; common fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; neutral; clear smooth boundary.

Cg2—70 to 80 inches; dark gray (10YR 4/1), stratified silt loam and silty clay loam; massive; friable; common fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 35 to 65 inches

Ap or A horizon(s):
Hue—10YR or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

Bg or Btg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam

BCg and/or Cg horizon(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—stratified silty clay loam, silt loam, loam, sandy loam, fine sandy loam, or very fine sandy loam

7070A—Beaucoup silty clay loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Flood plains (fig. 5)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil
- Soils that have more clay in the subsoil

Dissimilar soils:
- The somewhat poorly drained Flanagan soils in the higher positions that are not subject to flooding

Properties and Qualities of the Beaucoup Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5 to 6 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Rare, November through June

Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Birkbeck Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Birkbeck silt loam, 2 to 5 percent slopes, at an elevation of about 680 feet; Macon County, Illinois; 1,600 feet east and 750 feet south of the northwest corner of sec. 25, T. 17 N., R. 3 E.; USGS Argenta, Illinois, topographic quadrangle; lat. 39 degrees 54 minutes 25.3 seconds N. and long. 88 degrees 48 minutes 59.7 seconds W.; UTM Zone 16, 344718 easting, 4419014 northing; NAD 83:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to moderate very fine granular; friable; slightly acid; abrupt smooth boundary.

E—4 to 9 inches; brown (10YR 4/3) silt loam; moderate very thin platy structure; friable; few distinct dark brown (10YR 3/3) organic coatings on faces of peds; few distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; very strongly acid; clear smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure parting to moderate very fine granular; friable; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few fine prominent irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; strongly acid; clear smooth boundary.

Bt2—13 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; few fine prominent irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; strongly acid; clear smooth boundary.

Bt3—24 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine prominent irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; strongly acid; clear smooth boundary.

Bt4—29 to 42 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) masses of oxidized iron in the matrix; common medium prominent irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; strongly acid; gradual smooth boundary.

Bt5—42 to 54 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; few fine distinct light brownish gray (2.5Y

6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) and few medium distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common medium prominent irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; slightly acid; clear smooth boundary.

2Bt6—54 to 60 inches; dark yellowish brown (10YR 4/4) loam; weak coarse subangular blocky structure; friable; few distinct brown (7.5YR 4/4) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common medium distinct light yellowish brown (2.5Y 6/4) and common fine distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; few fine prominent irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; neutral; gradual smooth boundary.

2C—60 to 68 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine faint light yellowish brown (2.5Y 6/4) and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine prominent irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of soil development: 40 to 70 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches

Ap or A horizon(s):
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt and 2BC horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam
Content of rock fragments—0 to 15 percent by volume

2C horizon(s):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—loam
Content of rock fragments—0 to 15 percent by volume

233B2—Birkbeck silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes (fig. 6)

Map Unit Composition

Birkbeck and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface soil
- Soils that have less sand in the underlying material
- Soils that have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The well drained Senachwine soils in the lower positions on side slopes

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

233C2—Birkbeck silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 6)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have more sand in the upper part of the subsoil
- Soils that have more clay in the subsoil

Dissimilar soils:
- The well drained Senachwine soils in the lower positions on side slopes
- The somewhat poorly drained Keomah soils in the lower, less sloping positions

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

233D2—Birkbeck silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the surface layer
- Soils that have more sand in the upper part of the subsoil
- Soils that have more clay in the subsoil

Dissimilar soils:
- The well drained Senachwine and Hennepin soils in the lower positions on side slopes
- The somewhat poorly drained Keomah soils in the lower, less sloping positions

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Blackberry Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Blackberry silt loam, 2 to 5 percent slopes, at an elevation of about 748 feet; Champaign County, Illinois; 25 feet north and 450 feet west of the southeast corner of sec. 19, T. 21 N., R. 7 E.; USGS Foosland, Illinois, topographic quadrangle; lat. 40 degrees 15 minutes 10 seconds N. and long. 88 degrees 26 minutes 36 seconds W.; UTM Zone 16, 377246 easting, 4456817 northing; NAD 83:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; neutral; abrupt smooth boundary.

A—10 to 16 inches; dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

BA—16 to 20 inches; brown (10YR 4/3) silty clay loam; weak very fine subangular blocky structure; friable; many distinct dark brown (10YR 3/3) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—20 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—24 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; few fine irregular prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules in the matrix; moderately acid; clear smooth boundary.

Bt3—34 to 47 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse prismatic structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine irregular prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules in the matrix; moderately acid; clear smooth boundary.

2Bt4—47 to 62 inches; yellowish brown (10YR 5/4), stratified silt loam and loam; weak coarse subangular blocky structure; friable; very few distinct brown (10YR 4/3) and grayish brown (10YR 5/2) clay films lining pores and on faces of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine irregular prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules in the matrix; slightly acid; gradual smooth boundary.

2C—62 to 70 inches; light olive brown (2.5Y 5/4), stratified silt loam, loam, and sandy loam; massive; friable; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine irregular prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 45 to 70 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

BA or AB horizon(s) (where present):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—stratified loam and silt loam
Content of rock fragments—0 to 15 percent by volume

2C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—stratified loam, sandy loam, and silt loam
Content of rock fragments—0 to 15 percent by volume

679A—Blackberry silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits

Map Unit Composition

Blackberry and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand within a depth of 40 inches

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Blackberry Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

679B—Blackberry silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have more sand within a depth of 40 inches
- Soils that have less sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Blackberry Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Buckhart Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Buckhart silt loam, 2 to 5 percent slopes, at an elevation of about 603 feet; Christian County, Illinois; 360 feet west and 540 feet north of the southeast corner of sec. 24, T. 14 N., R. 3 W.; USGS Grove City, Illinois, topographic quadrangle; lat. 39 degrees 38 minutes 31 seconds N. and long. 89 degrees 22 minutes 10 seconds W.; UTM Zone 16, 296686 easting, 4390706 northing; NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; few very fine roots; moderately acid; clear smooth boundary.

A—8 to 15 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; moderately acid; clear smooth boundary.

Bt1—15 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure parting to moderate medium granular; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds and few distinct very dark grayish brown (10YR 3/2) organic coatings lining root channels and pores; slightly acid; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine irregular distinct strong brown (7.5YR 5/6) masses of oxidized iron along pores and few fine irregular distinct light brownish gray (2.5Y 6/2) iron depletions along pores; neutral; clear smooth boundary.

Bt3—37 to 52 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine irregular prominent strong brown (7.5YR 5/6) masses of oxidized iron along pores and few fine spherical prominent black (7.5YR 2.5/1) manganese nodules throughout and common fine irregular distinct light brownish gray (2.5Y 6/2) iron depletions along pores; slightly acid; clear smooth boundary.

BCt—52 to 67 inches; light olive brown (2.5Y 5/3) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films lining root channels and pores; common fine irregular prominent strong brown (7.5YR 5/6) masses of iron along pores, common fine irregular faint light brownish gray (2.5Y 6/2) iron depletions along pores, and few fine spherical prominent black (7.5YR 2.5/1) manganese nodules throughout; neutral; gradual smooth boundary.

C—67 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common medium irregular distinct strong brown (7.5YR 5/6) masses of oxidized iron, common medium irregular distinct light brownish gray (2.5Y 6/2) iron depletions, and few fine spherical prominent black (7.5YR 2.5/1) manganese nodules throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of soil development: 40 to 70 inches
Depth to carbonates (if they occur): More than 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

BC, BCt, or BCg horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

C or Cg horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture—silt loam

705B—Buckhart silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines, knolls
Position on the landform: Summits, shoulders, and backslopes (fig. 5)

Map Unit Composition

Buckhart and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have a thinner surface soil
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Buckhart Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Calco Series

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, mesic Cumulic Endoaquolls

Typical Pedon

Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded, long duration, at an elevation of 450 feet; Woodford County, Illinois; 1,800 feet north and 2,600 feet west of the southeast corner of sec. 21, T. 28 N., R. 3 W.; USGS Germantown Hills Northwest, Illinois, topographic quadrangle; lat. 40 degrees 52 minutes 9 seconds N. and long. 89 degrees 27 minutes 23 seconds W.; UTM Zone 16, 292997 easting, 4527137 northing; NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, very dark grayish brown (10YR 3/2) dry; weak very fine granular structure; friable; few very fine roots; strongly effervescent; moderately alkaline; abrupt smooth boundary.

A1—8 to 17 inches; black (10YR 2/1) silty clay loam, very dark grayish brown (10YR 3/2) dry; moderate very fine angular blocky structure; friable; common fine and very fine roots; slightly effervescent; moderately alkaline; diffuse wavy boundary.

A2—17 to 27 inches; black (10YR 2/1) silty clay loam, very dark grayish brown (10YR 3/2) dry; moderate fine angular blocky structure; friable; common fine and very fine roots; strongly effervescent; moderately alkaline; diffuse wavy boundary.

A3—27 to 36 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; common fine and very fine roots; common fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; strongly effervescent; moderately alkaline; diffuse wavy boundary.

Bg1—36 to 44 inches; dark gray (5Y 4/1) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; strongly effervescent; moderately alkaline; diffuse wavy boundary.

Bg2—44 to 57 inches; dark gray (5Y 4/1) silty clay loam; weak medium and coarse prismatic structure parting to weak medium and coarse subangular blocky; friable; few fine roots; many fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; strongly effervescent; moderately alkaline; diffuse wavy boundary.

Bkg—57 to 63 inches; dark gray (5Y 4/1) silty clay loam; weak coarse subangular blocky structure; firm; few fine roots; many fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; common medium masses of carbonate; 2 percent mixed rock fragments; strongly effervescent; moderately alkaline; diffuse wavy boundary.

Cg—63 to 80 inches; dark gray (5Y 4/1) silt loam; many fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; massive; friable; 3 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 30 to 60 inches
Depth to carbonates: 0 to 10 inches
Other features: Some pedons have an AC horizon.

Ap or A horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2, 2.5, or 3
Chroma—0 or 1
Texture—silty clay loam

Bg, Bkg, or BCg horizons(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam
Content of rock fragments—0 to 2 percent by volume

Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 3
Texture—silty clay loam, silt loam, or loam
Content of rock fragments—0 to 5 percent by volume

8400L—Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded, long duration

Setting

Landform: Flood plains

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the subsoil
- Soils that have a thinner dark surface soil
- Soils that have a lighter colored surface soil and have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The very poorly drained Lena soils in the slightly lower positions on the flood plain

Properties and Qualities of the Calco Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5 to 7 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Camden Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Camden silt loam, on a north-facing slope of 3 percent in a cultivated field; Champaign County, Illinois; about 6 miles northeast of Penfield; 30 feet north and 100 feet west of the southeast corner of sec. 6, T. 22 N., R. 14 W.; USGS Rankin topographic quadrangle; lat. 40 degrees 23 minutes 6.1 seconds N. and long. 87 degrees 58 minutes 16.1 seconds W.; UTM Zone 16T, 0417570 easting, 4470947 northing; NAD 83:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and very fine granular structure; friable; neutral; abrupt smooth boundary.

E—9 to 14 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate thin platy structure; friable; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; neutral; abrupt smooth boundary.

Bt1—14 to 18 inches; yellowish brown (10YR 5/4) silt loam; weak very fine subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; neutral; clear smooth boundary.

Bt2—18 to 22 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.

Bt3—22 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron-manganese nodules throughout; moderately acid; clear smooth boundary.

Bt4—28 to 35 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese nodules throughout; 3 percent, by volume, chert pebbles; moderately acid; clear smooth boundary.

2Bt5—35 to 52 inches; yellowish brown (10YR 5/6) loam; moderate coarse prismatic structure parting to weak medium subangular blocky; friable; common distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; 5 percent, by volume, chert and quartz pebbles; moderately acid; clear smooth boundary.

2Bt6—52 to 62 inches; brown (10YR 4/3) and yellowish brown (10YR 5/4) sandy loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few faint brown (10YR 4/3) clay bridges between sand grains; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; few fine faint brown (10YR 5/3) iron-manganese accumulations in the matrix; 5 percent, by volume, chert and quartz pebbles; moderately acid; clear smooth boundary.

2C—62 to 80 inches; yellowish brown (10YR 5/4 and 5/6), stratified sandy loam, loam, and sandy clay loam; massive; very friable; moderately acid.

Range in Characteristics

Thickness of the loess: 24 to 40 inches
Depth to the base of soil development: 30 to 65 inches
Depth to carbonates: More than 60 inches

Ap horizon(s):
Hue—10YR
Value—3 to 5 (3 in horizons that are less than 6 inches thick)
Chroma—2 or 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 to 6

Chroma—2 to 4
Texture—silt loam

Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, loam, sandy loam, or silt loam
Content of rock fragments—0 to 10 percent by volume

2C horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified sandy loam, loam, loamy sand, and sandy clay loam
Content of rock fragments—0 to 10 percent by volume

134A—Camden silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Map Unit Composition

Camden and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil
- Soils that have more sand in the subsoil

Dissimilar soils:
- The well drained Huntsville soils on flood plains
- The somewhat poorly drained Lawson soils on flood plains
- The well drained Senachwine soils on backslopes; in positions above those of the Camden soil

Properties and Qualities of the Camden Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None

Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

134B—Camden silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have more sand in the subsoil
- Soils that have less sand in the lower part of the subsoil

Dissimilar soils:
- The well drained Huntsville soils on flood plains
- The somewhat poorly drained Lawson soils on flood plains
- The well drained Senachwine soils on backslopes; in positions above those of the Camden soil

Properties and Qualities of the Camden Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

134C2—Camden silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the subsoil
- Soils that have a thicker surface layer
- Soils that have less sand in the underlying material and have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The well drained Huntsville soils on flood plains
- The well drained Senachwine soils on backslopes; in positions above those of the Camden soil

Properties and Qualities of the Camden Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Catlin Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Catlin soils in map units 171B2 and 171C2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Catlin silt loam, 2 to 5 percent slopes, at an elevation of about 830 feet; Ogle County, Illinois; 650 feet south and 571 feet east of the northwest corner of sec. 36, T. 42 N., R. 2 E.; USGS Fairdale, Illinois, topographic quadrangle; lat. 42 degrees 04 minutes 38 seconds N. and long. 88 degrees 57 minutes 17 seconds W.; UTM Zone 16, 338299 easting, 4660202 northing; NAD 83:

Ap—0 to 11 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

BA—11 to 18 inches; brown (10YR 4/3) silt loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few faint dark brown (10YR 3/3) organic coatings on faces of peds; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—18 to 23 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to strong fine and medium subangular blocky; friable; many faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt2—23 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to strong medium angular and subangular blocky; firm; few distinct very dark brown (10YR 2/2) organo-clay films on surfaces along root channels; many faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few black (N 2.5/) weakly cemented iron-manganese concretions throughout; few fine faint brown (7.5YR 4/4) masses of oxidized iron-manganese and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

Bt3—31 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; strong medium prismatic structure parting to strong medium angular and subangular blocky; firm; common prominent grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few black (N 2.5/) weakly cemented iron-manganese concretions throughout; few fine faint brown (7.5YR 4/4) extremely weakly cemented iron-manganese accumulations and distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt4—36 to 44 inches; yellowish brown (10YR 5/4), brown (7.5YR 4/4), and light brownish gray (2.5Y 6/2) silty clay loam; weak coarse prismatic structure parting to moderate coarse subangular blocky; firm; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few distinct very dark brown (10YR 2/2) organo-clay films on surfaces along root channels; slightly acid; abrupt smooth boundary.

2Bt5—44 to 49 inches; dark yellowish brown (10YR 4/4) clay loam; weak coarse subangular blocky structure; firm; few faint brown (10YR 5/3) clay films on vertical faces of peds; few distinct very dark brown (10YR 2/2) organo-clay films on surfaces along root channels; slightly alkaline; clear smooth boundary.

2C—49 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 18 inches
Thickness of the loess: 40 to 60 inches
Depth to the base of soil development: 45 to 60 inches

Depth to carbonates: 40 to 60 inches
Other features: Some pedons have a BA horizon.

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam or silty clay loam

Bt horizon(s):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 8
Texture—loam or clay loam
Content of rock fragments—0 to 10 percent by volume

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 8
Texture—loam
Content of rock fragments—0 to 10 percent by volume

171B—Catlin silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 7)

Map Unit Composition

Catlin and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have more sand in the subsoil
- Soils that have less sand in the underlying material
- Soils that have more clay in the subsoil, less sand in the underlying material, and a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The poorly drained Elpaso and Sable soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches

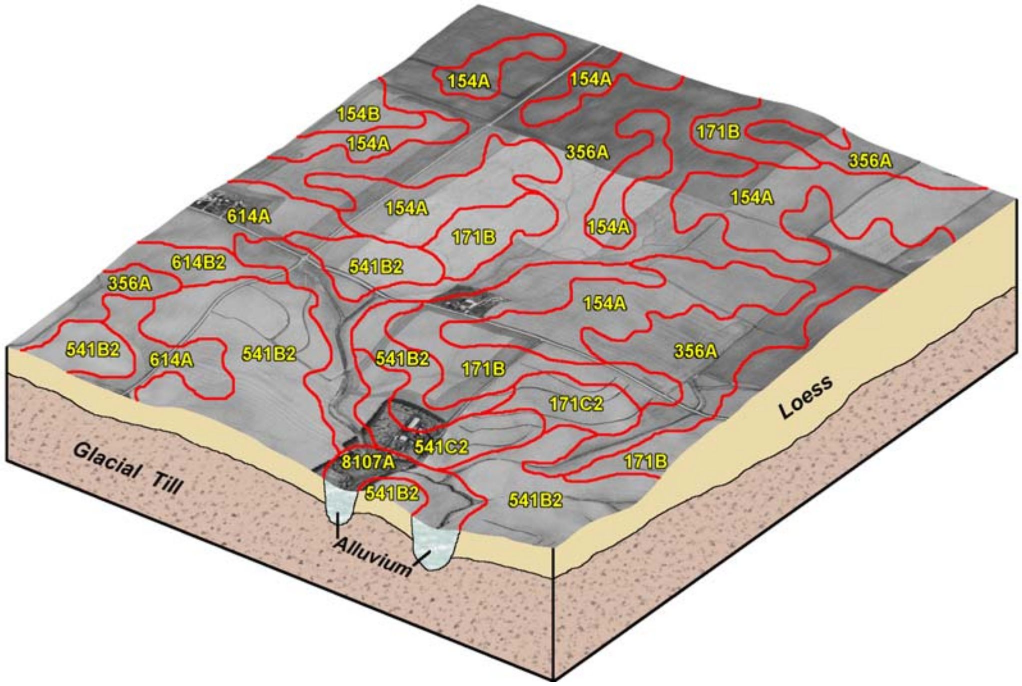


Figure 7.—Typical pattern of nearly level and gently sloping upland prairie soils that formed in loess and the underlying glacial till and nearly level soils that formed in alluvium on flood plains.

Available water capacity: About 9.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

171B2—Catlin silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Catlin and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface soil
- Soils that have more sand in the subsoil
- Soils that have less sand in the underlying material
- Soils that have more clay in the subsoil, less sand in the underlying material, and a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The poorly drained Elpaso and Sable soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

171C2—Catlin silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes (fig. 7)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface soil
- Soils that have more sand in the subsoil
- Soils that have less sand in the underlying material
- Soils that have more clay throughout

Dissimilar soils:
- The poorly drained Elpaso and Sable soils in swales

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Chatsworth Series

Taxonomic classification: Fine, illitic, mesic Oxyaquic Eutrudepts

Typical Pedon

Chatsworth silty clay loam, 4 to 7 percent slopes, eroded, at an elevation of 731 feet; Woodford County, Illinois; 260 feet north and 60 feet west of the southeast corner of sec. 33, T. 28 N., R. 2 E.; USGS Flanagan Southwest, Illinois, topographic quadrangle; lat. 40 degrees 50 minutes 24.7 seconds N. and long. 88 degrees 59 minutes 18.2 seconds W.; UTM Zone 16, 332365 easting, 4522921 northing; NAD 83:

Ap—0 to 6 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; firm; many fine and very fine roots; slightly alkaline; abrupt smooth boundary.

Bw1—6 to 9 inches; olive (5Y 4/3) silty clay; moderate fine and medium prismatic structure parting to moderate medium subangular blocky; very firm; common fine and very fine roots; many distinct dark gray (10YR 4/1) clay films on faces of peds; common fine and medium prominent greenish gray (5G 5/1) iron depletions throughout and common fine and medium distinct light olive brown (2.5Y 5/4) masses of oxidized iron throughout; 1 percent mixed rock fragments; slightly effervescent; slightly alkaline; gradual wavy boundary.

Bw2—9 to 16 inches; olive (5Y 4/3) silty clay; weak fine and medium prismatic structure parting to weak medium subangular blocky; extremely firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine and medium prominent greenish gray (5G 5/1) iron depletions and common fine and medium distinct light olive brown (2.5Y 5/4) masses of oxidized iron throughout; few fine masses of carbonate; 1 percent mixed rock fragments; violently effervescent; moderately alkaline; gradual wavy boundary.

BCk—16 to 31 inches; olive (5Y 4/3) silty clay; weak coarse prismatic structure; extremely firm; few very fine roots; 5 percent distinct dark gray (10YR 4/1) pressure faces on faces of peds; common medium and coarse prominent greenish gray (5G 5/1) iron depletions and common fine and medium distinct olive brown (2.5Y 4/4) masses of oxidized iron-manganese throughout; common medium masses of carbonate; 1 percent mixed rock fragments; violently effervescent; moderately alkaline; gradual wavy boundary.

Cdk—31 to 60 inches; olive (5Y 4/3) silty clay; massive; extremely firm; common medium and coarse prominent greenish gray (5G 5/1) iron depletions throughout; common fine carbonate concretions; 1 percent mixed rock fragments; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of soil development: 10 to 31 inches
Depth to carbonates: 0 to 20 inches
Other features: Some pedons have a BCk horizon.

A or Ap horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—3 or 4 (5 or 6 dry)
Chroma—1 to 3
Texture—silty clay or silty clay loam

Bw horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 or 3
Texture—silty clay, clay, or silty clay loam
Content of rock fragments—0 to 3 percent by volume

Cd or Cdk horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 to 6
Texture—silty clay, clay, or silty clay loam
Content of rock fragments—0 to 3 percent by volume

241C2—Chatsworth silty clay loam, 4 to 7 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 8)

Map Unit Composition

Chatsworth and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the surface layer
- Soils that have less clay in the upper part of the subsoil
- Soils that have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The poorly drained Streator soils on toeslopes

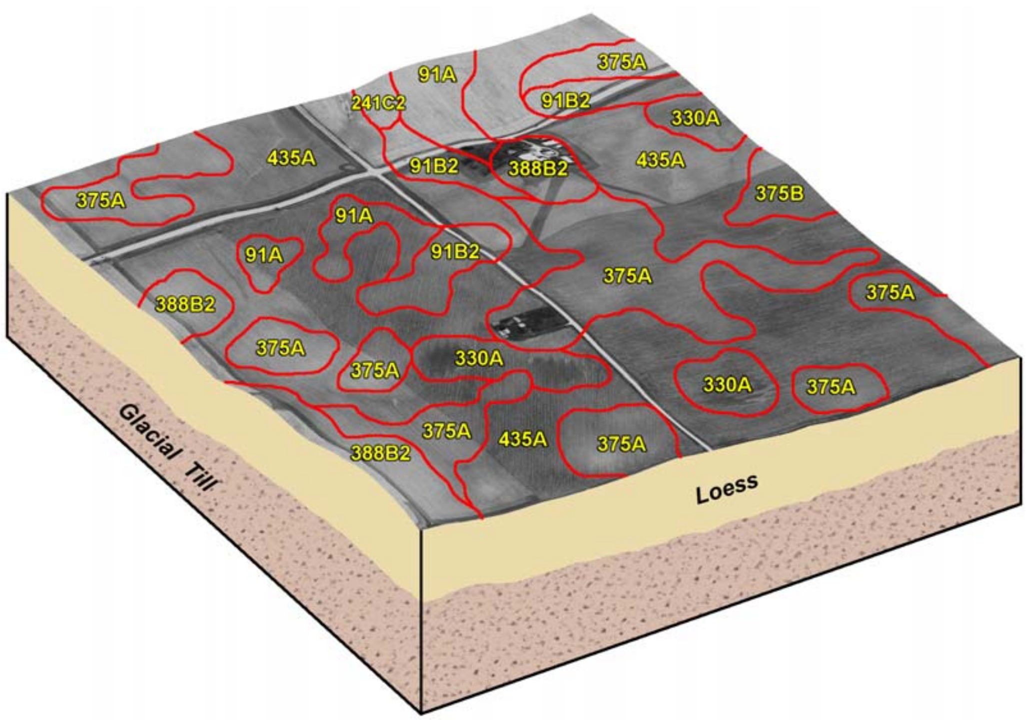


Figure 8.—Typical pattern of nearly level to moderately sloping upland prairie and forest soils that formed in loess and the underlying glacial till, in colluvial sediments, or entirely in glacial till.

Properties and Qualities of the Chatsworth Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 24 to 36 inches to dense material
Available water capacity: About 3.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 4s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

241C3—Chatsworth silty clay, 4 to 6 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the surface layer
- Soils that have less clay in the upper part of the subsoil
- Soils that have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Chatsworth Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 10 to 24 inches to dense material
Available water capacity: About 3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Chenoa Series

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls
Taxadjunct features: The Chenoa soil in map unit 614B2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine, illitic, mesic Aquollic Hapludalf.

Typical Pedon

Chenoa silty clay loam, in a nearly level area in a cultivated field; Livingston County, Illinois; 865 feet west and 105 feet south of the northeast corner of sec. 2, T. 27 N., R.

3 E.; USGS Flanagan South topographic quadrangle; lat. 40 degrees 50 minutes 31 seconds N. and long. 88 degrees 50 minutes 13 seconds W.; UTM Zone 16, 345124 easting, 4522838 northing; NAD 83:

Ap—0 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

BA—12 to 16 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—21 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg2—26 to 32 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common medium faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt—32 to 36 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly alkaline; clear smooth boundary.

2C—36 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; few prominent light brownish gray (10YR 6/2) coatings on vertical cleavage planes; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 18 inches
Thickness of the loess: 20 to 40 inches
Depth to the base of soil development: 25 to 56 inches
Depth to carbonates: 25 to 45 inches
Other features: Some pedons have an AB horizon instead of a BA horizon.

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silty clay loam

Bt or Btg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silty clay

2Bt, 2Bk, or 2BC horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam
Content of rock fragments—0 to 10 percent

2C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam
Content of rock fragments—0 to 10 percent

614A—Chenoa silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and footslopes (fig. 7)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil
- Soils that have less clay in the subsoil

Dissimilar soils:
- The poorly drained Elpaso soils in swales

Properties and Qualities of the Chenoa Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 25 to 45 inches to dense material
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Perched seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

614B2—Chenoa silty clay loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 7)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil
- Soils that have less sand in the lower part of the subsoil
- Soils that have less clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils in swales

Properties and Qualities of the Chenoa Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 25 to 45 inches to dense material
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: High
Perched seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Clare Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Clare silt loam, 0 to 2 percent slopes, at an elevation of about 731 feet; McLean

County, Illinois; 1,560 feet north and 2,070 feet west of the southeast corner of sec. 26, T. 25 N., R. 4 E.; USGS Cooksville, Illinois, topographic quadrangle; lat. 40 degrees 35 minutes 34 seconds N. and long. 88 degrees 42 minutes 53 seconds W.; UTM Zone 16, 354916 easting, 4494964 northing; NAD 83:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

BA—11 to 16 inches; brown (10YR 4/3) silt loam; weak very fine subangular blocky structure parting to moderate fine granular; friable; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine masses of iron-manganese throughout; slightly acid; clear smooth boundary.

Bt1—16 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct black (10YR 2/1) masses of manganese throughout; slightly acid; clear smooth boundary.

Bt2—24 to 30 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

2Bt3—30 to 44 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron and few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; common medium distinct black (10YR 2/1) masses of manganese throughout; 5 percent gravel; neutral; gradual smooth boundary.

2C—44 to 60 inches; light olive brown (2.5Y 5/4) silt loam with strata of loam; massive; friable; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; common medium prominent black (10YR 2/1) masses of manganese throughout; 5 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of soil development: 40 to 70 inches
Depth to carbonates: More than 40 inches
Thickness of the loess: 20 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

BA and/or Bt horizon(s):
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 to 6
Texture—silty clay loam or silt loam

2Bt horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6

Chroma—3 to 6
Texture—clay loam
Content of rock fragments—1 to 15 percent by volume

2C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—stratified silt loam to loam
Content of rock fragments—2 to 15 percent by volume

663A—Clare silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil
- Soils that have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Clare Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Colo Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Colo silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 731 feet; Woodford County, Illinois; 1,912 feet south and 117 feet west of the northeast corner of sec. 20, T. 27 N., R. 1 W.; USGS Roanoke Southwest, Illinois, topographic quadrangle; lat. 40 degrees 47 minutes 16.3 seconds N. and long. 89 degrees 14 minutes 6.6 seconds W.; UTM Zone 16, 311410 easting, 4517614 northing; NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

A1—8 to 18 inches; black (10YR 2/1) silty clay loam, very dark grayish brown (10YR 3/2) dry; weak very fine granular structure; friable; common very fine roots; neutral; gradual wavy boundary.

A2—18 to 30 inches; black (10YR 2/1) silty clay loam, very dark gray (10YR 3/1) dry; moderate fine granular structure; friable; common very fine roots; neutral; gradual wavy boundary.

A3—30 to 37 inches; black (10YR 2/1) silty clay loam, very dark gray (10YR 3/1) dry; moderate fine subangular blocky structure; friable; few very fine roots; neutral; gradual wavy boundary.

Bg1—37 to 44 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; many fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; neutral; gradual wavy boundary.

Bg2—44 to 57 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; many fine prominent dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; neutral; gradual wavy boundary.

BCg—57 to 64 inches; dark gray (5Y 4/1) silty clay loam; weak coarse prismatic structure; friable; many fine prominent yellowish brown (10YR 5/6) masses of oxidized iron throughout and many medium faint light olive gray (5Y 6/2) iron depletions throughout; neutral; gradual wavy boundary.

Cg—64 to 80 inches; dark gray (5Y 4/1) silty clay loam; massive; friable; many fine prominent yellowish brown (10YR 5/6) masses of oxidized iron throughout and many medium faint light olive gray (5Y 6/2) iron depletions throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: More than 35 inches
Depth to carbonates: More than 60 inches
Other features: Some pedons have an AC horizon.

Ap or A horizon(s):
Hue—10YR to 5Y or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam or silt loam

BA horizon(s) (where present):
Hue—10YR or 2.5Y
Value—2 to 3
Chroma—1 or 2
Texture—silty clay loam

Bg horizon(s):
Hue—10YR or 2.5Y
Value—2 to 4

Chroma—1
Texture—silty clay loam
Content of rock fragments—0 to 2 percent by volume

BCg horizon(s):
Hue—10YR to 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam
Content of rock fragments—0 to 2 percent by volume

Cg horizon(s):
Hue—10YR to 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or clay loam
Content of rock fragments—0 to 2 percent by volume

8402A—Colo silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Colo and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner dark surface soil
- Soils that have a seasonal high water table at a depth of more than 1 foot

Properties and Qualities of the Colo Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Coloma Series

Taxonomic classification: Mixed, mesic Lamellic Udipsamments

Typical Pedon

Coloma sand, 1 to 7 percent slopes, at an elevation of 570 feet; Mercer County, Illinois; 1,500 feet east and 1,800 feet south of the northwest corner of sec. 20, T. 14 N., R. 5 W.; USGS Joy, Illinois, topographic quadrangle; lat. 41 degrees 11 minutes 56 seconds N. and long. 90 degrees 59 minutes 23 seconds W.; UTM Zone 15, 668551 easting, 4562782 northing; NAD 83:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) sand, light brownish gray (10YR 6/2) dry; weak medium granular structure; very friable; neutral; clear wavy boundary.
Bw1—9 to 16 inches; brown (10YR 4/3) sand; single grain; loose; neutral; gradual wavy boundary.
Bw2—16 to 29 inches; dark yellowish brown (10YR 4/4) sand; single grain; loose; slightly acid; gradual wavy boundary.
Bw3—29 to 50 inches; yellowish brown (10YR 5/4) sand; single grain; loose; slightly acid; abrupt smooth boundary.
E and Bt1—50 to 65 inches; about 95 percent yellowish brown (10YR 5/4) sand (E); single grain; loose; about 5 percent brown (7.5YR 4/4) loamy sand (Bt) consisting of several thin lamellae (total thickness less than 1 inch); weak fine and medium subangular blocky structure; very friable; neutral; clear smooth boundary.
E and Bt2—65 to 80 inches; about 90 percent yellowish brown (10YR 5/4) sand (E); single grain; loose; about 10 percent brown (7.5YR 4/4) loamy sand (Bt) consisting of several thin lamellae (total thickness less than 2 inches); weak fine and medium subangular blocky structure; very friable; neutral.

Range in Characteristics

Depth to the first lamellae: 20 to 60 inches
Total thickness of the lamellae: Less than 6 inches to a depth of 80 inches

Ap or A horizon(s):
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—1 to 3
Texture—sand

Bw horizon(s):
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—4 to 6
Texture—sand or loamy sand

E part of the E and Bt horizon(s):
Hue—5YR, 7.5YR, or 10YR
Value—4 to 7
Chroma—3 to 6
Texture—sand

Bt part of the E and Bt horizon(s):
Hue—5YR, 7.5YR, or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—loamy sand

C horizon(s) (where present):
Hue—5YR, 7.5YR, or 10YR
Value—4 to 7
Chroma—3 to 6
Texture—sand

689B—Coloma sand, 1 to 7 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and shoulders (fig. 4)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have more clay in the subsoil

Dissimilar soils:
- The well drained Jasper and Dakota soils in the lower positions

Properties and Qualities of the Coloma Soil

Parent material: Eolian sands
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: 4s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

689D—Coloma sand, 7 to 15 percent slopes

Setting

Landform: Stream terraces and dunes
Position on the landform: Shoulders and backslopes (fig. 4)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have more clay in the subsoil

Dissimilar soils:
- The well drained Jasper and Dakota soils in the lower positions

Properties and Qualities of the Coloma Soil

Parent material: Eolian sands
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: 6s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Dakota Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Dakota loam, 0 to 2 percent slopes, at an elevation of about 526 feet; Woodford County, Illinois; 2,463 feet north and 510 feet east of the southwest corner of sec. 25, T. 27 N., R. 4 W.; USGS Spring Bay, Illinois, topographic quadrangle; lat. 40 degrees 46 minutes 9.7 seconds N. and long. 89 degrees 31 minutes 14.8 seconds W.; UTM Zone 16, 287250 easting, 4516213 northing; NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few fine roots; moderately acid; clear smooth boundary.

A—9 to 14 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few very fine roots; moderately acid; gradual smooth boundary.

Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) loam; weak fine subangular blocky structure; very friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; many distinct very dark grayish brown (10YR

3/2) organo-clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt2—21 to 31 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; very friable; few very fine roots; few distinct dark yellowish brown (10YR 3/4) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—31 to 34 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many clay bridges between sand grains; few very fine roots; moderately acid; gradual smooth boundary.

2C—34 to 60 inches; brown (7.5YR 4/4) loamy sand; single grain; loose; few very fine roots; 2 percent gravel; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to sandy material: 20 to 40 inches
Depth to carbonates: More than 40 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 to 3
Chroma—2 or 3
Texture—loam
Content of rock fragments—0 to 10 percent by volume

Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—loam, sandy loam, or clay loam
Content of rock fragments—0 to 10 percent by volume

2Bt or 2BC horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—loamy sand, loamy coarse sand, sand, or coarse sand
Content of rock fragments—0 to 15 percent by volume

2C horizon(s):
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—2 to 6
Texture—loamy sand or sand
Content of rock fragments—0 to 15 percent by volume

379A—Dakota loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and talfs (fig. 4)

Map Unit Composition

Dakota and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil
- Soils that have less clay in the subsoil

Dissimilar soils:
- The excessively drained Coloma soils in positions above those of the Dakota soil

Properties and Qualities of the Dakota Soil

Parent material: Loamy sediments over sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Available water capacity: About 7.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Drummer Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Drummer silty clay loam, 0 to 2 percent slopes, at an elevation of about 715 feet; Champaign County, Illinois; 300 feet north and 1,600 feet east of the southwest corner of sec. 19, T. 19 N., R. 9 E.; USGS Urbana, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 4.1 seconds N. and long. 88 degrees 13 minutes 58.2 seconds W.; UTM Zone 16, 394894 easting, 4437861 northing; NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; firm; many fine roots; moderately acid; clear smooth boundary.

A—7 to 14 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to weak fine granular; firm; many fine and medium roots throughout; slightly acid; clear smooth boundary.

BA—14 to 19 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; many fine and medium roots; few fine faint very dark grayish brown (2.5Y 3/2) masses of oxidized iron-manganese in the matrix; slightly acid; gradual smooth boundary.

Bg—19 to 25 inches; dark gray (10YR 4/1) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common fine distinct and prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; many worm holes; neutral; gradual smooth boundary.

Btg1—25 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common distinct dark gray (N 4/) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/4) masses of oxidized iron-manganese in the matrix; neutral; gradual wavy boundary.

Btg2—32 to 41 inches; gray (N 5/) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few fine roots; few distinct dark gray (N 4/) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of oxidized iron-manganese in the matrix; neutral; clear wavy boundary.

2Btg3—41 to 47 inches; gray (N 5/) loam; weak coarse subangular blocky structure; friable; few fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 4 percent fine gravel; neutral; abrupt wavy boundary.

2Cg—47 to 60 inches; dark gray (10YR 4/1), stratified loam and sandy loam; massive; friable; many medium prominent olive brown (2.5Y 4/4) masses of oxidized iron-manganese in the matrix; many medium distinct gray (N 5/) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 65 inches

Ap, A, or AB horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

BA, Bg, or Btg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 4
Texture—silty clay loam

2Btg, 2Bg, or 2BCg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—loam
Content of rock fragments—0 to 7 percent by volume

2Cg or 2C horizon(s):
Hue—7.5YR, 10YR, 2.5Y, 5Y, or N
Value—4 to 7
Chroma—0 to 8
Texture—stratified loam to sandy loam
Content of rock fragments—0 to 15 percent by volume

152A—Drummer silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Toeslopes and talfs

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface soil
- Soils that have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The well drained Proctor soils in the higher positions

Properties and Qualities of the Drummer Soil

Parent material: Loess over outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

721A—Drummer and Elpaso silty clay loams, 0 to 2 percent slopes

Setting

Landform: Drummer—outwash plains; Elpaso—ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 0 to 100 percent
Elpaso and similar soils: 0 to 100 percent
Dissimilar soils: 0 to 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have more clay in the subsoil

Dissimilar soils:
- The moderately well drained Graymont soils in the higher positions
- The very poorly drained Peotone soils in depressions

Properties and Qualities of the Drummer Soil

Parent material: Loess over loamy outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Properties and Qualities of the Elpaso Soil

Parent material: Loess over till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Drummer—2w; Elpaso—2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Drummer—hydric; Elpaso—hydric

536—Dumps, mine

General Description

- This map unit consists of steep and very steep mounds of spoil from old coal mine shafts.

Map Unit Composition

Dumps, mine: 95 percent
Dissimilar components: 5 percent

Components of Minor Extent

Dissimilar components:
- The poorly drained, occasionally flooded Colo and Sawmill soils in undisturbed areas
- The poorly drained Streator soils in undisturbed areas
- The somewhat poorly drained Rutland soils in undisturbed areas

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

835G—Earthen dam

General Description

- This map unit consists of relatively large earthen embankments that are designed to retain water.

Map Unit Composition

Earthen dam: 95 percent
Dissimilar components: 5 percent

Components of Minor Extent

Dissimilar components:
- The well drained Senachwine and Hennepin soils in undisturbed areas
- The moderately well drained, loamy Orthents in the adjacent less sloping positions

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

Elburn Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Elburn silt loam, 0 to 2 percent slopes, at an elevation of about 617 feet; Christian County, Illinois; 2,716 feet north and 1,300 feet west of the southeast corner of sec. 36, T. 14 N., R. 1 E.; USGS Assumption, Illinois, topographic quadrangle; lat. 39 degrees 37 minutes 5 seconds N. and long. 89 degrees 1 minute 46 seconds W.; UTM Zone 16, 325797 easting, 4387329 northing; NAD 83:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—6 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots;

many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron and few fine faint brown (10YR 5/3) masses of oxidized iron-manganese in the matrix; few fine iron-manganese concretions throughout; slightly acid; clear smooth boundary.

Bt2—21 to 28 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt3—28 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt4—36 to 43 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few prominent very dark gray (10YR 3/1) organo-clay films and few distinct brown (10YR 5/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

Btg—43 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

2BCtg—49 to 58 inches; grayish brown (2.5Y 5/2), stratified silt loam, loam, and sandy loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on surfaces along pores; common medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few very fine iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

2Cg—58 to 62 inches; grayish brown (2.5Y 5/2), stratified sandy loam and loamy sand; massive; very friable; common medium prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) masses of oxidized iron in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 19 inches
Depth to the base of soil development: 40 to 70 inches
Depth to carbonates: More than 40 inches
Thickness of the loess: 40 to 60 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3

Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

2Btg, 2Bt, 2Bg, 2BC, 2BCtg, or 2BCg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 8
Texture—stratified sandy loam to silt loam
Content of rock fragments—0 to 5 percent by volume

2Cg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 8
Texture—stratified sandy loam to loamy sand
Content of rock fragments—0 to 10 percent by volume

198A—Elburn silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes (fig. 4)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have less sand and more clay in the underlying material and have a seasonal high water table at a depth of more than 2 feet
- Soils that have less sand in the underlying material

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Elburn Soil

Parent material: Loess over outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None

Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Elkhart Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Elkhart soils in this survey area have a seasonal high water table within a depth of 40 inches, which is closer to the surface than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls.

Typical Pedon

Elkhart silt loam, 2 to 5 percent slopes, at an elevation of 687 feet; Marshall County, Illinois; 1,780 feet east and 460 feet south of the northwest corner of sec. 14, T. 29 N., R. 2 W.; USGS Washburn, Illinois, topographic quadrangle; lat. 40 degrees 58 minutes 49.4 seconds N. and long. 89 degrees 18 minutes 31 seconds W.; UTM Zone 16, 305773 easting, 4539145 northing; NAD 83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; common very fine roots; moderately acid; clear smooth boundary.
A—9 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.
Bt1—13 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—21 to 30 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; many distinct dark brown (10YR 3/3) and brown (10YR 4/3) clay films on faces of peds; neutral; gradual wavy boundary.
BCk—30 to 49 inches; yellowish brown (10YR 5/6) silt loam; weak coarse subangular blocky structure; friable; few very fine roots; common fine and medium prominent light brownish gray (2.5Y 6/2) iron depletions throughout; common fine masses of carbonate in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.
Ck—49 to 80 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; common medium prominent light brownish gray (2.5Y 6/2) iron depletions throughout; common medium and coarse carbonate nodules in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of soil development: 20 to 50 inches
Depth to carbonates: 20 to 40 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

BA and Bt horizons:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

BC or BCk horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or silty clay loam

C or Ck horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam

567B—Elkhart silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes (fig. 5)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The poorly drained Sable soils on toeslopes

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Elpaso Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Elpaso silty clay loam, 0 to 2 percent slopes, at an elevation of 640 feet; Woodford County, Illinois; 210 feet north and 320 feet west of the southeast corner of sec. 30, T. 27 N., R. 2 E.; USGS Benson, Illinois, topographic quadrangle; lat. 40 degrees 45 minutes 59.8 seconds N. and long. 89 degrees 1 minute 34.3 seconds W.; UTM Zone 16, 328989 easting, 4514825 northing; NAD 83:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak very fine granular structure; firm; many very fine and fine roots; moderately acid; abrupt smooth boundary.

A—7 to 21 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; firm; many very fine and fine roots; moderately acid; gradual wavy boundary.

Bg—21 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; many fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; few fine extremely weakly cemented iron-manganese accumulations throughout; neutral; gradual wavy boundary.

Btg1—35 to 44 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and few fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; common fine extremely weakly cemented iron-manganese accumulations throughout; neutral; gradual wavy boundary.

2Btg2—44 to 53 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium and coarse subangular blocky structure; friable; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) and common fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; common fine extremely weakly cemented iron-manganese accumulations throughout; 5 percent pebbles; slightly alkaline; clear wavy boundary.

2Btg3—53 to 69 inches; dark grayish brown (2.5Y 4/2) and olive brown (2.5Y 4/4) silty clay loam; weak medium and coarse prismatic structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint olive gray (5Y 5/2) iron depletions throughout; few fine extremely weakly cemented iron-manganese accumulations throughout; 4 percent pebbles; slightly effervescent starting at a depth of 63 inches; slightly alkaline; diffuse wavy boundary.

2C—69 to 80 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; few fine extremely weakly cemented iron-manganese accumulations throughout; 4 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of soil development: 45 to 75 inches
Depth to carbonates: 35 to 65 inches
Thickness of the loess: 40 to 60 inches
Other features: Some pedons have an AB or BA horizon.

Ap or A horizon(s):
Hue—10YR or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

Bg and/or Btg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

2Btg and/or 2BCg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4
Texture—silty clay loam, silt loam, loam, or clay loam
Content of rock fragments—1 to 10 percent by volume

2C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silty clay loam, silt loam, loam, or clay loam
Content of rock fragments—1 to 10 percent by volume

356A—Elpaso silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes and talfs (fig. 7)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 65 inches
- Soils that have less sand in the lower part of the subsoil and in the underlying material

- Soils that have more clay in the subsoil
- Soils that have carbonates at a depth of less than 35 inches

Dissimilar soils:
- The moderately well drained Catlin and Graymont soils in the higher positions
- The very poorly drained Peotone soils in depressions

Properties and Qualities of the Elpaso Soil

Parent material: Loess over till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 7 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

721A—Drummer and Elpaso silty clay loams, 0 to 2 percent slopes

Setting

Landform: Drummer—outwash plains; Elpaso—ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 0 to 100 percent
Elpaso and similar soils: 0 to 100 percent
Dissimilar soils: 0 to 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have more clay in the subsoil

Dissimilar soils:
- The moderately well drained Graymont soils in the higher positions
- The very poorly drained Peotone soils in depressions

Properties and Qualities of the Drummer Soil

Parent material: Loess over loamy outwash
Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Properties and Qualities of the Elpaso Soil

Parent material: Loess over till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Drummer—2w; Elpaso—2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Drummer—hydric; Elpaso—hydric

Flanagan Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Flanagan silt loam, 0 to 2 percent slopes, at an elevation of 730 feet; Champaign County, Illinois; 1,607 feet east and 1,405 feet north of the southwest corner of sec. 19, T. 19 N., R. 9 E.; USGS Urbana, Illinois, topographic quadrangle; lat. 40 degrees 5 minutes 33.5 seconds N. and long. 88 degrees 13 minutes 57.5 seconds W.; UTM Zone 16, 394922 easting, 4438766 northing; NAD 83:

A1—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; slightly acid; gradual smooth boundary.

A2—8 to 15 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

A3—15 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

Bt1—18 to 23 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint brown (10YR 4/3) masses of oxidized iron-manganese in the matrix; moderately acid; clear smooth boundary.

Bt2—23 to 32 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint brown (10YR 5/3 and 4/3) masses of oxidized iron-manganese in the matrix; moderately acid; clear smooth boundary.

Bt3—32 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint light yellowish brown (10YR 6/4) and distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt4—38 to 45 inches; 40 percent yellowish brown (10YR 5/6), 30 percent light brownish gray (10YR 6/2), and 30 percent brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; gradual smooth boundary.

2Bt5—45 to 49 inches; 35 percent yellowish brown (10YR 5/4), 35 percent light olive brown (2.5Y 5/4), and 30 percent light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; 5 percent fine gravel; neutral; abrupt smooth boundary.

2C—49 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; common medium rounded white (10YR 8/1) weakly cemented calcium carbonate nodules throughout; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 19 inches
Thickness of the loess: 40 to 60 inches
Depth to the base of the argillic horizon: 45 to 65 inches
Depth to carbonates: 45 to 65 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silty clay, silty clay loam, or silt loam

2Btg, 2Bt, 2Bg, 2BC, 2BCtg, or 2BCg horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6

Chroma—1 to 6
Texture—loam, silt loam, or silty clay loam
Content of rock fragments—1 to 15 percent by volume

2C or 2Cg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam
Content of rock fragments—1 to 15 percent by volume

154A—Flanagan silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and rises (fig. 7)

Map Unit Composition

Flanagan and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 45 inches
- Soils that have less clay in the subsoil
- Soils that have less sand in the underlying material
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso and Sable soils in swales

Properties and Qualities of the Flanagan Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

154B—Flanagan silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 7)

Map Unit Composition

Flanagan and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have more sand within a depth of 40 inches
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The moderately well drained Varna soils in the higher positions
- The poorly drained Elpaso and Sable soils on toeslopes

Properties and Qualities of the Flanagan Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Fox Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fox silty clay loam, 5 to 10 percent slopes, eroded, at an elevation of 650 feet; Woodford County, Illinois; 1,700 feet north and 276 feet west of the southeast corner of sec. 25, T. 26 N., R. 1 W.; USGS Germantown Hills Northeast, Illinois, topographic quadrangle; lat. 40 degrees 40 minutes 53.1 seconds N. and long. 89 degrees 9 minutes 27 seconds W.; UTM Zone 16, 317673 easting, 4505629 northing; NAD 83:

Ap—0 to 5 inches; brown (10YR 4/3) silty clay loam, brown (10YR 5/3) dry; weak very fine granular structure; friable; common fine and very fine roots; moderately acid; abrupt smooth boundary.

Bt1—5 to 14 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common fine and very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; gradual wavy boundary.

2Bt2—14 to 20 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common fine and very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; 10 percent mixed rock fragments; strongly acid; gradual wavy boundary.

2Bt3—20 to 29 inches; dark yellowish brown (10YR 4/4) very gravelly clay loam; weak medium subangular blocky structure; friable; few fine and very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; 40 percent mixed rock fragments; strongly acid; gradual wavy boundary.

2Bt4—29 to 35 inches; dark yellowish brown (10YR 3/4) very gravelly clay loam; weak medium subangular blocky structure; very friable; few fine and very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; 60 percent mixed rock fragments; moderately acid; gradual wavy boundary.

3C—35 to 60 inches; yellowish brown (10YR 5/4) very gravelly sand; single grain; loose; 60 percent mixed rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 0 to 24 inches
Depth to the base of soil development: 20 to 40 inches
Depth to carbonates: 20 to 40 inches

Ap horizon(s):
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—silty clay loam
Content of rock fragments—0 to 10 percent by volume

Bt horizon(s):
Hue—5YR, 7.5YR, or 10YR
Value—3 to 5
Chroma—3 or 4
Texture—silty clay loam
Content of rock fragments—0 to 10 percent by volume

2Bt or 2Btk horizon(s) (upper part):
Hue—5YR, 7.5YR, or 10YR
Value—3 or 4
Chroma—3 or 4
Texture—clay loam
Content of rock fragments—0 to 15 percent by volume

2Bt or 2Btk horizon(s) (lower part):
Hue—5YR, 7.5YR, or 10YR
Value—3 or 4
Chroma—3 or 4
Texture—very gravelly clay loam
Content of rock fragments—35 to 60 percent by volume

3C horizon(s):
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 or 4
Texture—very gravelly coarse sand or very gravelly sand; strata of gravel in some pedons
Content of rock fragments—35 to 60 percent by volume

327C2—Fox silty clay loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have less sand and gravel in the lower part of the subsoil

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The well drained Senachwine and Hennepin soils in the higher, more sloping areas

Properties and Qualities of the Fox Soil

Parent material: Thin loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Available water capacity: About 5.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Graymont Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Graymont soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Graymont silt loam, 2 to 5 percent slopes, at an elevation of 704 feet; Livingston County, Illinois; 100 feet east and 2,100 feet north of the southwest corner of sec. 28, T. 28 N., R. 3 E.; USGS Flanagan Southwest, Illinois, topographic quadrangle; lat. 40 degrees 51 minutes 40 seconds N. and long. 88 degrees 53 minutes 30 seconds W.; UTM Zone 16, 340564 easting, 4525065 northing; NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

AB—7 to 12 inches; very dark brown (10YR 2/2) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots; slightly acid; clear smooth boundary.

Bt1—12 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 24 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—24 to 28 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Bt4—28 to 33 inches; brown (10YR 5/3) silt loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg—33 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure; firm; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; 3 percent gravel; neutral; clear smooth boundary.

2Cg—38 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) very weakly cemented concretions of iron and manganese oxides throughout; few fine white (10YR 8/1) very weakly cemented calcium carbonate concretions throughout; few fine prominent light olive brown (2.5Y 5/6) masses of oxidized iron in the matrix; few fine faint light brownish gray

(2.5Y 6/2) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 20 inches
Depth to the base of soil development: 24 to 45 inches
Thickness of the loess: 20 to 40 inches
Depth to carbonates: Less than 40 inches
Other features: Some pedons have a BA horizon instead of an AB horizon.

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

Bt horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam; silt loam in thin subhorizons in some pedons

2Bt, 2Btg, 2BC, or 2BCg horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—0 to 15 percent by volume

2Cg or 2C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of rock fragments—0 to 15 percent by volume

541B2—Graymont silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes (fig. 7)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand within a depth of 40 inches
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that have a thicker dark surface soil
- Soils that have more clay in the subsoil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

541C2—Graymont silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 7)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the upper part of the subsoil
- Soils that have more clay in the surface soil and subsoil
- Soils that have less sand within a depth of 40 inches
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that have a lighter colored surface soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate

Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Harpster Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Harpster silty clay loam, 0 to 2 percent slopes, at an elevation of about 740 feet; Ford County, Illinois; 855 feet south and 70 feet west of the northeast corner of sec. 20, T. 23 N., R. 7 E.; USGS Gibson City West, Illinois, topographic quadrangle; lat. 40 degrees 26 minutes 24 seconds N. and long. 88 degrees 25 minutes 23 seconds W.; UTM Zone 16, 379305 easting, 4477570 northing; NAD 83:

Apk—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; many snail shells; strongly effervescent (20 percent calcium carbonate); moderately alkaline; abrupt smooth boundary.

Ak—9 to 18 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine and medium granular structure; firm; common very fine roots; many snail shells; strongly effervescent (18 percent calcium carbonate); moderately alkaline; clear smooth boundary.

Bg1—18 to 25 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium angular blocky structure; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; few snail shells; slightly effervescent (7 percent calcium carbonate); moderately alkaline; gradual smooth boundary.

Bg2—25 to 31 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent dark yellowish brown (10YR 4/4) and few fine distinct olive (5Y 4/4) masses of oxidized iron-manganese in the matrix; few snail shells; slightly effervescent (5 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg3—31 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak coarse prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium distinct olive (5Y 4/4) masses of oxidized iron-manganese and few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Bg4—36 to 41 inches; 40 percent olive brown (2.5Y 4/4), 35 percent olive yellow (2.5Y 6/6), and 25 percent gray (5Y 5/1) silty clay loam; weak coarse angular blocky structure; firm; few very fine roots; 2 percent gravel; slightly effervescent (2 percent calcium carbonate); slightly alkaline; gradual smooth boundary.

Cg1—41 to 56 inches; 55 percent gray (5Y 5/1), 40 percent light olive brown (2.5Y 5/6), and 5 percent dark yellowish brown (10YR 4/4) silt loam; massive; firm; 1 percent gravel; strongly effervescent (16 percent calcium carbonate); moderately alkaline; clear smooth boundary.

2Cg2—56 to 60 inches; gray (10YR 5/1) loam; massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or other silty sediments: More than 36 inches
Depth to the base of soil development: 22 to 46 inches
Depth to the calcic horizon: 0 to 16 inches

Apk or Ak horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam
Content of rock fragments—0 to 2 percent by volume

Bg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2; 0 to 6 in some subhorizons in some pedons
Texture—silty clay loam
Content of rock fragments—0 to 5 percent by volume

Cg or 2Cg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam or loam
Content of rock fragments—0 to 5 percent by volume

67A—Harpster silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Toeslopes and talfs

Map Unit Composition

Harpster and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil and underlying material
- Soils that do not have carbonates in the surface soil and in the upper part of the subsoil
- Soils that do not have carbonates in the surface soil and in the upper part of the subsoil and have a seasonal high water table at a depth of more than 1 foot

Properties and Qualities of the Harpster Soil

Parent material: Calcareous loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.5 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Hennepin Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Eutrudepts

Typical Pedon

Hennepin loam, 35 to 70 percent slopes, at an elevation of 594 feet; Bureau County, Illinois; 880 feet south and 528 feet west of the northeast corner of sec. 13, T. 15 N., R. 8 E.; USGS Wyanet, Illinois, topographic quadrangle; lat. 41 degrees 17 minutes 23 seconds N. and long. 89 degrees 30 minutes 44 seconds W.; UTM Zone 16, 289627 easting, 4573961 northing; NAD 83:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common fine roots throughout; few pebbles; slightly effervescent; slightly alkaline; clear smooth boundary.
Bw1—4 to 9 inches; dark brown (10YR 4/3) loam; moderate fine subangular blocky structure; friable; common fine roots throughout; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few pebbles; slightly effervescent; slightly alkaline; clear smooth boundary.
Bw2—9 to 16 inches; dark yellowish brown (10YR 4/4) loam; moderate fine subangular blocky structure; friable; few fine roots; common faint brown (10YR 4/3) clay films on vertical faces of peds; few pebbles; slightly effervescent; slightly alkaline; clear smooth boundary.
C—16 to 60 inches; brown (7.5YR 4/4) loam; massive; friable; few fine roots; few pebbles; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of soil development: 10 to 20 inches
Depth to carbonates: 0 to 15 inches

A horizon(s):
Hue—7.5YR or 10YR
Value—3 to 5

Chroma—1 to 4
Texture—silt loam or loam
Content of rock fragments—0 to 10 percent by volume

Bw or Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, silt loam, or loam
Content of rock fragments—1 to 15 percent by volume

C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—loam
Content of rock fragments—1 to 15 percent by volume

25G—Hennepin loam, 35 to 70 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the surface layer and subsoil

Dissimilar soils:
- The moderately well drained Birkbeck and Rozetta soils in the higher, less sloping positions
- The somewhat poorly drained Lawson soils on flood plains

Properties and Qualities of the Hennepin Soil

Parent material: Calcareous till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

883F—Senachwine-Hennepin loams, 18 to 35 percent slopes

Setting

Landform: Bluffs and ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Senachwine and similar soils: 50 percent
Hennepin and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the surface layer and subsoil

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The moderately well drained Birkbeck and Rozetta soils in the higher, less sloping positions

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Calcareous till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None

Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Senachwine—6e; Hennepin—6e
Prime farmland category: Not prime farmland
Hydric soil status: Senachwine—not hydric; Hennepin—not hydric

883G—Senachwine-Hennepin loams, 35 to 60 percent slopes

Setting

Landform: Bluffs and ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Senachwine and similar soils: 50 percent
Hennepin and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the surface layer and subsoil

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The moderately well drained Birkbeck and Rozetta soils in the higher, less sloping positions

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Calcareous till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Senachwine—7e; Hennepin—7e
Prime farmland category: Not prime farmland
Hydric soil status: Senachwine—not hydric; Hennepin—not hydric

964F—Miami and Hennepin soils, 18 to 35 percent slopes

Setting

Landform: End moraines
Position on the landform: Backslopes

Map Unit Composition

Miami and similar soils: 0 to 100 percent
Hennepin and similar soils: 0 to 100 percent
Dissimilar soils: 0 to 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The moderately well drained Birkbeck and Rozetta soils in the higher, less sloping positions

Properties and Qualities of the Miami Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 24 to 40 inches to dense material
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Miami—6e; Hennepin—6e
Prime farmland category: Not prime farmland
Hydric soil status: Miami—not hydric; Hennepin—not hydric

Huntsville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 667 feet; Knox County, Illinois; 2,475 feet east and 495 feet south of the northwest corner of sec. 1, T. 12 N., R. 4 E.; USGS La Fayette, Illinois, topographic quadrangle; lat. 41 degrees 3 minutes 38 seconds N. and long. 89 degrees 59 minutes 42 seconds W.; UTM Zone 16, 248320 easting, 4549776 northing; NAD 83:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; slightly acid; clear smooth boundary.

A1—10 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

A2—16 to 27 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine granular structure; friable; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

AC—27 to 52 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure; friable; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

C—52 to 65 inches; dark brown (10YR 3/3) silt loam; massive; friable; slightly acid; clear smooth boundary.

Cg—65 to 80 inches; grayish brown (10YR 5/2) silt loam; massive; friable; few fine prominent black (N 2.5/) manganese accumulations throughout; few fine distinct yellowish brown (10YR 5/4 and 5/6) and few coarse prominent yellowish red (5YR 5/6) masses of oxidized iron in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 57 inches
Depth to carbonates (if they occur): More than 60 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3

Texture—silt loam
Content of rock fragments—0 to 2 percent by volume

AC horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Content of rock fragments—0 to 2 percent by volume

C or Cg horizon(s):
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam; loam or strata of very fine sandy loam to fine sand below a depth of 40 inches in some pedons
Content of rock fragments—0 to 2 percent by volume

8077A—Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more sand throughout
- Soils that have a thinner dark surface soil
- Soils that have a seasonal high water table at a depth of less than 5 feet

Dissimilar soils:
- The somewhat poorly drained Lawson soils in landscape positions similar to those of the Huntsville soil
- The poorly drained Sawmill soils in the slightly lower positions

Properties and Qualities of the Huntsville Soil

Parent material: Silty alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table: 3.5 to 6.5 feet below the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ipava Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Ipava silt loam, 0 to 2 percent slopes, at an elevation of about 804 feet; Knox County, Illinois; 2,046 feet west and 594 feet north of the southeast corner of sec. 25, T. 13 N., R. 2 E.; USGS Oneida, Illinois, topographic quadrangle; lat. 41 degrees 4 minutes 48 seconds N. and long. 90 degrees 13 minutes 3 seconds W.; UTM Zone 15, 733732 easting, 4551373 northing; NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; moderately acid; abrupt smooth boundary.

A—10 to 18 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; common distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

BA—18 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

Btg1—24 to 31 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Btg2—31 to 37 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; few fine black (7.5YR 2.5/1) iron-manganese stains on faces of peds; slightly alkaline; gradual smooth boundary.

BCg—37 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films occurring as linings in pores and on a few vertical faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine prominent black (7.5YR 2.5/1) iron-manganese stains on faces of peds; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few faint very dark grayish brown (10YR 3/2) organo-clay films occurring as linings in pores; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) iron and manganese oxide stains on faces of vertical cracks; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 19 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 35 to 55 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

BA, Bt, Btg, or BCg horizon(s):
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay

Cg or C horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 4
Texture—silt loam

43A—Ipava silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits, footslopes, and talfs (fig. 5)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner dark surface soil
- Soils that have less clay in the subsoil
- Soils that have more sand in the lower part of the subsoil and in the underlying material
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent

Shrink-swell potential: High
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

43B—Ipava silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 5)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner dark surface soil
- Soils that have less clay in the subsoil
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: High
Apparent seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Jasper Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Jasper soil in map unit 440C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Jasper silt loam, 0 to 2 percent slopes, at an elevation of 580 feet; Bureau County, Illinois; 1,580 feet west and 860 feet south of the northeast corner of sec. 30, T. 16 N., R. 9 E.; USGS Princeton South, Illinois, topographic quadrangle; lat. 41 degrees 20 minutes 50 seconds N. and long. 89 degrees 29 minutes 41 seconds W.; UTM Zone 16, 291289 easting, 4580305 northing; NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
A—8 to 19 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak medium and coarse granular structure; friable; common fine roots; neutral; clear smooth boundary.
Bt1—19 to 25 inches; brown (10YR 4/3) silt loam; moderate fine and medium subangular blocky structure parting to moderate fine granular; friable; common fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; neutral; clear smooth boundary.
Bt2—25 to 30 inches; brown (10YR 4/3) silt loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; neutral; clear smooth boundary.
Bt3—30 to 37 inches; brown (10YR 4/3) loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; neutral; clear smooth boundary.
BCt—37 to 44 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium and coarse subangular blocky structure; friable; common fine roots; many distinct dark brown (10YR 3/3) organo-clay films bridging sand grains; strata of gravelly sandy loam with many distinct very dark gray (10YR 3/1) organo-clay films on pebbles between depths of 42 and 44 inches; neutral; abrupt smooth boundary.
C1—44 to 50 inches; yellowish brown (10YR 5/4) loam; massive; friable; slightly effervescent; slightly alkaline; clear smooth boundary.
C2—50 to 60 inches; yellowish brown (10YR 5/4), stratified silt loam and loam; massive; friable; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 19 inches
Depth to the base of soil development: 35 to 60 inches
Depth to carbonates: More than 35 inches
Other features: Some pedons have an AB or BA horizon.

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

Bt and/or 2Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, loam, silty clay loam, or silt loam
Content of rock fragments—0 to 5 percent by volume

BC, BCt, or 2BC horizon(s) (where present):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—fine sandy loam, sandy loam, loam, or sandy clay loam
Content of rock fragments—0 to 5 percent by volume

C or 2C horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified silt loam to loamy sand
Content of rock fragments—0 to 10 percent by volume

440A—Jasper silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits (fig. 4)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the surface layer and in the upper part of the subsoil and have a lighter colored surface soil
- Soils that have less sand in the subsoil
- Soils that have more sand in the underlying material

Dissimilar soils:
- The well drained Landes soils on flood plains

Properties and Qualities of the Jasper Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

440B—Jasper silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less clay in the surface soil and in the upper part of the subsoil and have a lighter colored surface soil
- Soils that have less sand in the subsoil

Dissimilar soils:
- The well drained Ross soils on flood plains
- The well drained Hennepin and Senachwine soils in the higher positions

Properties and Qualities of the Jasper Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

440C2—Jasper silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Backslopes

Map Unit Composition

Jasper and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less sand in the upper part of the subsoil
- Soils that have a lighter colored surface soil
- Soils that have less clay in the surface soil and in the upper part of the subsoil

Properties and Qualities of the Jasper Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Keomah Series

Taxonomic classification: Fine, smectitic, mesic Aeric Endoaqualfs

Typical Pedon

Keomah silt loam, 0 to 2 percent slopes, at an elevation of 655 feet; Adams County, Illinois; 2,495 feet south and 300 feet west of the northeast corner of sec. 4, T. 2 N., R. 7 W.; USGS Loraine, Illinois, topographic quadrangle; lat. 40 degrees 11 minutes 24 seconds N. and long. 91 degrees 12 minutes 14 seconds W.; UTM Zone 15, 652882 easting, 4450397 northing; NAD 83:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak very fine subangular blocky; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Ap2—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; common very fine and fine roots; few fine distinct brown (7.5YR 4/4) masses of oxidized iron-manganese throughout; moderately acid; abrupt smooth boundary.

E—11 to 18 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; common fine roots; few distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) clay depletions throughout; few fine prominent black (2.5Y 2.5/1) manganese accumulations throughout; few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron throughout; slightly acid; clear smooth boundary.

Bt1—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many fine prominent strong brown (7.5YR 5/6) masses of oxidized iron throughout, common fine prominent black (2.5Y 2.5/1) manganese accumulations throughout, and few fine faint grayish brown (10YR 5/2) iron depletions throughout; strongly acid; clear smooth boundary.

Bt2—25 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent black (2.5Y 2.5/1) manganese accumulations and many fine prominent strong brown (7.5YR 5/6) masses of oxidized iron throughout; strongly acid; clear smooth boundary.

Bt3—33 to 44 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many fine prominent strong brown (7.5YR 5/6) masses of oxidized iron throughout, common fine prominent black (2.5Y 2.5/1) manganese accumulations throughout, and common fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear smooth boundary.

Btg—44 to 51 inches; light brownish gray (10YR 6/2) silty clay loam; weak coarse prismatic structure; firm; few fine roots; few distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; few fine prominent black (2.5Y 2.5/1) manganese accumulations and many medium prominent strong brown (7.5YR 5/6) masses of oxidized iron throughout; moderately acid; clear smooth boundary.

BCg1—51 to 63 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many medium prominent strong brown (7.5YR 5/6) masses of oxidized iron and few fine prominent black (2.5Y 2.5/1) manganese accumulations throughout; slightly acid; clear smooth boundary.

BCg2—63 to 76 inches; light brownish gray (10YR 6/2) silt loam; weak coarse prismatic structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; few fine prominent black (2.5Y 2.5/1) manganese accumulations and many medium prominent strong brown (7.5YR 5/6) masses of oxidized iron throughout; slightly acid; clear smooth boundary.

C—76 to 89 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few medium distinct strong brown (7.5YR 5/6) masses of iron throughout, few fine prominent black (2.5Y 2.5/1) manganese accumulations throughout, and common distinct light brownish gray (10YR 6/2) iron depletions throughout; slightly acid.

Range in Characteristics

Depth to the base of soil development: 40 to 76 inches
Depth to carbonates (if they occur): More than 45 inches

Ap or A horizon(s):
Hue—10YR
Value—3 or 4 (3 in horizons that are less than 3 inches thick)
Chroma—1 or 2
Texture—silt loam

E horizon(s):
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

Bt or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay

BCg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

Cg or C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

17A—Keomah silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and talfs (fig. 6)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a darker surface layer
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have less clay in the subsoil
- Soils that have more sand in the underlying material and have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Keomah Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Apparent seasonal high water table: 0.5 foot to 2.0 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

17B2—Keomah silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders (fig. 6)

Map Unit Composition

Keomah and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have slopes of less than 2 percent
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have more sand in the underlying material

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Keomah Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: High
Apparent seasonal high water table: 0.5 foot to 2.0 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

La Rose Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls
Taxadjunct features: The La Rose soil in map unit 60C3 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, active, mesic Mollic Hapludalf.

Typical Pedon

La Rose silt loam, 5 to 10 percent slopes, eroded, at an elevation of 870 feet; Lee County, Illinois; 2,342 feet north and 114 feet east of the southwest corner of sec. 33, T. 38 N., R. 2 E.; USGS Compton, Illinois, topographic quadrangle; lat. 41 degrees 43 minutes 29.6 seconds N. and long. 89 degrees 1 minute 7.3 seconds W.; UTM Zone 16, 332093 easting, 4621201 northing; NAD 83:

Ap—0 to 7 inches; 95 percent very dark grayish brown (10YR 3/2) and 5 percent brown (7.5YR 4/4) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few fine roots; few pebbles; neutral; abrupt smooth boundary.

Bt1—7 to 14 inches; brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds and common prominent very dark grayish brown (10YR 3/2) organo-clay films lining pores and root channels; few pebbles; neutral; clear smooth boundary.

Bt2—14 to 19 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces on peds and common prominent very dark grayish brown (10YR 3/2) organo-clay films lining pores and root channels; few pebbles; neutral; clear smooth boundary.

C1—19 to 42 inches; brown (7.5YR 5/4) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; few pebbles; strongly effervescent; slightly alkaline; gradual smooth boundary.

C2—42 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; few pebbles; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 6 to 12 inches
Depth to the base of soil development: Less than 24 inches
Depth to carbonates: 10 to 24 inches

Ap or A horizon(s):
Hue—7.5YR or 10YR
Value—2 to 3
Chroma—1 to 3

Texture—silt loam or silty clay loam
Content of rock fragments—0 to 7 percent by volume

Bt and BC horizons:
Hue—5YR, 7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silt loam, clay loam, or silty clay loam
Content of rock fragments—0 to 7 percent by volume

C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture—loam
Content of rock fragments—0 to 10 percent by volume

60C2—La Rose silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil
- Soils that have less sand in the subsoil and have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Elpaso soils in swales

Properties and Qualities of the La Rose Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

60C3—La Rose silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface layer
- Soils that have less clay in the surface layer
- Soils that have less sand in the subsoil and have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Elpaso soils in swales

Properties and Qualities of the La Rose Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Landes Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Fluventic Hapludolls

Typical Pedon

Landes fine sandy loam, 0 to 2 percent slopes, frequently flooded, at an elevation of about 440 feet; Cass County, Illinois; 99 feet south and 990 feet west of the northeast corner of sec. 4, T. 18 N., R. 11 W.; USGS Clearlake, Illinois, topographic quadrangle; lat. 40 degrees 2 minutes 54 seconds N. and long. 90 degrees 20 minutes 1 second W.; UTM Zone 15, 727436 easting, 4436556 northing; NAD 83:

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sandy loam, brown (10YR 4/3) dry; weak fine subangular blocky structure parting to weak fine granular; friable; few very fine roots; few fine very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

A—5 to 14 inches; very dark grayish brown (10YR 3/2) fine sandy loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; few very fine roots; neutral; clear smooth boundary.

AB—14 to 19 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; friable; few very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw1—19 to 23 inches; brown (10YR 4/3) loam; weak fine and medium subangular blocky structure; friable; few very fine roots; many distinct dark brown (10YR 3/3) and few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw2—23 to 28 inches; brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure; friable; few very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw3—28 to 32 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; very friable; few very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; less than 2 percent fine gravel; neutral; clear smooth boundary.

BC—32 to 36 inches; dark yellowish brown (10YR 4/4) and brown (10YR 4/3) loamy sand; weak medium subangular blocky structure; very friable; few very fine roots; 5 percent fine gravel; neutral; clear smooth boundary.

C—36 to 60 inches; yellowish brown (10YR 5/4) sand; single grain; loose; 2 percent fine gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of soil development: 22 to 40 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—fine sandy loam or loam
Content of rock fragments—0 to 10 percent by volume

Bw horizon(s):
Hue—10YR
Value—3 to 6
Chroma—2 to 4
Texture—loam, fine sandy loam, or very fine sandy loam
Content of rock fragments—0 to 10 percent by volume

BC or C horizon(s):
Hue—2.5YR, 5YR, 7.5YR, or 10YR
Value—4 to 6
Chroma—1 to 4

Texture—sand, loamy fine sand, or loamy sand
Content of rock fragments—0 to 10 percent by volume

8304A—Landes fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Landes and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand throughout
- Soils that have a thicker dark surface soil

Dissimilar soils:
- The somewhat poorly drained Lawson soils in landscape positions similar to those of the Landes soil
- The well drained Senachwine and Hennepin soils in the higher, more sloping positions

Properties and Qualities of the Landes Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Lawson Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 685 feet; Adams County, Illinois; 1,900 feet east and 265 feet south of the northwest corner of sec. 3, T. 1 S., R. 5 W.; USGS Clayton, Illinois, topographic quadrangle; lat. 40 degrees 1 minute 4 seconds N. and long. 90 degrees 57 minutes 54 seconds W.; UTM Zone 15, 673680 easting, 4431720 northing; NAD 83:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

A1—6 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common fine roots; neutral; clear smooth boundary.

A2—14 to 22 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common fine roots; common fine faint brown (10YR 4/3) masses of oxidized iron-manganese throughout; neutral; clear smooth boundary.

A3—22 to 33 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common fine roots; common fine faint brown (10YR 4/3) masses of oxidized iron-manganese throughout; neutral; clear smooth boundary.

C1—33 to 40 inches; stratified 70 percent very dark grayish brown (10YR 3/2) and 20 percent dark brown (10YR 3/3) silt loam; massive; friable; common fine roots; common fine and medium prominent yellowish brown (10YR 5/6) masses of oxidized iron and common fine and medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C2—40 to 56 inches; stratified 60 percent very dark grayish brown (10YR 3/2) and 30 percent dark brown (10YR 3/3) silt loam; massive; friable; few fine roots; common fine and medium prominent yellowish brown (10YR 5/6) masses of oxidized iron and common medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C3—56 to 75 inches; stratified 80 percent very dark grayish brown (10YR 3/2) and 10 percent dark brown (10YR 3/3) silt loam; massive; friable; few fine roots; common fine and medium prominent yellowish brown (10YR 5/6) and common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron between peds and many medium faint dark grayish brown (10YR 4/2) iron depletions throughout; slightly acid; clear smooth boundary.

C4—75 to 80 inches; stratified 80 percent dark grayish brown (10YR 4/2) and 10 percent very dark grayish brown (10YR 3/2) silt loam; massive; friable; common medium and coarse prominent yellowish brown (10YR 5/6) and common fine prominent strong brown (7.5YR 5/8) masses of oxidized iron and common fine faint dark gray (10YR 4/1) iron depletions throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

C horizon(s):
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—silt loam; strata containing more sand occur below a depth of 40 inches in some pedons

8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains (fig. 6)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more sand throughout

Dissimilar soils:
- The well drained Ross and Landes soils in landscape positions similar to those of the Lawson soil
- The poorly drained Sawmill soils in the slightly lower positions

Properties and Qualities of the Lawson Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Lena Series

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon

Lena muck, 0 to 2 percent slopes; at an elevation of 642 feet; Kankakee County, Illinois; 900 feet south and 2,100 feet west of the northeast corner of sec. 3, T. 31 N., R. 14 E.; USGS Illiana Heights, Illinois, topographic quadrangle; lat. 41 degrees 12 minutes 21 seconds N. and long. 87 degrees 35 minutes 37 seconds W.; UTM Zone 16, 450229 easting, 4561780 northing; NAD 83:

Oa1—0 to 8 inches; muck (sapric material), black (10YR 2/1) broken face and rubbed; 5 percent fiber, 1 percent rubbed; moderate fine and medium subangular blocky structure; friable; many very fine to coarse roots; common snail shells; violently effervescent; moderately alkaline; clear wavy boundary.

Oa2—8 to 24 inches; muck (sapric material), very dark gray (N 3/) broken face and rubbed; 5 percent fiber, 1 percent rubbed; weak fine and medium subangular blocky structure; friable; many very fine to coarse roots; 1 percent fine sand grains; common snail shells; violently effervescent; moderately alkaline; gradual wavy boundary.

Oa3—24 to 36 inches; muck (sapric material), very dark gray (N 3/) broken face and rubbed; 8 percent fiber, 2 percent rubbed; massive; friable; common very fine and fine roots; 3 percent fine sand grains; common snail shells; violently effervescent; moderately alkaline; gradual wavy boundary.

Oa4—36 to 60 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; 3 percent fiber, a trace rubbed; massive; very friable; common very fine and fine roots; 5 percent fine sand grains; common snail shells; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the organic material: More than 51 inches

Surface tier:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1

Subsurface tier:
Hue—7.5YR, 10YR, or N
Value—2 to 3
Chroma—0 to 3

1210L—Lena muck, undrained, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Flood plains
Position on the landform: Toeslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less than 51 inches of organic material
- Soils that have more sand in the underlying material

Dissimilar soils:
- The somewhat poorly drained Raveenwash soils in the slightly higher positions
- The poorly drained Calco soils in the slightly higher positions

Properties and Qualities of the Lena Soil

Parent material: Herbaceous organic material
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches

Available water capacity: About 23.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 60 to 99 percent
Shrink-swell potential: Not estimated
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 1 foot above the surface
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 5w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Martinsville Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Martinsville silt loam, 2 to 5 percent slopes, eroded, at an elevation of about 695 feet; Champaign County, Illinois; approximately 250 feet south and 1,430 feet east of the northwest corner of sec. 36, T. 21 N., R. 7 E.; USGS Rising, Illinois, topographic quadrangle; lat. 40 degrees 14 minutes 14 seconds N. and long. 88 degrees 21 minutes 37 seconds W.; UTM Zone 16, 384288 easting, 4454974 northing; NAD 83:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak very fine and fine granular structure; friable; common very fine roots; moderately acid; abrupt smooth boundary.

BE—9 to 12 inches; yellowish brown (10YR 5/4) silt loam; moderate fine angular blocky structure; friable; common very fine roots; few faint brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

Bt1—12 to 19 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium prismatic structure parting to strong fine angular blocky; firm; common very fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

Bt2—19 to 28 inches; strong brown (7.5YR 4/6) clay loam; weak medium prismatic structure parting to strong medium angular blocky; firm; many very fine roots; many distinct dark brown (7.5YR 3/4) clay films on faces of peds and in pores; few fine faint yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine spherical prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; moderately acid; clear smooth boundary.

Bt3—28 to 36 inches; strong brown (7.5YR 4/6) sandy clay loam; moderate medium and coarse angular blocky structure; firm; common very fine roots; many distinct dark brown (7.5YR 3/4) clay films on faces of peds and in pores; few fine faint yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine spherical prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; moderately acid; clear smooth boundary.

Bt4—36 to 45 inches; yellowish brown (10YR 5/4) sandy clay loam; weak coarse angular blocky structure; firm; few very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; few fine distinct yellowish brown

(10YR 5/6) masses of oxidized iron in the matrix; common fine spherical prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; moderately acid; abrupt smooth boundary.

Bt5—45 to 57 inches; yellowish brown (10YR 5/4), stratified silt loam; weak coarse angular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine spherical prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; moderately acid; abrupt smooth boundary.

Bt6—57 to 69 inches; yellowish brown (10YR 5/4), stratified silt loam, loam, and sandy loam; weak coarse angular blocky structure; friable; few distinct brown (10YR 4/3) clay films on vertical faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint pale brown (10YR 6/3) iron depletions in the matrix; common fine spherical prominent black (7.5YR 2.5/1) very weakly cemented manganese nodules throughout; moderately acid; clear smooth boundary.

C—69 to 80 inches; light yellowish brown (10YR 6/4), stratified loam and sandy loam; massive; friable; slightly acid.

Range in Characteristics

Depth to the base of soil development: 40 to 70 inches
Thickness of the loess: Less than 20 inches
Other features: Some pedons do not have an E, EB, or BE horizon.

Ap or A horizon(s):
Hue—10YR
Value—3 to 5 (3 in A horizons that are less than 6 inches thick)
Chroma—2 to 6
Texture—silt loam, sandy loam, or loam
Content of rock fragments—0 to 5 percent by volume

Bt horizon(s):
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—clay loam, sandy clay loam, silty clay loam, silt loam, loam, or sandy loam or stratified with these textures
Content of rock fragments—0 to 10 percent by volume

C horizon(s):
Hue—10YR
Value—3 to 6
Chroma—3 to 6
Texture—stratified sandy loam, loam, or silt loam; thin strata of silt, fine sand, loamy sand, loamy fine sand, very fine sandy loam, coarse sand, or sand
Content of rock fragments—0 to 10 percent by volume

570A—Martinsville silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil
- Soils that have more sand in the surface soil and subsoil

Dissimilar soils:
- The well drained Senachwine soils in the higher, more sloping positions

Properties and Qualities of the Martinsville Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

570B—Martinsville sandy loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less sand in the subsoil
- Soils that have more sand in the surface soil and subsoil

Dissimilar soils:
- The well drained Senachwine soils in the higher, more sloping positions

Properties and Qualities of the Martinsville Soil

Parent material: Outwash
Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

570C2—Martinsville loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil
- Soils that have more sand in the surface soil and subsoil

Dissimilar soils:
- The well drained Senachwine soils in the higher, more sloping positions

Properties and Qualities of the Martinsville Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Miami Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon

Miami silt loam, 10 to 18 percent slopes, eroded, at an elevation of 845 feet; McLean County, Illinois; 1,500 feet north and 1,400 feet east of the southwest corner of sec. 26, T. 23 N., R. 4 E.; USGS Arrowsmith, Illinois, topographic quadrangle; lat. 40 degrees 25 minutes 3 seconds N. and long. 88 degrees 43 minutes 17 seconds W.; UTM Zone 16, 353959 easting, 4475527 northing; NAD 83:

Ap—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam mixed with dark grayish brown (10YR 4/2) subsurface material, pale brown (10YR 6/3) dry; weak fine subangular blocky structure; friable; few fine roots throughout; neutral; abrupt smooth boundary.

Bt1—4 to 12 inches; brown (10YR 5/3) silty clay loam; weak fine and medium subangular blocky structure; friable; few fine roots throughout; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds; moderately acid; clear wavy boundary.

2Bt2—12 to 19 inches; brown (10YR 5/3) clay loam; moderate medium subangular blocky structure; friable; few fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct very dark gray (10YR 3/1) iron-manganese concretions and stains throughout; 5 percent fine gravel; moderately acid; clear wavy boundary.

2Bt3—19 to 28 inches; brown (10YR 5/3) clay loam; moderate medium angular blocky structure; friable; few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; few fine distinct very dark gray (10YR 3/1) iron-manganese concretions and stains throughout; 5 percent fine gravel; neutral; clear wavy boundary.

2BCt—28 to 33 inches; light olive brown (2.5Y 5/4) clay loam; weak medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine prominent very dark gray (10YR 3/1) iron-manganese concretions and stains throughout; 5 percent fine gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Cd—33 to 60 inches; light olive brown (2.5Y 5/4) loam; massive; firm; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine and medium prominent very dark gray (10YR 3/1) iron-manganese concretions and stains throughout; 10 percent fine and medium gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 0 to 18 inches
Depth to the base of soil development: 24 to 40 inches
Depth to carbonates: 20 to 40 inches

Ap or A horizon(s):
Hue—10YR

Value—3 or 4
Chroma—2 or 3
Texture—silt loam or loam
Content of rock fragments—0 to 5 percent by volume

E horizon(s) (where present):
Hue—10YR
Value—5
Chroma—3 or 4
Texture—loam
Content of rock fragments—0 to 5 percent by volume

Bt or 2Bt horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam or silty clay loam
Content of rock fragments—0 to 10 percent by volume

2BC, 2BCt, or BC horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture—clay loam or loam
Content of rock fragments—1 to 10 percent by volume

2C or 2Cd horizon(s):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture—loam
Content of rock fragments—1 to 10 percent by volume

27C2—Miami silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have more clay in the surface layer
- Soils that have less sand in the subsoil

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Miami Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 24 to 40 inches to dense material
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

27D2—Miami silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have less sand in the subsoil
- Soils that have more clay in the surface layer

Dissimilar soils:
- The somewhat poorly drained Radford soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Miami Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 24 to 40 inches to dense material
Available water capacity: About 7.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

964F—Miami and Hennepin soils, 18 to 35 percent slopes

Setting

Landform: End moraines
Position on the landform: Backslopes

Map Unit Composition

Miami and similar soils: 0 to 100 percent
Hennepin and similar soils: 0 to 100 percent
Dissimilar soils: 0 to 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The moderately well drained Birkbeck and Rozetta soils in the higher, less sloping positions

Properties and Qualities of the Miami Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 24 to 40 inches to dense material
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete

Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Miami—6e; Hennepin—6e
Prime farmland category: Not prime farmland
Hydric soil status: Miami—not hydric; Hennepin—not hydric

MW—Miscellaneous water

This map unit consists of areas that are covered with water in most years, at least during the period that is warm enough for the growth of plants. Many areas are covered throughout the year. Examples include sewage lagoons, animal waste lagoons, and water treatment facilities.

Morley Series

Taxonomic classification: Fine, illitic, mesic Oxyaquic Hapludalfs

Typical Pedon

Morley silty clay loam, 5 to 10 percent slopes, eroded, at an elevation of 740 feet; Woodford County, Illinois; 250 feet north and 1,537 feet east of the southwest corner of sec. 23, T. 26 N., R. 1 W.; USGS Secor Northwest, Illinois, topographic quadrangle; lat. 40 degrees 41 minutes 30.5 seconds N. and long. 89 degrees 11 minutes 21.5 seconds W.; UTM Zone 16, 315013 easting, 4506852 northing; NAD 83:

Ap—0 to 7 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Bt1—7 to 10 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; many very fine and fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/6) masses of oxidized iron throughout; moderately acid; gradual smooth boundary.

2Bt2—10 to 17 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; 2 percent pebbles; neutral; gradual smooth boundary.

2Bt3—17 to 26 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine and medium subangular blocky; firm; common very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine faint light olive brown (2.5Y 5/4) and few fine distinct dark yellowish brown (10YR 4/6) masses of oxidized iron throughout; 2 percent pebbles; slightly alkaline; gradual smooth boundary.

2Bt4—26 to 36 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine and medium prismatic structure parting to moderate medium subangular blocky; firm; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct grayish brown (2.5Y 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron throughout; 2 percent pebbles; slightly alkaline; gradual smooth boundary.

2C—36 to 60 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions and common fine and medium distinct yellowish brown (10YR 5/6) masses of oxidized iron throughout; 2 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 20 to 40 inches
Thickness of the loess: 0 to 18 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silty clay loam
Content of rock fragments—0 to 5 percent by volume

Bt horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam or silty clay loam
Content of rock fragments—0 to 5 percent by volume

2Bt or 2BC horizon(s):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam, clay loam, or silty clay
Content of rock fragments—1 to 10 percent by volume

2C or 2Cd horizon(s):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or clay loam
Content of rock fragments—1 to 10 percent by volume

194C2—Morley silty clay loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Morley and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have less sand in the subsoil

Dissimilar soils:
- The well drained Senachwine and Hennepin soils in the lower, more sloping positions

Properties and Qualities of the Morley Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Newvienna Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs

Typical Pedon

Newvienna silt loam, 2 to 5 percent slopes, at an elevation of 660 feet; Marshall County, Illinois; 1,890 feet east and 128 feet north of the center of sec. 3, T. 13 N., R. 9 E.; USGS Putnam, Illinois, topographic quadrangle; lat. 41 degrees 8 minutes 30 seconds N. and long. 89 degrees 27 minutes 1.6 seconds W.; UTM Zone 16, 294347 easting, 4557377 northing; NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak very fine granular structure; friable; many very fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds and many distinct brown (10YR 4/3) clay films on faces of peds; many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; neutral; clear wavy boundary.

Bt2—13 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; strong fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear wavy boundary.

Bt3—23 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine distinct grayish brown (10YR 5/2) iron depletions throughout; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron throughout; few black (10YR 2/1) manganese concretions throughout; moderately acid; diffuse wavy boundary.

Bt4—31 to 40 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few black (10YR 2/1) manganese concretions throughout; many fine distinct yellowish brown (10YR 5/6) masses of oxidized iron throughout; many fine distinct light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid; diffuse wavy boundary.

Bt5—40 to 55 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse prismatic structure; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few black (10YR 2/1) manganese concretions throughout; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron throughout; common medium distinct light brownish gray (2.5Y 6/2) iron depletions throughout; moderately acid; gradual wavy boundary.

BC—55 to 64 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure; friable; few black (10YR 2/1) manganese concretions throughout; common fine distinct light brownish gray (2.5Y 6/2) iron depletions throughout; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron throughout; neutral; gradual wavy boundary.

C—64 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; very friable; few black (10YR 2/1) manganese concretions throughout; many fine distinct light brownish gray (2.5Y 6/2) iron depletions throughout; slightly alkaline.

Range in Characteristics

Depth to carbonates: More than 60 inches

Ap or A horizon(s):
Hue—10YR
Value—3
Chroma—1 to 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6 in the upper part; 2 to 8 in the lower part
Texture—silty clay loam or silt loam

Btg horizon (where present):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam

BCg, Cg, BC, or C horizon(s):
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—silt loam

383B—Newvienna silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Newvienna and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates within a depth of 60 inches
- Soils that have more sand in the underlying material
- Soils that have a thicker dark surface soil

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Newvienna Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ockley Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Ockley loam, 0 to 2 percent slopes, at an elevation of 450 feet; Woodford County, Illinois; 1,261 feet east and 223 feet north of the southwest corner of sec. 23, T. 27 N., R. 4 W.; USGS Spring Bay Southeast, Illinois, topographic quadrangle; lat. 40 degrees 46 minutes 40.4 seconds N. and long. 89 degrees 32 minutes 12.1 seconds W.; UTM Zone 16, 285934 easting, 4517198 northing; NAD 83:

Ap—0 to 9 inches; brown (10YR 4/3) loam, brown (10YR 5/3) dry; weak very fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

Bt1—9 to 18 inches; dark yellowish brown (10YR 4/4) loam; moderate very fine and fine subangular blocky structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear wavy boundary.
2Bt2—18 to 30 inches; brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; 10 percent mixed rock fragments; moderately acid; gradual wavy boundary.
2Bt3—30 to 42 inches; brown (7.5YR 4/4) sandy clay loam; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds and many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; 12 percent mixed rock fragments; moderately acid; diffuse wavy boundary.
2Bt4—42 to 50 inches; brown (7.5YR 4/4) sandy clay loam; moderate fine prismatic structure; friable; few very fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds and many distinct brown (10YR 4/3) clay films on faces of peds; 14 percent mixed rock fragments; neutral; clear wavy boundary.
3C—50 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly loamy sand; single grain; loose; 65 percent mixed rock fragments; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 0 to 20 inches
Depth to the base of soil development: 40 to 72 inches
Depth to calcareous, gravelly and sandy material: 40 to 72 inches

Ap, A, or BA horizon(s):
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—loam
Content of rock fragments—0 to 3 percent by volume

Bt or BE horizon(s):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam, loam, or silty clay loam
Content of rock fragments—0 to 3 percent by volume

2Bt horizon(s) (upper part):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—clay loam or sandy clay loam
Content of rock fragments—1 to 10 percent by volume

2Bt horizon(s) (lower part):
Hue—5YR or 7.5YR
Value—3 or 4
Chroma—2 to 6
Texture—sandy clay loam, sandy loam, or clay loam or the gravelly analogs of these textures
Content of rock fragments—10 to 25 percent by volume

2BC horizon(s) (where present):
Hue—5YR or 7.5YR
Value—3 or 4

Chroma—2 to 6
Texture—sandy loam or coarse sandy loam or the gravelly or very gravelly analogs of these textures
Content of rock fragments—10 to 45 percent by volume

3C horizon(s):
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—the very gravelly or extremely gravelly analogs of loamy sand or sand
Content of rock fragments—35 to 70 percent by volume

387A—Ockley loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil
- Soils that have carbonates at a depth of less than 40 inches

Dissimilar soils:
- The well drained Landes soils on flood plains
- The poorly drained Selma soils in swales

Properties and Qualities of the Ockley Soil

Parent material: Loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 3.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

802B—Orthents, loamy, undulating

- This map unit consists of areas of leveled land, cut areas (such as for roads or railroads), and fill areas. In the cut areas, the topsoil has been removed and the subsoil or underlying material has been exposed. In the fill areas, additional loamy material has been placed on the original surface layer and in many places has been mixed with the original soil.

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 7 percent
- Soils that have slopes of less than 1 percent

Dissimilar soils:
- Undisturbed soils

Properties and Qualities of the Orthents

Parent material: Earthy cut and fill consisting of loamy material derived from former soil layers and underlying material
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow to moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 3.3 to 6.0 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

802D—Orthents, loamy, rolling

- This map unit consists of cut areas (such as for roads or railroads) and fill areas. In the cut areas, the topsoil has been removed and the subsoil or underlying material has been exposed. In the fill areas, additional loamy material has been placed on the original surface layer and in many places has been mixed with the original soil.

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent
- Soils that have slopes of more than 20 percent

Dissimilar soils:
- The well drained Russell, Senachwine, and Hennepin soils in undisturbed areas
- The moderately well drained Birkbeck and Rozetta soils in undisturbed areas

Properties and Qualities of the Orthents

Parent material: Earthy cut and fill consisting of loamy material derived from former soil layers and underlying material
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow to moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 3.3 to 6.0 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Osco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Osco silt loam, 2 to 5 percent slopes, at an elevation of 855 feet; Carroll County, Illinois; 316 feet north and 88 feet west of the southeast corner of sec. 23, T. 24 N., R. 6 E.; USGS Lanark, Illinois, topographic quadrangle; lat. 42 degrees 3 minutes 13 seconds N. and long. 89 degrees 45 minutes 48 seconds W.; UTM Zone 16, 271330 easting, 4659424 northing; NAD 83:

Ap—0 to 10 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.
A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium and coarse granular structure; friable; common fine roots; strongly acid; clear smooth boundary.
BA—14 to 20 inches; dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; common fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
Bt1—20 to 26 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; few distinct gray (10YR 6/1) (dry) silt

coatings and common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct light brownish gray (10YR 6/2) (dry) silt coatings and many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine faint brown (10YR 5/3) masses of oxidized iron-manganese and common medium prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; many prominent very dark gray (N 3/) and dark brown (7.5YR 3/2) iron-manganese concretions throughout; strongly acid; clear smooth boundary.

Bt3—37 to 45 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and few medium prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; strongly acid; gradual smooth boundary.

BC—45 to 55 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silt loam; massive; friable; many fine distinct yellowish brown (10YR 5/6) masses of oxidized iron and common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of soil development: 40 to more than 66 inches
Depth to carbonates: More than 48 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

Bt horizon(s):
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

BC or C horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have carbonates within a depth of 48 inches
- Soils that have a thinner dark surface layer
- Soils that have a seasonal high water table at a depth of less than 4 feet
- Soils that have more sand in the lower part of the subsoil and in the underlying material

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 4 to 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Palms Series

Taxonomic classification: Loamy, mixed, euic, mesic Terric Haplosaprists

Typical Pedon

Palms muck, undrained, 0 to 2 percent slopes, at an elevation of 475 feet; Woodford County, Illinois; 2,100 feet north and 1,300 feet west of the southeast corner of sec. 34, T. 27 N., R. 4 W.; USGS Spring Bay, Illinois, topographic quadrangle; lat. 40 degrees 45 minutes 12.2 seconds N. and long. 89 degrees 31 minutes 38.2 seconds W.; UTM Zone 16, 286651 easting, 4514456 northing; NAD 83:

Oa1—0 to 15 inches; black (10YR 2/1) (rubbed) sapric material; moderate fine granular structure; slightly sticky; 2 percent rubbed fiber; common fine and very fine roots; neutral; diffuse wavy boundary.

Oa2—15 to 26 inches; black (10YR 2/1) (rubbed) sapric material; weak medium subangular blocky structure; slightly sticky; 2 percent rubbed fiber; common fine and very fine roots; neutral; diffuse wavy boundary.

Oa3—26 to 41 inches; black (10YR 2/1) (rubbed) sapric material; weak coarse subangular blocky structure; slightly sticky; 2 percent rubbed fiber; common fine and very fine roots; neutral; gradual wavy boundary.
2Cg—41 to 60 inches; gray (5Y 5/1), stratified loam and sandy loam; massive; slightly sticky; few fine and very fine roots; slightly alkaline.

Range in Characteristics

Depth to the loamy C horizon: 16 to 51 inches

Surface tier:
Hue—10YR to 5YR or N
Value—2, 2.5, or 3
Chroma—0 to 2

Subsurface and bottom tiers:
Hue—10YR to 5YR or N
Value—2 to 4
Chroma—0 to 3

2C or 2Cg horizon(s):
Hue—10YR to 5Y, 5GY, or N
Value—3 to 7
Chroma—0 to 4
Texture—stratified sandy loam, loam, or silt loam

1100A—Palms muck, undrained, 0 to 2 percent slopes

Setting

Landform: Depressions

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that are more than 51 inches deep over loamy and sandy material

Dissimilar soils:
- The well drained Warsaw soils in the higher positions
- The excessively drained Coloma soils in the higher positions

Properties and Qualities of the Palms Soil

Parent material: Herbaceous organic material over loamy alluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 19.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 75 to 99 percent
Shrink-swell potential: Low
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 1 foot above the surface
Flooding: None
Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 5w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Peotone Series

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Peotone silty clay loam, 0 to 2 percent slopes, at an elevation of 728 feet; Ford County, Illinois; 315 feet south and 2,233 feet east of the northwest corner of sec. 21, T. 29 N., R. 9 E.; USGS Cabery, Illinois, topographic quadrangle; lat. 40 degrees 58 minutes 49 seconds N. and long. 88 degrees 12 minutes 0 seconds W.; UTM Zone 16, 399043 easting, 4537265 northing; NAD 83:

Ap—0 to 7 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—7 to 13 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bg1—13 to 27 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.

Bg2—27 to 41 inches; dark gray (10YR 4/1) silty clay; moderate fine prismatic structure; firm; common very fine roots; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Bg3—41 to 50 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure; few very fine roots; firm; common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; dark gray (10YR 4/1) silty clay loam; massive; firm; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to the base of soil development: 38 inches or more
Depth to carbonates: 30 inches or more

Ap or A horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

AB or BA horizon(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

Bg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 4 in the upper part; 4 to 6 in the lower part
Chroma—0 to 2
Texture—silty clay loam or silty clay

Cg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, silty clay, or silt loam

330A—Peotone silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Dips (fig. 8)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
• Soils that have a thinner dark surface soil
• Soils that have less clay in the subsoil
Dissimilar soils:
• The somewhat poorly drained Ipava and Chenoa soils in the higher positions

Properties and Qualities of the Peotone Soil

Parent material: Colluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5 to 7 percent
Shrink-swell potential: High
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

865—Pits, gravel

- This map unit consists of open excavations from which sand and gravel have been removed or are being removed (fig. 4).

Map Unit Composition

Pits: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Dissimilar components:
- The well drained Alvin, Dakota, and Warsaw soils in undisturbed areas
- The moderately well drained, loamy Orthents in adjacent areas
- The excessively drained Coloma soils in undisturbed areas
- Stockpiles of stone and debris
- Areas of junk machinery dumps

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

Plano Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Plano silt loam, 0 to 2 percent slopes, at an elevation of about 715 feet; Stark County, Illinois; 1,200 feet south and 1,920 feet east of the northwest corner of sec. 13, T. 12 N., R. 7 E.; USGS Castleton, Illinois, topographic quadrangle; lat. 41 degrees 1 minute 45 seconds N. and long. 89 degrees 39 minutes 0 seconds W.; UTM Zone 16, 277210 easting, 4545382 northing; NAD 83:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A—9 to 14 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Bt1—14 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—31 to 43 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; few fine faint yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt4—43 to 49 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.

2Bt5—49 to 53 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2BC—53 to 60 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many distinct dark yellowish brown (10YR 3/4) clay bridges between sand grains; about 5 percent gravel; neutral; gradual smooth boundary.

2C—60 to 72 inches; stratified yellowish brown (10YR 5/6) and brown (7.5YR 4/4) sandy loam, loam, and loamy sand; massive; friable; about 12 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the loess: 40 to 60 inches
Depth to the base of soil development: 44 to 70 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

AB or BA horizon(s) (where present):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bt horizon(s):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

2Bt or 2BC horizon(s):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—loam, sandy loam, clay loam, or sandy clay loam
Content of rock fragments—3 to 15 percent by volume

2C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture—stratified loam, loamy sand, sandy loam, or silt loam
Content of rock fragments—3 to 15 percent by volume

199A—Plano silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits (fig. 4)

Map Unit Composition

Plano and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the lower part of the subsoil
- Soils that have more sand throughout

Dissimilar soils:
- The poorly drained Drummer soils in swales

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

199B—Plano silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have more sand in the lower part of the subsoil

Dissimilar soils:
• The poorly drained Drummer soils in swales

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Proctor Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Proctor silt loam, 2 to 5 percent slopes, at an elevation of about 705 feet; Peoria County, Illinois; 204 feet north and 2,460 feet west of the southeast corner of sec. 3, T. 11 N., R. 6 E.; USGS Princeville, Illinois, topographic quadrangle; lat. 40 degrees 57 minutes 37 seconds N. and long. 89 degrees 48 minutes 8 seconds W.; UTM Zone 16, 264168 easting, 4538122 northing; NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; moderately acid; clear smooth boundary.
A—8 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
Bt1—11 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—16 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt3—23 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
2Bt4—28 to 33 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct dark

yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt5—33 to 46 inches; strong brown (7.5YR 5/6), stratified loam and sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; slightly acid; gradual smooth boundary.

2C—46 to 60 inches; strong brown (7.5YR 5/6), stratified sandy loam and loamy sand; massive; very friable; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the loess: 20 to 40 inches
Depth to the base of soil development: 40 to 65 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

Bt or BA horizon(s):
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, sandy clay loam, loam, or sandy loam; stratified in some pedons
Content of rock fragments—0 to 5 percent by volume

2C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam to loamy sand
Content of rock fragments—0 to 10 percent by volume

148B—Proctor silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil

- Soils that have less sand in the lower part of the subsoil and in the underlying material and have a seasonal high water table within a depth of 6 feet
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:

- The poorly drained Drummer soils in swales

Properties and Qualities of the Proctor Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Radford Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Radford silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 567 feet; Cass County, Illinois; 2,700 feet east and 1,320 feet south of the northwest corner of sec. 2, T. 17 N., R. 9 W.; USGS Ashland, Illinois, topographic quadrangle; lat. 39 degrees 57 minutes 23.2 seconds N. and long. 90 degrees 4 minutes 44.1 seconds W.; UTM Zone 15, 749520 easting, 4427010 northing; NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3 dry); weak medium subangular blocky structure parting to moderate fine and medium granular; friable; few very fine roots; neutral; clear smooth boundary.

A—7 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; few very fine roots; neutral; clear smooth boundary.

C—12 to 33 inches; dark grayish brown (10YR 4/2) and very dark grayish brown (10YR 3/2) silt loam with common thin grayish brown (10YR 5/2) and brown (10YR 5/3) lenses; massive; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings in worm channels; few fine spherical distinct black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries throughout; neutral; clear smooth boundary.

Ab1—33 to 42 inches; very dark gray (10YR 3/1) silt loam; weak fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots;

few fine spherical faint black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; slightly alkaline; gradual smooth boundary.

Ab2—42 to 72 inches; very dark gray (10YR 3/1) silt loam; moderate fine subangular blocky structure; friable; few very fine roots; few distinct gray (10YR 6/1) (dry) clay depletions on faces of peds; few fine spherical faint black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Bgb—72 to 80 inches; grayish brown (10YR 5/2) silt loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings lining root channels and pores; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of soil development: 10 to 20 inches
Depth to the buried soil: 20 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

C horizon(s):
Hue—10YR
Value—2 to 6
Chroma—1 to 4
Texture—silt loam; strata of silty clay loam in some pedons

Ab horizon(s):
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1
Texture—silt loam or silty clay loam

Bgb horizon(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silt loam or silty clay loam

8074A—Radford silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have a buried soil at a depth of more than 40 inches

Dissimilar soils:
- The poorly drained Sawmill soils in landscape positions similar to those of the Radford soil

Properties and Qualities of the Radford Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Raveenwash Series

Taxonomic classification: Coarse-loamy, mixed, superactive, calcareous, mesic Aquic Udifluvents

Typical Pedon

Raveenwash silt loam, 0 to 2 percent slopes, occasionally flooded, long duration, at an elevation of 460 feet; Woodford County, Illinois; 960 feet east and 1,120 feet north of the southwest corner of sec. 29, T. 28 N., R. 3 W.; USGS Germantown Hills Northwest, Illinois, topographic quadrangle; lat. 40 degrees 51 minutes 9.2 seconds N. and long. 89 degrees 28 minutes 54.9 seconds W.; UTM Zone 16, 290793 easting, 4525353 northing; NAD 83:

Ap—0 to 6 inches; brown (10YR 4/3) silt loam; weak very fine granular structure; friable; many very fine and fine roots; strongly effervescent; moderately alkaline; abrupt smooth boundary.

C1—6 to 17 inches; brown (10YR 4/3 and 5/3) and dark brown (10YR 3/3), stratified silt loam and very fine sandy loam; massive; friable; common very fine and fine roots; strongly effervescent; moderately alkaline; gradual smooth boundary.

C2—17 to 27 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3), stratified loam and fine sand; massive; friable; few very fine and fine roots; strongly effervescent; moderately alkaline; gradual smooth boundary.

C3—27 to 34 inches; brown (10YR 5/3) and dark grayish brown (2.5Y 4/2), stratified loam and sandy loam; massive; friable; few very fine and fine roots; few faint dark brown (7.5YR 3/4) masses of oxidized iron-manganese in root channels and/or pores; strongly effervescent; moderately alkaline; diffuse smooth boundary.

C4—34 to 45 inches; dark grayish brown (10YR 4/2) and dark yellowish brown (10YR 4/4), stratified loam and sandy loam; massive; friable; strongly effervescent; moderately alkaline; diffuse smooth boundary.

C5—45 to 60 inches; yellowish brown (10YR 5/4), brown (10YR 4/3), and grayish brown (2.5Y 5/2), stratified sand, sandy loam, and silt loam; massive; friable; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of soil development: 5 to 15 inches
Depth to carbonates: Less than 10 inches

Ap or A horizon(s):
Hue—10YR or 2.5Y
Value—2 to 4
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—0 to 10 percent by volume

C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—2 to 7
Chroma—1 to 8
Texture—stratified silt loam to sand
Content of rock fragments—0 to 10 percent by volume

8368L—Raveenwash silt loam, 0 to 2 percent slopes, occasionally flooded, long duration

Setting

Landform: Alluvial fans and flood plains

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the subsoil
- Soils that have more sand in the subsoil

Dissimilar soils:
- The excessively drained Sarpy soils in landscape positions similar to those of the Raveenwash soil
- The poorly drained Slacwater soils in the slightly lower positions

Properties and Qualities of the Raveenwash Soil

Parent material: Loamy alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Low
Apparent seasonal high water table: 1 to 2 feet below the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ross Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Ross loam, 0 to 2 percent, occasionally flooded, at an elevation of 665 feet; McLean County, Illinois; 680 feet north and 2,365 feet east of the southwest corner of sec. 34, T. 26 N., R. 2 E.; USGS Gridley, Illinois, topographic quadrangle; lat. 40 degrees 40 minutes 0.6 seconds N. and long. 88 degrees 58 minutes 34.2 seconds W.; UTM Zone 16, 332937 easting, 4503684 northing; NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; slightly alkaline; abrupt smooth boundary.
A1—8 to 16 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak medium granular; friable; slightly alkaline; clear smooth boundary.
A2—16 to 27 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; weak coarse subangular blocky structure; friable; slightly alkaline; clear smooth boundary.
A3—27 to 32 inches; very dark grayish brown (10YR 3/2) loam, light brownish gray (10YR 6/2) dry; weak coarse subangular blocky structure; friable; slightly alkaline; clear smooth boundary.
Bw—32 to 39 inches; brown (10YR 4/3) silt loam; moderate coarse subangular blocky structure; friable; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine faint dark yellowish brown (10YR 4/4) masses of oxidized iron-manganese in the matrix; 1 percent fine gravel; slightly alkaline; clear smooth boundary.
C—39 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; massive; friable; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches
Depth to the base of soil development: 24 to 45 inches
Depth to carbonates: 24 to 45 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3

Texture—loam
Content of rock fragments—0 to 5 percent by volume

Bw horizon(s):
Hue—10YR
Value—2 to 5
Chroma—2 to 4
Texture—silt loam
Content of rock fragments—0 to 10 percent by volume

C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silt loam
Content of rock fragments—0 to 15 percent by volume

8073A—Ross loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Ross and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 24 inches
- Soils that have less sand in the subsoil
- Soils that have less sand in the surface layer
- Soils that have carbonates at a depth of more than 45 inches

Dissimilar soils:
- The somewhat poorly drained Lawson soils in landscape positions similar to those of the Ross soil
- The poorly drained Sawmill soils in the slightly lower positions

Properties and Qualities of the Ross Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Rozetta Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Taxadjunct features: The Rozetta soils in this survey area have a seasonal high water table closer to the surface than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs.

Typical Pedon

Rozetta silt loam, 2 to 5 percent slopes, eroded, at an elevation of 640 feet; Tazewell County, Illinois; 1,125 feet north and 129 feet west of the southeast corner of sec. 4, T. 23 N., R. 4 W.; USGS Delavan North, Illinois, topographic quadrangle; lat. 40 degrees 28 minutes 10.9 seconds N. and long. 89 degrees 33 minutes 0.6 seconds W.; UTM Zone 16, 283805 easting, 4483013 northing; NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4) dry; weak medium subangular blocky structure parting to weak fine granular; friable; few fine roots throughout; moderately acid; clear smooth boundary.

Bt1—7 to 18 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; few fine roots throughout; many distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent black (2.5Y 2.5/1) manganese concretions throughout; strongly acid; clear smooth boundary.

Bt2—18 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; few fine roots throughout; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine prominent black (2.5Y 2.5/1) manganese concretions throughout; strongly acid; clear smooth boundary.

Bt3—26 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium subangular blocky structure; friable; few fine roots throughout; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium distinct grayish brown (2.5Y 5/2) iron depletions throughout; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron and common fine prominent black (2.5Y 2.5/1) manganese concretions throughout; moderately acid; clear smooth boundary.

Bt4—32 to 44 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few fine roots throughout; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine prominent grayish brown (2.5Y 5/2) iron depletions throughout; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron and common fine distinct black (2.5Y 2.5/1) manganese concretions throughout; moderately acid; gradual smooth boundary.

C—44 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; many fine distinct grayish brown (2.5Y 5/2) iron depletions throughout; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron and many fine prominent black (2.5Y 2.5/1) manganese concretions throughout; slightly acid.

Range in Characteristics

Depth to the base of soil development: 42 to 72 inches
Depth to carbonates: More than 60 inches

Ap or A horizon(s):
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

C horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

279B2—Rozetta silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits, shoulders, and backslopes (fig. 6)

Map Unit Composition

Rozetta and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface soil
- Soils that have more clay in the subsoil
- Soils that have more sand in the lower part of the subsoil and in the underlying material and have a seasonal high water table at a depth of more than 3.5 feet
- Soils that have a seasonal high water table at a depth of more than 3.5 feet
- Soils that have more clay in the subsoil and have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The poorly drained Sable soils in swales

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Russell Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Russell silt loam, 5 to 10 percent slopes, eroded, at an elevation of about 738 feet; Edgar County, Illinois; approximately 115 feet north and 235 feet west of the center of sec. 18, T. 12 N., R. 13 W.; USGS Westfield East, Illinois, topographic quadrangle; lat. 39 degrees 29 minutes 23 seconds N. and long. 87 degrees 53 minutes 48 seconds W.; UTM Zone 16, 422891 easting, 4371512 northing; NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; mixed with few yellowish brown (10YR 5/4) pockets of subsoil material in the lower part; moderate very fine and fine granular structure; friable; many very fine roots; few fine spherical faint black (10YR 2/1) very weakly cemented manganese concretions throughout; slightly acid; abrupt smooth boundary.

Bt1—7 to 13 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 5/3) clay films on faces of peds; few fine spherical distinct black (10YR 2/1) very weakly cemented manganese concretions throughout; very strongly acid; clear smooth boundary.

Bt2—13 to 21 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine spherical prominent black (10YR 2/1) very weakly cemented manganese concretions throughout; very strongly acid; clear smooth boundary.

Bt3—21 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common distinct light yellowish brown (10YR 6/4) (dry) silt coatings on faces of peds; common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine spherical distinct black (10YR 2/1) very weakly cemented manganese concretions throughout; very strongly acid; clear smooth boundary.

2Bt4—27 to 36 inches; yellowish brown (10YR 5/4) clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct light yellowish brown (10YR 6/4) (dry) silt coatings on faces of peds; few distinct brown (7.5YR 4/4) clay films on faces of peds; few fine spherical distinct black

(10YR 2/1) very weakly cemented manganese concretions throughout; 2 percent fine gravel; neutral; clear smooth boundary.

2Bt5—36 to 56 inches; strong brown (7.5YR 5/6) clay loam; weak coarse subangular blocky structure; firm; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; few distinct dark brown (10YR 3/3) organo-clay films lining roots channels and pores; few prominent black (10YR 2/1) manganese coatings on faces of peds; few fine and medium spherical prominent black (10YR 2/1) very weakly cemented manganese concretions throughout; 5 percent fine gravel; neutral; gradual smooth boundary.

2C—56 to 72 inches; yellowish brown (10YR 5/4) loam; massive; firm; few fine spherical distinct black (10YR 2/1) very weakly cemented manganese concretions throughout; 5 percent fine gravel; very slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to the base of soil development: 40 to 60 inches
Depth to carbonates: 40 to 60 inches

Ap or A horizon(s):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt horizon(s):
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

2Bt horizon(s):
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—clay loam
Content of rock fragments—1 to 10 percent by volume

2BC or 2BCt horizon(s) (where present):
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture—clay loam or loam
Content of rock fragments—1 to 14 percent by volume

2C horizon(s):
Hue—10YR or 2.5Y
Value—5
Chroma—3 to 6
Texture—loam
Content of rock fragments—1 to 14 percent by volume

322C2—Russell silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes (fig. 6)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 40 inches
- Soils that have more sand in the upper part of the subsoil
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Elpaso soils in swales

Properties and Qualities of the Russell Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 40 to 60 inches to dense material
Available water capacity: About 9.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

322D2—Russell silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have more sand in the upper part of the subsoil
- Soils that have carbonates at a depth of less than 40 inches

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains

Properties and Qualities of the Russell Soil

Parent material: Loess over till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: 40 to 60 inches to dense material
Available water capacity: About 9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Rutland Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls
Taxadjunct features: The Rutland soil in map unit 375B2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine, smectitic, mesic Aquollic Hapludalf.

Typical Pedon

Rutland silty clay loam, 0 to 2 percent slopes, at an elevation of 730 feet; Woodford County, Illinois; 168 feet north and 480 feet east of the southwest corner of sec. 34, T. 28 N., R. 2 E.; USGS Flanagan Southwest, Illinois, topographic quadrangle; lat. 40 degrees 50 minutes 23.1 seconds N. and long. 88 degrees 59 minutes 10.3 seconds W.; UTM Zone 16, 332550 easting, 4522867 northing; NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, very dark grayish brown (10YR 3/2) dry; weak very fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—8 to 14 inches; black (10YR 2/1) silty clay loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; common fine roots; moderately acid; clear wavy boundary.

Bt1—14 to 20 inches; brown (10YR 4/3) silty clay; strong fine subangular blocky structure; friable; common fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films and common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/6) masses of oxidized iron in the matrix; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; moderately acid; gradual wavy boundary.

Bt2—20 to 28 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine prismatic structure parting to strong fine subangular blocky; firm; common fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; gradual wavy boundary.

Bt3—28 to 36 inches; olive brown (2.5Y 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; gradual wavy boundary.

Bt4—36 to 44 inches; yellowish brown (10YR 5/6) and light brownish gray (2.5Y 6/2) silt loam; moderate medium and coarse prismatic structure; firm; few very fine roots; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds; neutral; clear wavy boundary.

2Bk—44 to 52 inches; olive brown (2.5Y 4/4) silty clay; moderate coarse prismatic structure; very firm; many distinct light brownish gray (2.5Y 6/2) calcium carbonate coatings along vertical faces of peds; common medium masses of calcium carbonate throughout; 1 percent pebbles; strongly effervescent; moderately alkaline; diffuse wavy boundary.

2Cd—52 to 60 inches; olive brown (2.5Y 4/4) clay; massive; very firm; many distinct light brownish gray (2.5Y 6/2) calcium carbonate coatings along vertical cleavage planes; 1 percent pebbles; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 18 inches
Depth to the base of soil development: 40 to 60 inches
Thickness of the loess: 35 to 55 inches
Other features: Some pedons have an AB or BA horizon.

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silty clay loam

Bt horizon(s):
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 4; 1 to 6 in the lower part
Texture—silty clay loam or silty clay in the upper part; silty clay loam or silt loam in the lower part

2Bt, 2BC, or 2Bk horizon(s):
Hue—10YR to 5G
Value—4 to 6
Chroma—1 to 6
Texture—silty clay or clay
Content of rock fragments—1 to 5 percent by volume

2Cd horizon(s):
Hue—10YR to 5G

Value—4 to 6
Chroma—1 to 6
Texture—silty clay or clay
Content of rock fragments—1 to 5 percent by volume

375A—Rutland silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Rises (fig. 8)

Map Unit Composition

Rutland and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil

Dissimilar soils:
- The poorly drained Streator soils on toeslopes

Properties and Qualities of the Rutland Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 40 to 60 inches to dense material
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: High
Perched seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

375B—Rutland silty clay loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes and footslopes

Map Unit Composition

Rutland and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have a thinner surface soil

Dissimilar soils:
- The poorly drained Streator soils on toeslopes

Properties and Qualities of the Rutland Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 40 to 60 inches to dense material
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.5 percent
Shrink-swell potential: High
Perched seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

375B2—Rutland silty clay loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and footslopes

Map Unit Composition

Rutland and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have a thicker surface soil

Dissimilar soils:
- The poorly drained Streator soils on toeslopes

Properties and Qualities of the Rutland Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 40 to 60 inches to dense material

Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: High
Perched seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Sabina Series

Taxonomic classification: Fine, smectitic, mesic Aeric Epiaqualfs

Typical Pedon

Sabina silt loam, 0 to 2 percent slopes, at an elevation of about 665 feet; Douglas County, Illinois; 1,785 feet north and 36 feet east of the southwest corner of sec. 13, T. 16 N., R. 7 E.; USGS Tuscola, Illinois, topographic quadrangle; lat. 39 degrees 50 minutes 24.5 seconds N. and long. 88 degrees 22 minutes 5 seconds W.; UTM Zone 16, 382946 easting, 4410914 northing; NAD 83:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate very fine granular structure; friable; strongly acid; abrupt smooth boundary.

E—8 to 12 inches; grayish brown (10YR 5/2) silt loam; moderate fine granular structure; friable; few fine concretions of iron-manganese throughout; strongly acid; clear smooth boundary.

BE—12 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; firm; common fine distinct dark grayish brown (2.5Y 4/2) iron depletions and few fine prominent black (7.5YR 2.5/1) manganese concretions throughout; moderately acid; clear smooth boundary.

Btg1—16 to 25 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix and few fine distinct black (7.5YR 2.5/1) manganese concretions throughout; moderately acid; clear smooth boundary.

Btg2—25 to 37 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate medium subangular blocky structure; firm; many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix and few fine distinct black (7.5YR 2.5/1) manganese concretions throughout; slightly acid; clear smooth boundary.

Bt1—37 to 43 inches; light olive brown (2.5Y 5/4) silty clay loam; weak and moderate medium and coarse subangular blocky structure; firm; common prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron and common medium distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine prominent black (7.5YR 2.5/1) manganese concretions throughout; neutral; clear smooth boundary.

2Bt2—43 to 50 inches; variegated yellowish brown (10YR 5/4), light olive brown (2.5Y 5/4), and dark grayish brown (10YR 4/2) clay loam; weak coarse subangular blocky structure; firm; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine pebbles; neutral; gradual irregular boundary.

2Cd—50 to 80 inches; light olive brown (2.5Y 5/3) loam; massive; very firm; common medium spherical black (7.5YR 2.5/1) moderately cemented concretions of manganese throughout; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron and common medium distinct gray (10YR 6/1) iron depletions in the matrix; common medium irregular prominent white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; 7 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of soil development: 44 to 75 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: 40 to 75 inches

Ap horizon(s):
Hue—10YR
Value—4 or 5 (5 or 6 dry)
Chroma—2
Texture—silt loam

E horizon(s):
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

BE horizon(s) (where present):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam

Bt or Btg horizon(s):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam; silty clay in some subhorizons in some pedons

2Bt or 2BC horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—clay loam, loam, silt loam, or silty clay loam
Content of rock fragments—0 to 5 percent by volume

2Cg, 2C, 2Cdg, or 2Cd horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—loam
Content of rock fragments—0 to 10 percent by volume

236A—Sabina silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and footslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the underlying material
- Soils that have less clay in the subsoil

Dissimilar soils:
- The well drained Senachwine soils in the higher, more sloping positions
- The poorly drained Elpaso soils in swales

Properties and Qualities of the Sabina Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Perched seasonal high water table: 0.5 foot to 2.0 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Sable Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Sable silty clay loam, 0 to 2 percent slopes, at an elevation of 732 feet; Warren County, Illinois; 1,281 feet south and 97 feet west of the northeast corner of sec. 14, T. 9 N., R. 3 W.; USGS Kirkwood East, Illinois, topographic quadrangle; lat. 40 degrees 46 minutes 22 seconds N. and long. 90 degrees 41 minutes 34 seconds W.; UTM Zone 15, 694709 easting, 4516111 northing; NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.

A—8 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine distinct spherical dark reddish brown (5YR 3/2) iron-manganese concretions throughout; slightly acid; clear smooth boundary.

AB—19 to 23 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine spherical distinct dark reddish brown (5YR 3/2) iron-manganese concretions throughout; slightly acid; clear smooth boundary.

Bg—23 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine and medium spherical distinct dark reddish brown (5YR 3/2) iron-manganese concretions throughout; common medium distinct brown (10YR 5/3) masses of oxidized iron-manganese in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—29 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many fine and medium spherical distinct dark reddish brown (5YR 3/2) iron-manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear wavy boundary.

Btg2—38 to 47 inches; gray (N 5/) silt loam; weak medium prismatic structure parting to weak medium and coarse angular blocky; firm; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine spherical distinct dark reddish brown (5YR 3/2) iron-manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches; gray (N 6/) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 60 inches
Other features: Some pedons have a BC or BCg horizon.

Ap or A horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

AB or BA horizon(s) (where present):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

Btg or Bg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6

Chroma—0 to 2
Texture—silt loam or silty clay loam

Cg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silt loam

68A—Sable silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes and talfs (fig. 5)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil
- Soils that have more clay in the subsoil
- Soils that have a lighter colored surface soil and have a seasonal high water table at a depth of more than 1 foot
- Soils that have carbonates at a depth of less than 40 inches

Dissimilar soils:
- The moderately well drained Buckhart soils in the higher positions

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.5 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Sarpy Series

Taxonomic classification: Mixed, mesic Typic Udipsamments

Typical Pedon

Sarpy loamy fine sand, 0 to 2 percent slopes, frequently flooded, long duration, at an elevation of 443 feet; Woodford County, Illinois; 700 feet north and 640 feet west of the southeast corner of sec. 22, T. 27 N., R. 4 W.; USGS Spring Bay, Illinois, topographic quadrangle; lat. 40 degrees 46 minutes 46 seconds N. and long. 89 degrees 32 minutes 39 seconds W.; UTM Zone 16, 285302 easting, 4517393 northing; NAD 83:

A—0 to 10 inches; brown (10YR 5/3) loamy fine sand, pale brown (10YR 6/3) dry; weak very fine and fine subangular blocky structure; very friable; common very fine and fine roots throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

C1—10 to 19 inches; stratified yellowish brown (10YR 5/4) and brown (10YR 5/3) fine sand; single grain; loose; few very fine and fine roots throughout; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—19 to 60 inches; yellowish brown (10YR 5/4) fine sand; single grain; loose; few very fine and fine roots throughout; 10 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 0 to 60 inches

Ap or A horizon(s):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 3
Texture—loamy fine sand

C horizon(s):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—loamy fine sand, loamy sand, fine sand, or sand
Content of rock fragments—0 to 10 percent by volume

3092L—Sarpy loamy fine sand, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Flood plains and natural levees

Map Unit Composition

Sarpy and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay in the underlying material
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Raveenwash soils in landscape positions similar to those of the Sarpy soil
- The poorly drained Slacwater soils in the slightly lower positions

Properties and Qualities of the Sarpy Soil

Parent material: Sandy alluvium
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 4w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Sawmill Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 535 feet; Sangamon County, Illinois; 300 feet south and 750 feet east of the northwest corner of sec. 20, T. 15 N., R. 4 W.; USGS New City, Illinois, topographic quadrangle; lat. 39 degrees 44 minutes 34 seconds N. and long. 89 degrees 34 minutes 15 seconds W.; UTM Zone 16, 279712 easting, 4402375 northing; NAD 83:

Ap—0 to 10 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots; few subspherical pebbles 1 to 3 mm in diameter; slightly acid; clear smooth boundary.

A1—10 to 17 inches; black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots; few subspherical pebbles 1 to 3 mm in diameter; few fine spherical faint black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear smooth boundary.

A2—17 to 25 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots; few fine spherical faint black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear smooth boundary.

AB—25 to 32 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; few fine spherical faint black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear smooth boundary.

Bg—32 to 40 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine roots; few fine spherical faint black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Btg1—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine spherical distinct black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Btg2—49 to 58 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; common distinct gray (10YR 5/1) clay films on faces of peds; few fine spherical prominent black (7.5YR 2.5/1) weakly cemented manganese concretions with diffuse boundaries lining pores; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Cg—58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron lining pores; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to the base of soil development: 36 to 60 inches

Ap, A, or AB horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam
Content of rock fragments—0 to 2 percent by volume

Bg or Btg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam
Content of rock fragments—0 to 2 percent by volume

Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or clay loam
Content of rock fragments—0 to 2 percent by volume

8107A—Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains (fig. 7)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the subsoil
- Soils that have a thicker surface soil
- Soils that have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The well drained Huntsville soils in the slightly higher positions
- Sawmill soils that are subject to frequent flooding

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 7 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Saybrook Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Saybrook soils in map units 145B2 and 145C2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Saybrook silt loam, 2 to 5 percent slopes, at an elevation of 698 feet; Bureau County, Illinois; 2,500 feet south and 1,300 feet east of the northwest corner of sec. 3, T. 16

N., R. 7 E.; USGS Manlius, Illinois, topographic quadrangle; lat. 41 degrees 24 minutes 7.2 seconds N. and long. 89 degrees 40 minutes 48.8 seconds W.; UTM Zone 16, 0275954 easting, 4586851 northing; NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

AB—10 to 15 inches; very dark brown (10YR 2/2) and brown (10YR 4/3) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; friable; neutral; clear wavy boundary.

Bt1—15 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct very dark brown (10YR 2/2) organo-clay films on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear wavy boundary.

Bt2—21 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear wavy boundary.

Bt3—26 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common irregular prominent black (7.5YR 2.5/1) very weakly cemented manganese accumulations throughout; slightly acid; clear wavy boundary.

Bt4—30 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common irregular prominent black (7.5YR 2.5/1) very weakly cemented manganese accumulations throughout; neutral; clear wavy boundary.

2Bt5—32 to 36 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; friable; few distinct brown (7.5YR 4/3) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common irregular distinct black (7.5YR 2.5/1) very weakly cemented manganese accumulations throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

2C—36 to 60 inches; brown (7.5YR 4/4) loam; massive; friable; many medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common irregular distinct black (7.5YR 2.5/1) very weakly cemented manganese accumulations throughout; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 18 inches
Depth to carbonates: Less than 40 inches
Depth to the base of soil development: 24 to 40 inches
Thickness of the loess: 20 to 40 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam

Bt horizon(s):
Hue—10YR

Value—3 to 5
Chroma—1 to 6
Texture—silty clay loam or silt loam

2Bt horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—clay loam
Content of rock fragments—0 to 10 percent by volume

2C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—loam
Content of rock fragments—0 to 10 percent by volume

145B—Saybrook silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand within a depth of 40 inches
- Soils that have more sand throughout the subsoil
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have more clay in the subsoil and have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The poorly drained Elpaso soils in swales

Properties and Qualities of the Saybrook Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

145B2—Saybrook silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more sand throughout the subsoil
- Soils that have less sand within a depth of 40 inches
- Soils that have a thicker dark surface soil
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have more clay in the subsoil and have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The poorly drained Elpaso soils in swales

Properties and Qualities of the Saybrook Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

145C2—Saybrook silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand within a depth of 40 inches
- Soils that have more sand throughout the subsoil
- Soils that have a thicker dark surface soil
- Soils that have more clay in the subsoil and have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The somewhat poorly drained Lawson and Radford soils on flood plains
- The poorly drained Elpaso soils in swales
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Saybrook Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Selma Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Selma loam, 0 to 2 percent slopes, at an elevation of 656 feet; Iroquois County, Illinois; 52 feet south and 160 feet west of the northeast corner of sec. 18, T. 28 N., R. 10 E.; USGS Piper City Northeast, Illinois, topographic quadrangle; lat. 40 degrees

54 minutes 35 seconds N. and long. 88 degrees 6 minutes 43 seconds W.; UTM Zone 16, 406352 easting, 4529334 northing; NAD 83:

Ap—0 to 6 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; gradual smooth boundary.

A—6 to 13 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; common fine roots; neutral; gradual wavy boundary.

Btg1—13 to 19 inches; dark grayish brown (2.5Y 4/2) clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; many prominent very dark gray (2.5Y 3/1) organo-clay films on faces of peds and on surfaces along pores; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; neutral; gradual wavy boundary.

Btg2—19 to 28 inches; grayish brown (2.5Y 5/2) loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many prominent dark gray (2.5Y 4/1) clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/4) iron-manganese nodules throughout; common medium distinct olive brown (2.5Y 4/4) masses of oxidized iron-manganese in the matrix; slightly alkaline; gradual wavy boundary.

Btg3—28 to 39 inches; grayish brown (2.5Y 5/2) loam; weak fine and medium subangular blocky structure; friable; common fine roots; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; black (N 2.5/) krotovina at a depth of 76 to 99 centimeters (30 to 39 inches); few fine prominent dark yellowish brown (10YR 4/6) iron-manganese nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of oxidized iron in the matrix; slightly alkaline; gradual wavy boundary.

BCtg—39 to 44 inches; grayish brown (2.5Y 5/2) loam; weak medium subangular blocky structure; friable; few very fine roots; few faint dark gray (2.5Y 4/1) clay films on faces of peds; few fine prominent dark yellowish brown (10YR 4/6) iron-manganese nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of oxidized iron in the matrix; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg1—44 to 54 inches; 55 percent dark gray (2.5Y 4/1), 35 percent gray (2.5Y 5/1), and 10 percent light yellowish brown (2.5Y 6/4), stratified sandy loam and loamy sand; massive in the sandy loam and single grain in the loamy sand; friable in the sandy loam and loose in the loamy sand; few very fine roots; violently effervescent; moderately alkaline; gradual wavy boundary.

Cg2—54 to 80 inches; 45 percent dark gray (2.5Y 4/1), 45 percent gray (2.5Y 5/1), and 10 percent light olive brown (2.5Y 5/6), stratified silt loam, sandy loam, and loamy sand; massive in the silt loam and sandy loam and single grain in the loamy sand; friable in the silt loam and sandy loam and loose in the loamy sand; few very fine roots; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of soil development: 35 to 55 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—loam or clay loam

Btg or BCtg horizon(s):
Hue—10YR, 2.5Y, 5Y, or N

Value—4 to 6
Chroma—0 to 2
Texture—sandy loam, loam, clay loam, or silty clay loam
Content of rock fragments—0 to 10 percent by volume

Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—stratified sandy loam, loam, silt loam, loamy sand, or sand
Content of rock fragments—0 to 15 percent by volume

125A—Selma loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Toeslopes and talfs (fig. 4)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the subsoil
- Soils that have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The well drained Alvin and Warsaw soils in the higher positions
- The excessively drained Coloma soils in positions above those of the Selma soil

Properties and Qualities of the Selma Soil

Parent material: Outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 6 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Senachwine Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Senachwine silt loam, 10 to 18 percent slopes, eroded, at an elevation of 856 feet; Bureau County, Illinois; 1,040 feet west and 1,345 feet south of the northeast corner of sec. 21, T. 15 N., R. 8 E.; USGS Wyanet, Illinois, topographic quadrangle; lat. 41 degrees 16 minutes 25 seconds N. and long. 89 degrees 34 minutes 18 seconds W.; UTM Zone 16, 284598 easting, 4572325 northing; NAD 83:

Ap—0 to 6 inches; mixed dark brown (10YR 4/3) and yellowish brown (10YR 5/4) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

Bt1—6 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt2—15 to 28 inches; brown (7.5YR 5/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; few fine spherical black (N 2.5/) weakly cemented manganese concretions throughout; neutral; clear smooth boundary.

2BCt—28 to 34 inches; brown (7.5YR 5/4) loam; weak coarse prismatic structure; firm; few fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; 5 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—34 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: Less than 18 inches
Depth to the base of soil development: 24 to 40 inches
Depth to carbonates: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 4
Texture—loam or silt loam
Content of rock fragments—0 to 3 percent by volume

Bt or 2Bt horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam, clay loam, or loam
Content of rock fragments—1 to 10 percent by volume

C or 2C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture—loam
Content of rock fragments—1 to 10 percent by volume

618C2—Senachwine silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Senachwine and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have less sand in the upper part of the subsoil
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

618D2—Senachwine silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Senachwine and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have less sand in the upper part of the subsoil
- Soils that have a thinner surface layer
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

883F—Senachwine-Hennepin loams, 18 to 35 percent slopes

Setting

Landform: Bluffs and ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Senachwine and similar soils: 50 percent
Hennepin and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the surface layer and subsoil

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The moderately well drained Birkbeck and Rozetta soils in the higher, less sloping positions

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Calcareous till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Senachwine—6e; Hennepin—6e
Prime farmland category: Not prime farmland
Hydric soil status: Senachwine—not hydric; Hennepin—not hydric

883G—Senachwine-Hennepin loams, 35 to 60 percent slopes

Setting

Landform: Bluffs and ground moraines
Position on the landform: Backslopes (fig. 6)

Map Unit Composition

Senachwine and similar soils: 50 percent
Hennepin and similar soils: 30 percent
Dissimilar soils: 20 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand in the surface layer and subsoil

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The moderately well drained Birkbeck and Rozetta soils in the higher, less sloping positions

Properties and Qualities of the Senachwine Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Hennepin Soil

Parent material: Calcareous till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Senachwine—7e; Hennepin—7e
Prime farmland category: Not prime farmland
Hydric soil status: Senachwine—not hydric; Hennepin—not hydric

Slacwater Series

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, mesic Mollic Fluvaquents

Typical Pedon

Slacwater silt loam, 0 to 2 percent slopes, frequently flooded, long duration, at an elevation of 450 feet; Woodford County, Illinois; 1,440 feet west and 1,660 feet north of the southeast corner of sec. 30, T. 28 N., R. 3 W.; USGS Germantown Hills Northwest, Illinois, topographic quadrangle; lat. 40 degrees 51 minutes 14.1 seconds N. and long. 89 degrees 29 minutes 26.1 seconds W.; UTM Zone 16, 290065 easting, 4525527 northing; NAD 83:

A—0 to 6 inches; very dark grayish brown (10YR 3/2) and dark grayish brown (2.5Y 4/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine and fine roots; strongly effervescent; slightly alkaline; abrupt smooth boundary.
Cg1—6 to 15 inches; dark grayish brown (2.5Y 4/2) and light brownish gray (2.5Y 6/2) silt loam; massive; friable; many very fine and fine roots; few patchy prominent strong brown (7.5YR 4/6) iron stains and few fine masses of oxidized iron throughout; strongly effervescent; slightly alkaline; gradual smooth boundary.
Cg2—15 to 22 inches; grayish brown (2.5Y 5/2), pale olive (5Y 6/3), and light olive brown (2.5Y 5/4) silt loam; massive; friable; common very fine and fine roots; few patchy prominent strong brown (7.5YR 4/6) iron stains and few fine masses of oxidized iron throughout; strongly effervescent; slightly alkaline; gradual smooth boundary.
Cg3—22 to 60 inches; olive gray (5Y 4/2), pale olive (5Y 6/3), and light olive brown (2.5Y 5/6) silty clay loam; massive; friable; common very fine and fine roots; few prominent strong brown (7.5YR 4/6) iron stains throughout; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: Less than 10 inches

A horizon(s):
Hue—10YR or 2.5Y
Value—2 to 4
Chroma—1 to 3
Texture—silt loam

Cg or C horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—2 to 7
Chroma—1 to 6
Texture—silt loam or silty clay loam; strata of silt, loam, fine sandy loam, or loamy fine sand in some pedons

3360L—Slacwater silt loam, 0 to 2 percent slopes, frequently flooded, long duration

Setting

Landform: Flood plains

Map Unit Composition

Slacwater and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand in the underlying material

Dissimilar soils:
- The excessively drained Sarpy soils in the slightly higher areas

Properties and Qualities of the Slacwater Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Low
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Spaulding Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Spaulding silty clay loam, 0 to 2 percent slopes, at an elevation of about 612 feet; Sangamon County, Illinois; 2,410 feet east and 1,300 feet south of the northwest corner of sec. 22, T. 17 N., R. 3 W.; USGS Cornland, Illinois, topographic quadrangle; lat. 39 degrees 54 minutes 52 seconds N. and long. 89 degrees 24 minutes 54 seconds W.; UTM Zone 16, 293580 easting, 4421059 northing; NAD 83:

Apk—0 to 9 inches; black (10YR 2/1) silty clay loam, very dark gray (10YR 3/1) dry; weak and moderate fine granular structure; friable; many fine roots throughout; few snail shells; violently effervescent; 15 percent calcium carbonate equivalent; moderately alkaline; abrupt smooth boundary.

Ak1—9 to 18 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine and fine subangular blocky structure; friable; many fine roots throughout; few snail shells; violently effervescent; 22 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Ak2—18 to 22 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate very fine and fine subangular blocky structure; firm; common fine roots throughout; few fine prominent light olive brown (2.5Y 5/6) masses of oxidized iron along micropores; few snail shells; violently effervescent; 22 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Btgk1—22 to 26 inches; dark gray (2.5Y 4/1) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common fine roots throughout; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct black (10YR 2/1) organic coatings in root channels and/or pores; few fine prominent light olive brown (2.5Y 5/6) masses of oxidized iron along micropores; few fine carbonate nodules; strongly effervescent; 12 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Btgk2—26 to 32 inches; olive gray (5Y 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine roots throughout; few distinct gray (5Y 5/1) clay films on faces of peds; common fine spherical prominent black (10YR 2/1) masses of manganese in the matrix; common medium prominent light olive brown (2.5Y 5/6) and yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common medium and coarse carbonate nodules; strongly effervescent; 12 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Btgk3—32 to 38 inches; gray (5Y 6/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; few distinct gray (5Y 5/1) clay films on faces of peds; very few distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores; many fine prominent light olive brown (2.5Y 5/6) and few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine carbonate nodules; strongly effervescent; 16 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

BCgk—38 to 44 inches; gray (5Y 6/1) silty clay loam; weak medium subangular blocky structure; firm; few distinct gray (5Y 5/1) clay films in root channels and/or pores; few distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores; many fine prominent light olive brown (2.5Y 5/6) and few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine carbonate nodules; strongly effervescent; 16 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

Cg—44 to 80 inches; gray (5Y 6/1) silt loam; massive; friable; many medium prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; strongly effervescent; 19 percent calcium carbonate equivalent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the calcic horizon: 0 to 16 inches
Depth to the base of soil development: 22 to 60 inches
Other features: Some pedons have a BCg or BCgk horizon.

Apk or Ak horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

Bgk or Btgk horizon(s):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

Cg horizon(s):
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam

712A—Spaulding silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Talfs and toeslopes (fig. 5)

Map Unit Composition

Spaulding and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 1 foot
- Soils that have do not have carbonates within a depth of 16 inches
- Soils that have do not have carbonates within a depth of 16 inches and have a seasonal high water table at a depth of more than 1 foot

Properties and Qualities of the Spaulding Soil

Parent material: Calcareous loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 6 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

St. Charles Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

St. Charles silt loam, 2 to 5 percent slopes, at an elevation of about 623 feet; Bureau County, Illinois; 80 feet north and 2,170 feet west of the southeast corner of sec. 26, T. 16 N., R. 8 E.; USGS Wyanet, Illinois, topographic quadrangle; lat. 41 degrees 20 minutes 9 seconds N. and long. 89 degrees 32 minutes 12 seconds W.; UTM Zone 16, 287732 easting, 4579148 northing; NAD 83:

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.

Bt1—8 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; many distinct dark brown (10YR 3/3) organic coatings and dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—15 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—21 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine spherical distinct black (10YR 2/1) manganese accumulations in the matrix; moderately acid; clear smooth boundary.

Bt4—34 to 44 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; many distinct dark yellowish brown (10YR 4/4) clay films and many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct brown (7.5YR 4/4) masses of oxidized iron-manganese in the matrix; moderately acid; clear smooth boundary.

Bt5—44 to 50 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; many distinct dark yellowish brown (10YR 4/4) clay films and light gray (10YR 7/2) (dry) silt coatings on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

2Bt6—50 to 57 inches; yellowish brown (10YR 5/6), stratified loam, sandy loam, and silt loam; weak medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2C—57 to 60 inches; yellowish brown (10YR 5/4), stratified loam and silt loam; massive; friable; moderately acid.

Range in Characteristics

Depth to the base of soil development: 44 to 70 inches
Depth to carbonates: More than 44 inches
Thickness of the loess: 40 to 60 inches

Ap or A horizon(s):
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon(s) (where present):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

BE or Bt horizon(s):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam, sandy loam, fine sandy loam, clay loam, or silt loam
Content of rock fragments—0 to 15 percent by volume

2C horizon(s):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6

Texture—stratified sandy loam, loam, or silt loam
Content of rock fragments—0 to 15 percent by volume

243A—St. Charles silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Map Unit Composition

St. Charles and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand within a depth of 40 inches
- Soils that have more sand throughout

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the St. Charles Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

243B—St. Charles silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

St. Charles and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have more sand within a depth of 40 inches
- Soils that have more sand throughout
- Soils that have less sand in the underlying material and have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Lawson soils on flood plains
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the St. Charles Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Strawn Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Strawn loam, 18 to 25 percent slopes, at an elevation of 630 feet; Tazewell County, Illinois; 2 miles northwest of Armington; 1,944 feet north and 96 feet west of the southeast corner of sec. 17, T. 22 N., R. 2 W.; USGS Armington, Illinois, topographic quadrangle; lat. 40 degrees 21 minutes 30.9 seconds N. and long. 89 degrees 20 minutes 28.5 seconds W.; UTM Zone 16, 0301191 easting, 4470190 northing; NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3 and 5/3) loam, pale brown (10YR 6/3) and very pale brown (10YR 7/3) dry; weak fine and medium granular structure; friable; common fine roots; few pebbles; neutral; abrupt smooth boundary.

Bt1—7 to 11 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; firm; few fine roots; many faint brown (10YR 4/3) clay films on faces of peds; few pebbles; neutral; clear smooth boundary.

Bt2—11 to 22 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many faint brown (10YR 4/3) clay films on faces of peds; few pebbles; neutral; clear smooth boundary.

C—22 to 60 inches; brown (10YR 5/3) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; few pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of soil development: 16 to 24 inches
Depth to carbonates: 14 to 24 inches

Ap or A horizon(s):
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam or loam
Content of rock fragments—0 to 7 percent by volume

E or BE horizon(s) (where present):
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam or loam
Content of rock fragments—0 to 7 percent by volume

Bt or BC horizon(s):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, silty clay loam, or loam
Content of rock fragments—3 to 15 percent by volume

C horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture—loam
Content of rock fragments—3 to 15 percent by volume

224D2—Strawn silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Strawn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 14 inches
- Soils that have carbonates at a depth of more than 24 inches
- Soils that have more clay in the subsoil
- Soils that have a dark surface soil
- Soils that have less sand in the subsoil and have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
• The somewhat poorly drained Radford soils on flood plains

Properties and Qualities of the Strawn Soil

Parent material: Calcareous till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Streator Series

Taxonomic classification: Fine, smectitic, mesic Vertic Endoaquolls

Typical Pedon

Streator silty clay loam, 0 to 2 percent slopes, at an elevation of 738 feet; Marshall County, Illinois; 2,544 feet north and 150 feet west of the southeast corner of sec. 36, T. 29 N., R. 1 E.; USGS Minonk, Illinois, topographic quadrangle; lat. 40 degrees 55 minutes 58 seconds N. and long. 89 degrees 2 minutes 54 seconds W.; UTM Zone 16, 327548 easting, 4533324 northing; NAD 83:

Ap—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—9 to 13 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

BA—13 to 17 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and very fine subangular blocky; friable; common very fine roots; common fine spherical distinct yellowish brown (10YR 5/4) masses of oxidized iron with diffuse boundaries throughout the matrix; neutral; clear smooth boundary.

Bg—17 to 24 inches; gray (5Y 5/1) silty clay; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine spherical prominent yellowish brown (10YR 5/4) masses of oxidized iron with diffuse boundaries and common fine spherical prominent black (10YR 2/1) manganese nodules with diffuse boundaries throughout the matrix; neutral; clear smooth boundary.

Btg1—24 to 33 inches; gray (5Y 5/1) silty clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; many distinct dark gray (10YR 4/1) clay films on faces of peds; common fine spherical prominent yellowish brown (10YR 5/6) masses of oxidized iron with diffuse boundaries and common fine and medium spherical prominent black (10YR 2/1) manganese nodules with diffuse boundaries throughout the matrix; neutral; gradual smooth boundary.

Btg2—33 to 42 inches; gray (5Y 5/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine spherical prominent yellowish brown (10YR 5/6) masses of oxidized iron and prominent brown (10YR 5/3) masses of oxidized iron-manganese with diffuse boundaries and common fine and medium spherical prominent black (10YR 2/1) manganese nodules with diffuse boundaries throughout the matrix; neutral; clear wavy boundary.

2Btg3—42 to 56 inches; grayish brown (2.5Y 5/2) clay; weak medium prismatic structure; firm; few very fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; common fine spherical prominent yellowish brown (10YR 5/6) and distinct light olive brown (2.5Y 5/4) masses of oxidized iron with diffuse boundaries throughout the matrix; many fine faint gray (5Y 6/1) iron depletions lining pores; about 5 percent rock fragments; slightly alkaline; gradual wavy boundary.

2BCkg—56 to 68 inches; grayish brown (2.5Y 5/2) silty clay; weak coarse prismatic structure; very firm; few very fine roots; common prominent light gray (5Y 7/1) carbonate coatings on faces of peds and lining root pores; common fine spherical prominent yellowish brown (10YR 5/6) and many fine and medium distinct light olive brown (2.5Y 5/4) masses of oxidized iron with diffuse boundaries and common fine irregular prominent white (10YR 8/1) carbonate nodules throughout the matrix; many fine faint gray (5Y 6/1) iron depletions lining pores; about 5 percent rock fragments; slightly effervescent; moderately alkaline; gradual wavy boundary.

2Cg—68 to 80 inches; grayish brown (2.5Y 5/2) silty clay; massive; very firm; many fine and medium spherical distinct light olive brown (2.5Y 5/4) masses of oxidized iron with diffuse boundaries throughout the matrix; common fine faint gray (5Y 6/1) iron depletions throughout the matrix; about 5 percent rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of soil development: 40 to 70 inches
Depth to carbonates: 35 to 60 inches
Thickness of the loess: 30 to 50 inches

Ap and A horizons:
Hue—10YR
Value—2
Chroma—1 or 2
Texture—silty clay loam

BA or AB horizon(s) (where present):
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay

Bg and Btg horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay

2Btg and 2BCkg horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay or clay
Content of rock fragments—0 to 5 percent by volume

2Cg horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay or clay
Content of rock fragments—0 to 10 percent by volume

435A—Streator silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes and talfs (fig. 8)

Map Unit Composition

Streator and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have less sand in the lower part of the subsoil and in the underlying material
- Soils that have a seasonal high water table at a depth of more than 1 foot

Dissimilar soils:
- The moderately well drained Wenona soils in the higher positions

Properties and Qualities of the Streator Soil

Parent material: Loess over till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Very slow to moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 7 percent
Shrink-swell potential: High
Apparent seasonal high water table: At the surface to 1 foot below the surface
Ponding: At the surface to 0.5 foot above the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Swygert Series

Taxonomic classification: Fine, mixed, active, mesic Aquic Argiudolls
Taxadjunct features: The Swygert soil in map unit 91B2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine, mixed, active, mesic Aquollic Hapludalf.

Typical Pedon

Swygert silty clay loam, 0 to 2 percent slopes; at an elevation of 675 feet; Iroquois County, Illinois; 339 feet south and 66 feet east of the northwest corner of sec. 7, T. 25 N., R. 13 W.; USGS Onarga East, Illinois, topographic quadrangle; lat. 40 degrees 38 minutes 36 seconds N. and long. 87 degrees 53 minutes 4 seconds W.; UTM Zone 16, 425215 easting, 4499540 northing; NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; many fine roots; slightly acid; abrupt wavy boundary.

A—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak medium angular blocky structure parting to weak fine subangular blocky; friable; many fine roots; common black (N 2.5/) krotovinas; slightly acid; abrupt smooth boundary.

Bt1—12 to 18 inches; very dark grayish brown (10YR 3/2) silty clay, gray (10YR 5/1) dry; moderate fine subangular blocky structure; friable; many fine roots; many distinct black (10YR 2/1) and very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) manganese concretions throughout; common fine faint brown (10YR 4/3) masses of oxidized iron-manganese in the matrix; slightly acid; clear wavy boundary.

Bt2—18 to 26 inches; brown (10YR 4/3) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron and common fine distinct olive gray (5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—26 to 31 inches; yellowish brown (10YR 5/4) silty clay; moderate medium prismatic structure parting to weak medium and fine angular blocky; firm; common fine roots; common distinct very dark gray (10YR 3/1) organo-clay films in root channels; common distinct dark gray (10YR 4/1) and gray (10YR 5/1) clay films on faces of peds; common very dark gray (10YR 3/1) krotovinas; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent; moderately alkaline; gradual smooth boundary.

2Bt4—31 to 41 inches; light olive brown (2.5Y 5/4) silty clay; moderate medium prismatic structure parting to weak coarse angular blocky; very firm; few fine roots; common prominent very dark gray (10YR 3/1) organo-clay films and gray (5Y 5/1) clay films on faces of peds; common medium prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent; moderately alkaline; gradual smooth boundary.

2Bt5—41 to 51 inches; light olive brown (2.5Y 5/4) silty clay; weak coarse prismatic structure; very firm; few fine roots; common distinct very dark gray (5Y 3/1) organo-clay films in root channels; many distinct dark gray (5Y 4/1) clay films on faces of peds; common fine prominent black (10YR 2/1) manganese concretions throughout; few fine distinct olive (5Y 5/6) and few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common fine prominent gray (5Y 5/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual smooth boundary.

2Cd—51 to 60 inches; brown (10YR 5/3) silty clay; massive; very firm; many distinct gray (5Y 6/1) pressure faces; common fine distinct black (10YR 2/1) manganese concretions throughout; few coarse prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 19 inches
Depth to the base of soil development: 35 to 55 inches
Depth to carbonates: 20 to 50 inches
Thickness of the loess: Less than 20 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silty clay loam

Bt or 2Bt horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 6
Texture—silty clay or clay
Content of rock fragments—0 to 3 percent by volume

2Cd horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay, clay, or silty clay loam
Content of rock fragments—0 to 5 percent by volume

91A—Swygert silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and footslopes (fig. 8)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil

- Soils that have less clay in the subsoil and have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Streator soils in swales

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: High
Perched seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

91B2—Swygert silty clay loam, 2 to 4 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and footslopes (fig. 8)

Map Unit Composition

Swygert and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have less clay in the subsoil and have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Streator soils in swales

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: High
Perched seasonal high water table: 1 to 2 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

533—Urban land

- This map unit consists of areas covered by parking lots, streets, buildings, or other structures.

Map Unit Composition

Urban land: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Dissimilar components:
- The moderately well drained Birkbeck soils in undisturbed areas
- The somewhat poorly drained Flanagan, Ipava, and Keomah soils in undisturbed areas
- The poorly drained Elpaso soils in undisturbed areas

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

Varna Series

Taxonomic classification: Fine, illitic, mesic Oxyaquic Argiudolls
Taxadjunct features: The Varna soils in map units 223B2 and 223C2 have a thinner dark surface layer than is defined as the range for the series, and the Varna soil in map unit 223D has a seasonal high water table at a lower depth. These differences, however, do not significantly affect the use and management of the soils. The Varna soils in map units 223B2 and 223C2 are classified as fine, illitic, mesic Mollic Oxyaquic Hapludalfs. The Varna soil in map unit 223D is classified as a fine, illitic, mesic Typic Argiudoll.

Typical Pedon

Varna silty clay loam, 5 to 10 percent slopes, eroded, at an elevation of 1,017 feet; Marshall County, Illinois; 500 feet north and 1,780 feet east of the southwest corner of sec. 15, T. 29 N., R. 1 W.; USGS Minonk, Illinois, topographic quadrangle; lat. 40 degrees 58 minutes 15.8 seconds N. and long. 89 degrees 12 minutes 43.8 seconds W.; UTM Zone 16, 313866 easting, 4537900 northing; NAD 83:

Ap—0 to 8 inches; mixed, 80 percent very dark grayish brown (10YR 3/2) and 20 percent dark yellowish brown (10YR 4/4) silty clay loam, grayish brown (10YR 5/2) dry; weak very fine granular structure; friable; many very fine roots; moderately acid; abrupt smooth boundary.

Bt1—8 to 14 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; abrupt wavy boundary.

2Bt2—14 to 23 inches; olive brown (2.5Y 4/4) silty clay; moderate fine and medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common very fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; 5 percent mixed rock fragments; neutral; clear wavy boundary.

2Bt3—23 to 33 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine and medium prismatic structure; firm; common very fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; 8 percent mixed rock fragments; strongly effervescent; slightly alkaline; gradual wavy boundary.

2Btk—33 to 43 inches; olive brown (2.5Y 4/4) silty clay loam; weak coarse prismatic structure; very firm; few very fine roots; many distinct light olive gray (5Y 6/2) (dry) silt coatings on faces of peds and many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine irregular light olive gray (5Y 6/2) carbonate accumulations with diffuse boundaries in the matrix; 8 percent mixed rock fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

2Cd—43 to 80 inches; olive brown (2.5Y 4/4) silty clay loam; massive; very firm; common fine distinct grayish brown (2.5Y 5/2) iron depletions with diffuse boundaries throughout; 8 percent mixed rock fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 16 inches
Depth to the base of soil development: 24 to 60 inches
Depth to carbonates: 23 to 42 inches
Thickness of the loess: Less than 18 inches

Ap, A, or AB horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silty clay loam
Content of rock fragments—0 to 5 percent by volume

Bt, 2Btk, or 2Bt horizon(s):
Hue—10YR or 2.5Y; 5Y in the lower part
Value—4 to 6
Chroma—3 or 4 in the upper part; 1 to 4 in the lower part
Texture—silty clay loam or silty clay; less commonly clay
Content of rock fragments—0 to 10 percent by volume

BC, 2BC, Cd, or 2Cd horizon(s):
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or clay loam
Content of rock fragments—0 to 10 percent by volume

223B2—Varna silty clay loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Varna and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have less sand within a depth of 18 inches
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that have a thicker dark surface soil
- Soils that have less clay and less sand in the upper part of the subsoil

Properties and Qualities of the Varna Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 7.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

223C2—Varna silty clay loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Varna and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have less sand within a depth of 18 inches
- Soils that have a thicker dark surface soil
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that have less clay and less sand in the upper part of the subsoil

Properties and Qualities of the Varna Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

223D—Varna silty clay loam, 10 to 15 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Varna and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay in the subsoil
- Soils that have less sand within a depth of 18 inches
- Soils that have a thinner dark surface soil

Dissimilar soils:
- The moderately well drained Catlin soils in the less sloping positions

Properties and Qualities of the Varna Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow

Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 8.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Warsaw Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Warsaw loam, 2 to 5 percent slopes, at an elevation of 480 feet; Tazewell County, Illinois; 624 feet south and 2,250 feet east of the northwest corner of sec. 20, T. 23 N., R. 5 W.; USGS South Pekin, Illinois, topographic quadrangle; lat. 40 degrees 26 minutes 3.2 seconds N. and long. 89 degrees 41 minutes 32.3 seconds W.; UTM Zone 16, 271634 easting, 4479435 northing; NAD 83:

Ap—0 to 7 inches; very dark brown (10YR 2/2) loam, pale brown (10YR 5/3) dry; weak fine and medium granular structure; common very fine roots; moderately acid; clear smooth boundary.
A—7 to 17 inches; very dark brown (10YR 2/2) loam, pale brown (10YR 5/3) dry; weak medium granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.
Bt1—17 to 24 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure parting to moderate medium granular; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds and many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—24 to 29 inches; dark yellowish brown (10YR 4/4) loam; weak fine and medium subangular blocky structure; firm; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt3—29 to 33 inches; dark yellowish brown (10YR 4/4) loam; weak fine subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
2C—33 to 60 inches; yellowish brown (10YR 5/6), stratified gravelly loamy sand to gravelly sand; single grain; loose; few very fine roots; 30 percent mixed rock fragments; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of soil development: 24 to 40 inches

Ap and A horizons:
Hue—7.5YR or 10YR

Value—2 to 3
Chroma—1 to 3
Texture—loam
Content of rock fragments—0 to 10 percent by volume

BA horizon(s) (where present):
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 to 4
Texture—loam, silt loam, or sandy loam
Content of rock fragments—0 to 10 percent by volume

Bt horizon(s):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—loam or clay loam
Content of rock fragments—0 to 14 percent by volume

2Bt horizon(s) (where present):
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 to 4
Texture—gravelly clay loam or gravelly sandy clay loam
Content of rock fragments—15 to 25 percent by volume

2C horizon(s):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—2 to 6
Texture—stratified with the gravelly or very gravelly analogs of sand, coarse sand, loamy sand, or loamy coarse sand
Content of rock fragments—15 to 60 percent by volume

290A—Warsaw loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits (fig. 4)

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less gravel in the subsoil

Dissimilar soils:
- The excessively drained Coloma soils in the higher positions
- The poorly drained Selma soils in swales

Properties and Qualities of the Warsaw Soil

Parent material: Loamy sediments over calcareous sandy and gravelly deposits
Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: 24 to 40 inches to strongly contrasting textural stratification
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

W—Water

- This map unit consists of rivers, streams, lakes, reservoirs, and ponds. These areas are covered with water in most years, at least during the period that is warm enough for the growth of plants. Many areas are covered throughout the year.

Waupecan Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Waupecan silt loam, 0 to 2 percent slopes, at an elevation of 880 feet; Kane County, Illinois; 225 feet south and 1,455 feet west of the northeast corner of sec. 21, T. 42 N., R. 6 E.; USGS Hampshire, Illinois, topographic quadrangle; lat. 42 degrees 06 minutes 34 seconds N. and long. 88 degrees 32 minutes 08 seconds W.; UTM Zone 16, 373038 easting, 4663072 northing; NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.
A—8 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.
BA—13 to 19 inches; brown (10YR 4/3) silt loam; weak very fine subangular blocky structure; firm; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on surfaces along pores; slightly acid; clear smooth boundary.
Bt1—19 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—28 to 38 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; abrupt smooth boundary.

2Bt3—38 to 44 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; 1 percent dolomitic pebbles; moderately acid; clear smooth boundary.
2Bt4—44 to 49 inches; brown (7.5YR 4/4) sandy clay loam; weak coarse subangular blocky structure; friable; few very fine roots; many distinct dark brown (7.5YR 3/4) clay bridges between sand grains; 2 percent dolomitic pebbles; slightly acid; clear smooth boundary.
2Bt5—49 to 55 inches; brown (7.5YR 4/4) sandy loam; weak coarse subangular blocky structure; friable; many distinct dark brown (7.5YR 3/3) clay bridges between sand grains; 8 percent dolomitic pebbles; neutral; abrupt smooth boundary.
3C—55 to 70 inches; brown (10YR 5/3) gravelly sand; single grain; loose; 32 percent dolomitic pebbles and cobblestones; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of soil development: 40 to 72 inches
Thickness of the loess: 24 to 48 inches
Depth to zone containing more than 15 percent rock fragments: 40 to 60 inches
Other features: Some pedons have an AB horizon.

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

Bt or BA horizon(s):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt, 2BC, or 2C horizon(s):
Hue—5YR, 7.5YR, or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—clay loam, loam, sandy clay loam, sandy loam, or loamy sand; stratified in some pedons
Content of rock fragments—1 to 15 percent by volume

3C horizon(s):
Hue—5YR, 7.5YR, or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—very gravelly sandy loam to gravelly sand
Content of rock fragments—15 to 60 percent by volume

369A—Waupecan silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more than 15 percent rock fragments at a depth of less than 40 inches

Dissimilar soils:
- The somewhat poorly drained Elburn soils in the lower positions
- The poorly drained Drummer soils in swales

Properties and Qualities of the Waupecan Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

369B—Waupecan silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Shoulders and footslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more than 15 percent rock fragments at a depth of less than 40 inches
- Soils that have a thinner dark surface soil

Dissimilar soils:
- The somewhat poorly drained Elburn soils in the lower positions

Properties and Qualities of the Waupecan Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Wenona Series

Taxonomic classification: Fine, smectitic, mesic Oxyaquic Argiudolls
Taxadjunct features: The Wenona soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine, smectitic, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Wenona silt loam, 2 to 5 percent slopes, at an elevation of 718 feet; La Salle County, Illinois; 324 feet east and 216 feet north of the southwest corner of sec. 8, T. 29 N., R. 2 E.; USGS Minonk, Illinois, topographic quadrangle; lat. 40 degrees 59 minutes 7 seconds N. and long. 89 degrees 1 minute 35 seconds W.; UTM Zone 16, 329543 easting, 4539089 northing; NAD 83:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.
A—9 to 14 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine and medium granular structure; friable; many fine and very fine roots; moderately acid; clear smooth boundary.
Bt1—14 to 20 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—20 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt3—26 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine

roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct black (10YR 2/1) manganese nodules throughout; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt4—31 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; common distinct brown (10YR 4/3) clay films on faces of peds; few very fine roots; few fine distinct black (10YR 2/1) manganese nodules throughout; common fine and medium faint brown (10YR 5/3) masses of oxidized iron-manganese in the matrix; common fine and medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

2BCt—37 to 50 inches; olive (5Y 5/3) silty clay; weak medium prismatic structure parting to weak coarse subangular blocky; very firm; few fine roots; few distinct olive gray (5Y 5/2) clay films on vertical faces of peds; common fine distinct yellowish brown (10YR 5/4) and common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; about 5 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Cd—50 to 60 inches; olive gray (5Y 5/2) silty clay; massive; very firm; common fine and medium distinct light olive brown (2.5Y 5/4) and few fine prominent yellowish brown (10YR 5/6 and 5/8) masses of oxidized iron in the matrix; about 5 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic layer: 6 to 9 inches
Depth to the base of soil development: 40 to 55 inches
Thickness of the loess: 35 to 55 inches

Ap or A horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt horizon(s):
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silty clay

2Bt, 2BCt, 2BC, or 2Bk horizon(s):
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay or clay
Content of rock fragments—0 to 5 percent by volume

2Cd horizon(s):
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay or clay
Content of rock fragments—0 to 10 percent by volume

388B2—Wenona silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits, backslopes, and footslopes (fig. 8)

Map Unit Composition

Wenona and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand within a depth of 35 inches
- Soils that have less sand in the lower part of the subsoil
- Soils that have a seasonal high water table at a depth of more than 3.5 feet
- Soils that have a seasonal high water table at a depth of less than 2 feet

Dissimilar soils:
- The poorly drained Streator soils on toeslopes

Properties and Qualities of the Wenona Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 40 to 65 inches to dense material
Available water capacity: About 9.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

388C2—Wenona silty clay loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

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

Soils of Minor Extent

Similar soils:
- Soils that have more sand within a depth of 35 inches
- Soils that have a seasonal high water table at a depth of less than 2 feet
- Soils that have a thinner dark surface layer

Dissimilar soils:
- The poorly drained Streator soils on toeslopes

Properties and Qualities of the Wenona Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 40 to 65 inches to dense material
Available water capacity: About 10 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: High
Perched seasonal high water table: 2.0 to 3.5 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Wyanet Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls
Taxadjunct features: The Wyanet soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy, mixed, active, mesic Mollic Hapludalfs.

Typical Pedon

Wyanet silt loam, 5 to 10 percent slopes, eroded, at an elevation of about 704 feet; Bureau County, Illinois; 276 feet south and 2,146 feet east of the northwest corner of sec. 11, T. 16 N., R. 7 E.; USGS Manlius, Illinois, topographic quadrangle; lat. 41 degrees 23 minutes 36 seconds N. and long. 89 degrees 39 minutes 27 seconds W.; UTM Zone 16, 277816 easting, 4585835 northing; NAD 83:

Ap—0 to 8 inches; mixed very dark grayish brown (10YR 3/2) and dark yellowish brown (10YR 4/4) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

2Bt1—8 to 16 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common fine roots; many distinct brown (10YR 4/3) clay films and few distinct dark brown (10YR 3/3) organic coatings on faces of peds; 1 percent gravel; slightly acid; clear smooth boundary.

2Bt2—16 to 26 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common fine roots; many faint brown (7.5YR 4/4) clay films on faces of peds; 1 percent gravel; neutral; clear smooth boundary.
2Bt3—26 to 34 inches; brown (7.5YR 5/4) loam; weak medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 4/4) clay films on faces of peds; 1 percent gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.
2C—34 to 60 inches; brown (7.5YR 5/4) loam; massive; friable; few fine roots; 1 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic layer: 7 to 9 inches
Thickness of the loess: 0 to 18 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 24 to 40 inches

Ap horizon(s):
Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam
Content of rock fragments—0 to 4 percent by volume

Bt or 2Bt horizon(s):
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—4 to 6
Texture—loam, silty clay loam, or clay loam
Content of rock fragments—0 to 10 percent by volume

BC or 2BC horizon and C or 2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—3 or 4
Texture—loam
Content of rock fragments—0 to 10 percent by volume

622B2—Wyanet silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Wyanet and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have less sand within a depth of 18 inches and have a seasonal high water table at a depth of less than 6 feet
- Soils that have less sand throughout and have a seasonal high water table at a depth of less than 6 feet
- Soils that have a thicker dark surface soil

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Wyanet Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

622C2—Wyanet silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Wyanet and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have less sand within a depth of 18 inches and have a seasonal high water table at a depth of less than 6 feet
- Soils that have a seasonal high water table at a depth of less than 6 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Wyanet Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate

Seasonal high water table: More than 6 feet below the surface
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Use and Management of the Soils

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

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

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and 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, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

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

Interpretive Ratings

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

Rating Class Terms

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

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

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

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

In 2002, a total of 283,467 acres in Woodford County was cropland (USDA, 2002). The major row crops are corn and soybeans. Wheat is the major small grain crop grown. The soils in Woodford County have good potential for continued crop production, especially if the latest crop production technology is applied.

Limitations Affecting Cropland and Pastureland

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6.

Cropland

The main concerns affecting the management of cropland in Woodford County include crusting, high pH, ponding, poor tilth, water erosion, and wetness. Other concerns include excess lime, excessive permeability, flooding, limited available water capacity, and wind erosion.

Crusting occurs when flowing water or raindrops break down soil structural units, moving clay downward and leaving a concentration of sand and silt particles on the soil surface. Crusts can reduce water infiltration, increase runoff, inhibit seedling emergence and proper growth, and reduce oxygen diffusion to seedlings. Practices that help to minimize surface crusting and improve tilth are those that protect the surface from the impact of raindrops and from flowing water. Incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage help to prevent crusting and improve tilth.

High pH refers to a pH of 7.4 or more. This limitation affects the availability of many plant nutrients and influences the effectiveness of herbicides. More frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Crops may respond well to additions of phosphate fertilizer on these soils. The applications of herbicides should be adjusted as the level of alkalinity increases. Incorporating green manure crops, manure, or crop residue into the soil, applying a system of conservation tillage, and using conservation cropping systems also help to overcome this limitation.

Ponding occurs when the seasonal high water table is above the surface of the soil. Land grading helps to control ponding. Surface ditches and surface inlet tile also help to remove excess water if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Poor tilth can occur in soils as a result of erosion, when part of the subsoil is incorporated into the plow layer. The erosion reduces the content of organic matter and increases the clay content in the surface soil. Intensive rainfall often results in the formation of a crust on the surface. Poor tilth also occurs in poorly drained soils that have a high clay content, regardless of organic matter content, and in soils that have been excessively tilled. Poor tilth reduces the rate of water infiltration and increases the runoff rate and the susceptibility to erosion in the more sloping areas. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. Because these soils can be tilled only within a narrow range in moisture content, seedbed preparation is difficult. Minimizing tillage and timing conservation tillage operations to near optimal soil moisture conditions can improve tilth. Regularly returning crop residue to the soil and adding other organic material can also improve tilth.

Water erosion reduces the stability of soil aggregates and thus reduces the rate of water infiltration and increases the rate of surface runoff. Soils with long or steep slopes are particularly susceptible to water erosion. Sheet and rill erosion is a hazard in areas where slopes are long or are subject to concentrated flow. It removes the surface soil, which commonly has the highest amount of biological activity and the highest content of organic matter. As a result, the productivity of the soil is reduced. Poor tilth and crusting can occur when the subsoil, which generally has a higher content of clay than the surface soil, is incorporated through tillage into the plow layer. Excessive runoff reduces the quality of surface water through sedimentation and contamination by agricultural chemicals attached to soil particles in the sediment. Sediment then enters streams, rivers, water impoundments, and road ditches and reduces the quality of surface water. Erosion can be controlled by a conservation tillage system that leaves crop residue on the surface after planting or by a cropping system that rotates grasses and legumes in the cropping sequence. On soils with long, uniform slopes, contour farming and/or terraces in combination with a conservation tillage system can help to control erosion.

Wetness occurs when the seasonal high water table is at or near the surface. Subsurface tile drains can lower the seasonal high water table if suitable outlets are available. In soils that have restricted permeability and a high content of clay, subsurface drainage may not be practical. In areas of these soils, surface ditches may reduce the wetness. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Excess lime occurs in soils that contain a high content of calcium carbonate at or near the surface or in the upper part of the subsoil. This limitation affects the availability of many plant nutrients and influences the effectiveness of herbicides. More frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Crops may respond well to additions of phosphate fertilizer on these soils. The applications of herbicides should be adjusted as the level of alkalinity increases. Incorporating green manure crops, manure, or crop residue into the soil, applying a system of conservation tillage, and using conservation cropping systems also help to overcome this limitation.

Excessive permeability can occur in soils that have a high content of sand in the surface layer and thus have many pores of large diameter. The capacity of these soils to retain moisture for use by plants is restricted. Deep leaching of nutrients and pesticides can occur, and the risk of ground-water pollution is a concern. Irrigation can be used to supply the moisture needed for crops. Frequent applications of a small amount of fertilizer are needed. One large application of fertilizer can result in excessive loss of plant nutrients through leaching.

Flooding occurs in unprotected areas along the major rivers and their tributaries. Levees or diversions reduce the extent of crop damage caused by floodwater. Surface drainage ditches can be used to improve drainage if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting crop varieties adapted to a shorter growing season and wetter conditions can help to minimize the extent of damage caused by flooding.

Limited available water capacity can occur in soils that have a high content of sand, a low content of clay, and a low content of organic matter. Reducing the evaporation and runoff rates and increasing the rate of water infiltration can conserve soil moisture. Measures that conserve soil moisture include applying conservation tillage and conservation cropping systems, establishing field windbreaks, and leaving crop residue on the surface.

Wind erosion can occur when the surface of the soil is not protected. Wind erosion can be controlled by applying a system of conservation tillage that leaves crop residue on the surface after planting, by using tillage systems that leave the surface rough, by establishing field windbreaks, and by regularly adding organic material to the soil.

The following paragraphs provide explanations of the criteria used to determine the limitations or hazards.

Crusting.—The average content of organic matter in the surface layer is 2.5 percent or less, and the content of clay is between 20 and 35 percent.

Excess lime.—The upper limit of the calcium carbonate equivalent is 15 percent or more within a depth of 20 inches.

Excessive permeability.—The lower limit of the permeability rate is more than 6 inches per hour within the soil profile.

Flooding.—The soil is subject to occasional or frequent flooding.

High pH.—The lower limit of pH within a depth of 40 inches is 7.4 or more.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches is less than 6 inches.

Ponding.—The upper limit of the ponding depth is greater than 0 inches.

Poor tilth.—The content of clay in the surface layer is 27 percent or more.

Water erosion.—The Kw factor in the surface layer multiplied by the average slope is 0.8 or more, and the slope is 3 percent or more.

Wetness.—The seasonal high water table is within a depth of 1.5 feet at some time during the growing season in normal years.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Erosion factors (for example, the Kw factor) and wind erodibility groups are described under the heading “Physical Properties.”

Pastureland

The main management concerns affecting pastureland in Woodford County are high pH, low pH, and water erosion. Other concerns include equipment limitations, excess lime, excessive permeability, flooding, frost heave, limited available water capacity, low fertility, ponding, poor tilth, wetness, and wind erosion.

High pH refers to a pH of 7.4 or more. This limitation affects the availability of many nutrients for plant growth. More frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Selecting adapted forage and hay varieties helps to overcome this limitation.

Low pH refers to a pH of 5.5 or less. This limitation can reduce the solubility and availability of nutrients for plant growth. Selecting adapted forage and hay varieties and applying lime according to the results of soil tests can help to overcome this limitation.

Water erosion can occur in overgrazed areas or during pasture establishment and renovation if the surface is not protected against the impact of raindrops. Erosion results in poor tilth, which reduces the rate of water infiltration and increases the runoff rate. Soils with long or steep slopes are particularly susceptible to water erosion. Erosion can be controlled by deferring grazing, which prevents overgrazing and thus also helps to prevent surface compaction and excessive runoff and erosion. Tilling on the contour, using a no-till system of seeding when a seedbed is prepared or the pasture is renovated, and selecting adapted forage and hay varieties also help to control erosion.

Equipment limitations occur in areas that have slopes of more than 18 percent. These limitations can cause rapid wear of equipment. They can also present problems with fertilization, harvest, pasture renovation, and seedbed preparation. They cannot be easily overcome.

Excess lime occurs in soils that contain a high content of calcium carbonate at or near the surface or in the upper part of the subsoil. This limitation affects the availability of many plant nutrients for plant growth. More frequent applications of a small amount of fertilizer are needed to correct nutrient imbalances. Selecting adapted forage and hay varieties helps to overcome this limitation.

Excessive permeability can occur in soils that have a high content of sand and thus have many large pores. The capacity of these soils to retain moisture for plant use is limited. The deep leaching of nutrients and pesticides that can result can increase the risk of ground-water pollution. Irrigation can be used to supply the moisture needed for plant growth. Frequent applications of a small amount of fertilizer are needed. A single large application of fertilizer can result in excessive loss of plant nutrients through leaching.

Flooding occurs in unprotected areas along the major rivers and their tributaries. Surface drainage ditches help to remove floodwater if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting forage and hay varieties adapted to a shorter growing season and wetter conditions can also minimize the damage caused by flooding. Restricted use during wet periods helps to keep the pasture in good condition.

Frost heave occurs when ice lenses or bands develop in the soil and drive an ice wedge between two layers of soil near the surface layer. The ice wedges heave the overlying soil layer upward, snapping the roots. Soils in which the texture is low in sand have small pores that hold water and enable ice lenses to form. Selecting adapted forage and hay varieties can reduce the effects of frost heave. Timely deferment of grazing helps to maintain a vegetative cover on the surface. The vegetative cover insulates the soil and thus reduces the effects of frost heave.

A limited available water capacity can occur in soils that have a high content of sand, a low content of clay, and a low content of organic matter. Reducing the evaporation and runoff rates and increasing the rate of water infiltration can conserve soil moisture. Measures that conserve soil moisture include applying conservation tillage and conservation cropping systems, establishing field windbreaks, and leaving crop residue on the surface.

Low fertility occurs in soils that have a low content of organic matter and a low cation-exchange capacity. The capacity of the soil to retain nutrients for plant use is limited. Frequent applications of small amounts of fertilizer help to prevent excessive loss of plant nutrients through leaching. Using legumes as part of a seeding mixture can provide nitrogen to the grass varieties. Timely deferment of grazing helps to maintain a cover of vegetation on the surface and thus helps to maintain the content of organic matter. Organic matter is a source of nutrients in the soil.

Ponding occurs when the seasonal high water table is above the surface of the soil. Land grading helps to control ponding. Surface ditches and surface inlet tile can also be used to remove excess water if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting forage and hay varieties adapted to wet conditions can improve forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Poor tilth can occur in soils as a result of erosion, when part of the subsoil is incorporated into the plow layer. The erosion reduces the content of organic matter and increases the clay content in the surface soil. Intensive rainfall often results in the formation of a crust on the surface. Poor tilth also occurs in poorly drained soils that have a high clay content, regardless of organic matter content, and in soils that have been excessively tilled. Poor tilth reduces the rate of water infiltration and increases the runoff rate and the susceptibility to erosion on the more sloping soils. Soils with poor tilth generally have a surface layer that is sticky when wet and hard and cloddy when dry. Because these soils can be tilled only within a narrow range in moisture content, seedbed preparation is difficult. Minimizing tillage and timing conservation tillage operations to near optimal soil moisture conditions during pasture establishment or pasture renovation can improve tilth.

Wetness occurs when the seasonal high water table is at or near the surface. Subsurface tile drains can lower the seasonal high water table if suitable outlets are available. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning. Selecting forage and hay varieties adapted to wet conditions can improve forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Wind erosion can occur in overgrazed areas or during pasture establishment and renovation if the surface is not protected. Wind erosion can be controlled by applying a system of conservation tillage that leaves residue on the surface after planting, by using tillage systems that leave the surface rough, by establishing field windbreaks, and by regularly adding organic material to the soil.

The following paragraphs provide explanations of the criteria used to determine the limitations or hazards.

Equipment limitation.—The lower limit of the slope range is more than 18 percent.

Excess lime.—The upper limit of the calcium carbonate equivalent is 15 percent or more within a depth of 20 inches.

Excessive permeability.—The lower limit of the permeability rate is more than 6 inches per hour within the soil profile.

Flooding.—The soil is subject to occasional or frequent flooding.

Frost heave.—The potential for frost action is moderate or high, and the soil is poorly drained or very poorly drained.

High pH.—The lower limit of pH within a depth of 40 inches is 7.4 or more.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches is less than 6 inches.

Low fertility.—The average content of organic matter in the surface layer is less than 1 percent, or the average cation-exchange capacity (CEC) is less than 7.

Low pH.—The lower limit of pH within a depth of 40 inches is 5.5 or less.

Ponding.—The upper limit of the ponding depth is greater than 0 inches.

Poor tilth.—The content of clay in the surface layer is 27 percent or more.

Water erosion.—The Kw factor in the surface layer multiplied by the average slope is more than 1.0, and the slope is 3 percent or more.

Wetness.—The seasonal high water table is within a depth of 1.5 feet.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Erosion factors (for example, the Kw factor) and wind erodibility groups are described under the heading “Physical Properties.”

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 7. 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 (Olson and Lang, 2000; Olson and others, 2000). 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.

Yields for grass-legume pasture under an average level of management also are shown in table 7. Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and pasture renovation also are important management practices.

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

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or 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).

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, or wildlife habitat.

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

The capability classification of the soils in this survey area is given in the section "Soil Series and Detailed Soil Map Units" and in the yields table.

Prime Farmland

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

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

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

About 274,376 acres in the survey area, or about 79 percent of the total acreage, meets the soil requirements for prime farmland.

The map units in the survey area that are considered prime farmland are listed in table 8. 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 5. The location is shown on the detailed soil maps. Some of the soil qualities that affect use and management are described under the heading “Soil Series and Detailed Soil Map Units.”

Hydric Soils

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

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2006) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and Vasilas, 2006).

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

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 lists the map units that include hydric soils, either as major components or as inclusions. The hydric soils listed in the table meet the definition of a hydric soil and have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

Forestland Management and Productivity

When the survey area was first settled, forestland covered approximately 93,300 acres, or about 27 percent of the total acreage (Bretthauer and Edgington, 2002). The county consisted of mixed forest and prairie, and prairie vegetation was the predominant native vegetation. The county is within the “Grand Prairie Natural Division of Illinois” (Schwegman, 1984). As the population of the county increased, the forestland in areas that were suitable for cultivation eventually was cleared for farming. Today, forestland makes up approximately 9 percent of the total acreage, or about 30,699 acres (Illinois Department of Agriculture, 2001).

Woodford County currently ranks 60th among the counties in Illinois in percent of land covered by forestland and 56th in total acreage of forestland. It ranks 61st in percent of land covered by bottom-land forest and 65th in total acreage of bottom-land forest (Illinois Department of Natural Resources, 1996).

The majority of the forestland in Woodford County is in relatively small, privately owned woodlots in areas of soils that generally are not suited to cultivation because of wetness, droughtiness, or slope. The forestland is mainly in sloping areas along the Mackinaw River, on the bluffs along the Illinois River, on the narrower flood plains, and in strips along creeks. The soils in these areas have good potential for production of high-quality trees (fig. 9).

Figure 9.—Forestland in strongly sloping to very steep areas of Senachwine and Hennepin soils along the Mackinaw River and in nearly level areas of Landes and Ross soils along the Mackinaw River and drainageways. Photo courtesy of Mary Jo Adams.

The bulk of forestland in Woodford County is in areas of Birkbeck, Hennepin, and Senachwine soils. Some forested areas extend into adjoining areas of Morley, Rozetta, Russell, and Strawn soils. Upland tree species are sensitive to differences in soils. Some species are adapted to certain sites but are only marginally adapted or are not adapted at all to other sites. A broad listing of species would include red oak, white oak, hickory, maple, boxelder, and walnut.

The forest sites on the flood plains in the county occur as remnants of original stands and as regeneration areas. Where fields have been abandoned, the sites can be seeded rather readily. Lawson soils are the most common forest-associated soils on these sites, but Ross, Sawmill, and Slacwater soils and certain other soils also occur on these sites. The most common tree species include cottonwood, sycamore, willow, white oak, and hickory.

Much of the forestland can be improved by harvesting mature trees and by removing the nonmerchantable trees that retard the growth of desirable species. Protecting the woodland from fire, excluding livestock from the woodland, and controlling disease and insects increase productivity. Tree planting is needed unless stocking is adequate. Control of competing vegetation is needed if seedlings are planted. Seeding non-sodforming grass or grass-legume mixtures between rows of the planted seedlings helps to control erosion. If erosion is excessive or the slope is more than 10 percent, runoff should be diverted away from haul roads and skid trails. Machinery should be used only when the soil is firm enough to support the weight of the machinery.

Forestland Management

In tables 11a through 11e, 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 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 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/).

Table 11a

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.

Table 11b

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erosion factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erosion factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Table 11c

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.

Table 11d

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.

Table 11e

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.

Forestland Productivity

In table 12, 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/).

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.

Suggested trees to plant are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Recreational Development

Woodford County provides opportunities for many recreational activities (fig. 10), including hunting, fishing and boating, and camping. Nature preserves, fish and wildlife areas, conservation areas, and private recreational areas also are available for outdoor activities.

In tables 13a and 13b, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils

Figure 10.—The Mackinaw River offers numerous opportunities for recreational activities. Photo courtesy of Mary Jo Adams.

are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

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

The information in these tables can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

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

Michael Wefer, wildlife biologist, Illinois Department of Natural Resources, helped prepare this section.

The kinds and abundance of wildlife in Woodford County reflect the soil types, land use, and vegetation. About 70 percent of the soils in the county developed under native plant communities dominated by tall prairie grasses. Wildlife that was formerly abundant in this prairie habitat included prairie chickens, upland sandpipers, and other grassland birds and mammals. The native woodland habitat originally covered about 27 percent of the county (Bretthauer and Edgington, 2002). After the county was settled, drainage systems were installed in the prairie areas, trees were cleared, and the acreage of cultivated crops increased rapidly. These changes altered the wildlife communities, favoring the more adaptable species and those more tolerant of human settlements, such as horned lark, northern cardinal, mourning dove, raccoon, coyote, eastern wild turkey, and white-tailed deer.

Areas used as wildlife habitat are not necessarily set aside for this purpose. Many of the nearly level to strongly sloping soils used for crops and pasture in Woodford County generally are well suited to habitat for openland wildlife species, such as rabbits, pheasant, bobwhite quail, red fox, and eastern meadowlark. Habitat for woodland wildlife generally is in areas of soils that are too steep for cultivation, in small dissected areas along streams, and in areas of soils that are not suitable for farming because of droughtiness or poor drainage. Habitat for wetland wildlife consists of open, marshy areas of shallow water.

Good management can improve the habitat for wildlife. Deferring the mowing of grassed waterways, roadsides, and fence rows until early August, after the nesting season, can significantly increase the annual production of songbirds, quail, rabbits, and other wildlife species that nest on the ground. Measures that exclude livestock from woodland, wetland, and streambanks can markedly improve wildlife habitat.

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

In table 14, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

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

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

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

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

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

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Examples are oak, wild black cherry, cottonwood, apple, hawthorn, hickory, blackberry, elderberry, maples, and willow. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are American plum, hazelnut, dogwood, and arrowwood. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness.

Coniferous plants are cone-bearing trees, shrubs, or ground cover that provides habitat or supplies food in the form of browse, seed, or fruit-like cones. Examples are pine, spruce, cedar, juniper, and fir. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Eastern redcedar is the only conifer native to the survey area.

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

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

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

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include ring-necked pheasant, bobwhite quail, eastern meadowlark, field sparrow, cottontail rabbit, coyote, thirteen-lined ground squirrel, badger, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, thrushes, woodpeckers, owls, tree squirrels, raccoon, woodcock, and white-tailed deer.

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

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of sand, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 15a and 15b 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 16a and 16b 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 17a and 17b give information about the soils as potential sources of sand, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand occurs as natural aggregates suitable for commercial use with a minimum of processing. It is used in many kinds of construction. Specifications for each use vary widely. In table 17a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand 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, the soil is considered a likely source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 17b, the soils are rated as *good, fair,* or *poor* sources of roadfill and topsoil. The features that limit the soils as sources of roadfill and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of roadfill and topsoil. The lower the number, the greater the limitation.

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

Tables 18a, 18b, and 18c give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways and surface drains; terraces and diversions; tile drains and underground outlets; and sprinkler irrigation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Table 18a

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, stability of excavated walls, 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.

Table 18b

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

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

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to undisturbed soils that commonly have a seasonal high water table within a depth of about 3.0 feet. Current land use is not considered in the ratings. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains. Limitations affecting areas where the tile line passes through soils in which the water table is generally below a depth of 3.0 feet are provided in the table that includes the column “shallow excavations,” which is described under the heading “Building Site Development.”

Table 18c

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The table shows ratings for *sprinkler irrigation*, in which water is sprayed over the soil surface through pipes or nozzles from a pressure system.

The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, ponding, available water capacity, intake rate, permeability, erosion hazard, texture of the surface layer, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 19 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

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

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 11). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

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

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

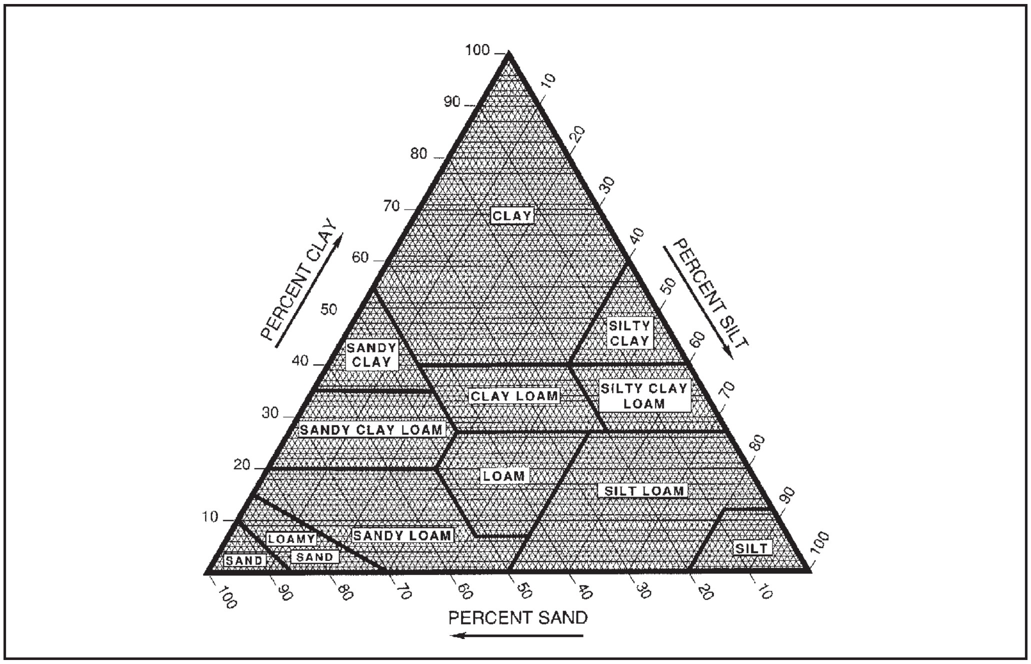


Figure 11.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

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

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

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

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

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 20 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

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

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

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

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 20, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

Erosion factors are shown in table 20 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

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

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

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

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (http://soils.usda.gov/technical/).

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

Chemical Properties

Table 21 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

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

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

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

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Water Features

Table 22 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

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

The four hydrologic soil groups are:

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

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

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

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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

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 22 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* of flooding 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). *Common* is used when the occasional and frequent classes are grouped for certain purposes.

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.

Water table refers to a saturated zone in the soil. Table 22 indicates the depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone for the specified *months* 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.

The table also shows the *kind of water table*, that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Soil Features

Table 23 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 abrupt textural change, bedrock, cemented layers, dense layers, frozen layers, natric horizons, and strongly contrasting textural stratification. 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.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

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.

Basal till. Compact 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 (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed; the adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

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.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Calcium carbonate. A common mineral in sediments and soils.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence of soils across a landscape that are about the same age and formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. See Terracettes.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

Codominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. See Redoximorphic features.

Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

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.

Depression. Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.

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.

Diamicton (geology). A general term for a till-like mixture of unsorted, unstratified rock debris composed of a wide range of particle sizes; use of this term carries no suggestion about how such debris was formed or deposited.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

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.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill. See Mine spoil.

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.

End moraine. A ridgelike accumulation that is being or was produced at the outer margin of an actively flowing glacier at any given time.

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 deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

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.

Equality Formation (geology). Consists of gray to red silt and clay, generally shows evidence of bedding structures, and occurs above the Sangamon Geosol. Predominantly occurs as a fine grained lacustrine sediment. Dates from 26,000 radiocarbon years to present. See Mason Group.

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 surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Esker. A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

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.

Geomorphology. The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

Geosol. A buried soil that formed on a landscape in the past with distinctive morphological features resulting from a soil-forming environment that no longer exists at the site. The former pedogenic process was interrupted by burial. A geosol is a laterally traceable, mappable, geologic weathering profile that has a consistent stratigraphic position. (See Paleosol.)

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded 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 moraine. An extensive, fairly even layer of till having an uneven or undulating surface.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Henry Formation (geology). Consists of stratified sand and gravel that occur above the Sangamon Geosol. See Mason Group.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties 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 that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. See Redoximorphic features.

Kame. A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Krotovinas. Irregular, tubular streaks in a soil horizon that are created when tunnels made by a burrowing animal are filled with material from another horizon.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin (commonly less than 1 centimeter thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

Landscape. A collection of related natural landforms; usually the land surface which the eye can comprehend in a single view.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Mason Group (geology). The Mason Group comprises two proglacial and one postglacial sorted sediment formations that represent distinct stratigraphic layers based on grain size and bedding characteristics. The proglacial units are Peoria Silt and the Henry Formation. The postglacial unit is the Equality Formation.

Masses. See Redoximorphic features.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

MLRA (major land resource area). A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural 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. In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

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.

Morton Tongue (geology). The lower part or tongue of Peoria Silt. It is massive, gray to gray-tan, calcareous silt. It ranges to 10 feet in thickness and is characteristically identified in areas below materials of the Wedron Group. Deposition occurred 25,000 to 20,000 radiocarbon years ago. See also Richland loess and Peoria Silt.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

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. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

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. Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleosol. A general term used to describe a soil that formed on a landscape of the past; it may be a buried soil, a relict soil, or an exhumed soil. (See Geosol.)

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

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.

Peoria Silt (geology). Light yellow tan to gray, calcareous silt that grades from sandy silt in the bluffs to clayey silt away from the bluffs. The upper part of Peoria Silt is also informally known as Richland loess where it overlies the Wedron Group. The lower part, where buried by materials of the Wedron Group, is known as the Morton Tongue. It covers most of Illinois and ranges in thickness from 80 feet in bluff areas along the Mississippi River to 1 to 2 feet as it thins away from bluff areas. Deposition occurred 25,000 to 12,000 radiocarbon years ago. See Mason Group.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permafrost. Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

Permeability. 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

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
   - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
   - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Richland loess (geology). An informal classification for the upper tongue of Peoria Silt that overlies the Wedron Group and the Henry and Equality Formations of the Mason Group. It is massive, tan silt that is calcareous below the leach zone. The surface of modern soils in upland areas of the Wisconsinan till plain is the upper boundary of this unit. It ranges in thickness from 20 feet in bluff areas along the Illinois River to 1 or 2 feet as it thins away from bluff areas. Deposition occurred 20,000 to 12,000 radiocarbon years ago. See also Morton Tongue and Peoria Silt.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Rise. A slight increase in slope and elevation of the land surface, typically with a broad summit and gently sloping sides.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Roxana Silt (geology). Brownish red and gray silt loam. Typically leached of carbonates. It overlies the Sangamon Geosol and is typically bounded above by Peoria Silt. It can be distinguished from Peoria Silt as being darker brown and more clayey. Deposition occurred 75,000 to 27,000 radiocarbon years ago. See Mason Group.

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.

Sangamonian (geology). In Illinois, represents an interglacial age between the Illinois and Wisconsin Episodes during the Pleistocene. See Geosol.

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.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

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. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside, bounding a drainageway and lying between the drainageway and the adjacent interfluve. 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. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

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 outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth’s surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single 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.

Swale. A shallow, open depression in unconsolidated materials that lacks a defined channel but can funnel overland or subsurface flow into a drainageway. A small, shallow, typically closed depression in an undulating ground moraine formed by uneven glacial deposition.

Talf. A geomorphic component of flat plains consisting of an essentially flat and broad area dominated by closed depressions and a nonintegrated or poorly integrated drainage system. Precipitation tends to pond locally, and lateral transport is slow both above and below ground. These conditions favor the accumulation of soil organic matter and a retention of fine earth sediments; better drained soils are commonly adjacent to drainageways.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family or higher taxonomic category of the series for which the soils are named.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Valley-side alluvium. A concave “slope wash” deposit at the base of a hillslope that may or may not include the alluvial toeslope.

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 disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Wedron Group (geology). Mostly diamicton of the Wisconsin Age.

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 Minonk, Illinois)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	30.2	12.8	21.5	57	-18	0	1.81	0.82	2.74	4	8.9
February---	36.1	18.5	27.3	66	-13	2	1.97	.82	3.10	4	6.3
March------	48.3	28.6	38.5	79	5	31	3.20	1.48	4.62	6	3.5
April------	61.9	38.3	50.1	86	18	120	3.60	2.02	5.14	7	.9
May--------	73.6	48.9	61.2	92	30	360	4.24	2.18	6.29	7	.0
June-------	83.4	58.8	71.1	97	42	633	3.69	1.88	5.37	6	.0
July-------	86.3	62.6	74.5	99	47	759	3.77	1.91	5.62	6	.0
August-----	84.2	60.2	72.2	97	44	681	3.36	1.30	5.04	6	.0
September--	78.3	52.2	65.3	95	32	462	3.31	1.42	4.65	5	.0
October----	65.8	40.9	53.3	87	22	177	2.85	1.44	3.96	5	.1
November---	48.9	30.3	39.6	75	8	30	3.35	1.38	5.29	6	1.6
December---	35.3	18.7	27.0	63	-11	3	2.49	1.20	3.57	5	6.8
Yearly:											
Average---	61.0	39.2	50.1	---	---	---	---	---	---	---	---
Extreme---	103	-25	---	103	-20	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,257	37.63	29.74	42.65	67	28.1

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Minonk, Illinois)

Probability	Temperature: 24 °F or lower	Temperature: 28 °F or lower	Temperature: 32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 15	Apr. 27	May 13
2 years in 10 later than--	Apr. 11	Apr. 22	May 7
5 years in 10 later than--	Apr. 2	Apr. 13	Apr. 25
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 16	Oct. 4	Sept. 25
2 years in 10 earlier than--	Oct. 22	Oct. 10	Sept. 30
5 years in 10 earlier than--	Nov. 1	Oct. 22	Oct. 9

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Minonk, Illinois)

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	192	168	142
8 years in 10	199	176	150
5 years in 10	212	191	165
2 years in 10	225	206	180
1 year in 10	232	214	188

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Alvin	Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs
Arrowsmith	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Atterberry	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Beaucoup	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
Birkbeck	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Blackberry	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Buckhart	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Calco	Fine-silty, mixed, superactive, calcareous, mesic Cumulic Endoaquolls
Camden	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Catlin	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Catlin	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Chatsworth	Fine, illitic, mesic Oxyaquic Eutrudepts
Chenoa	Fine, illitic, mesic Aquic Argiudolls
*Chenoa	Fine, illitic, mesic Aquollic Hapludalfs
Clare	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Colo	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Coloma	Mixed, mesic Lamellic Udipsamments
Dakota	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
Drummer	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Elburn	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
*Elkhart	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Elpaso	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Flanagan	Fine, smectitic, mesic Aquic Argiudolls
Fox	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs
*Graymont	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Harpster	Fine-silty, mixed, superactive, mesic Typic Calciaquolls
Hennepin	Fine-loamy, mixed, active, mesic Typic Eutrudepts
Huntsville	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Ipava	Fine, smectitic, mesic Aquic Argiudolls
Jasper	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Jasper	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
La Rose	Fine-loamy, mixed, active, mesic Typic Argiudolls
*La Rose	Fine-loamy, mixed, active, mesic Mollic Hapludalfs
Landes	Coarse-loamy, mixed, superactive, mesic Fluventic Hapludolls
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Lena	Euic, mesic Typic Haplosaprists
Martinsville	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Miami	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Morley	Fine, illitic, mesic Oxyaquic Hapludalfs
Newvienna	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Ockley	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Orthents	Loamy, mesic Udorthents
Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Palms	Loamy, mixed, euic, mesic Terric Haplosaprists
Peotone	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Plano	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Proctor	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Radford	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Raveenwash	Coarse-loamy, mixed, superactive, calcareous, mesic Aquic Udifluvents
Ross	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
*Rozetta	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Russell	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Rutland	Fine, smectitic, mesic Aquic Argiudolls
*Rutland	Fine, smectitic, mesic Aquollic Hapludalfs
Sabina	Fine, smectitic, mesic Aeric Epiaqualfs
Sable	Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Sarpy	Mixed, mesic Typic Udipsamments
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Saybrook	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Saybrook	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Selma	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Senachwine	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Slacwater	Fine-silty, mixed, superactive, calcareous, mesic Mollic Fluvaquents
Spaulding	Fine-silty, mixed, superactive, mesic Typic Calciaquolls
St. Charles	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Strawn	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Streator	Fine, smectitic, mesic Vertic Endoaquolls
Swygert	Fine, mixed, active, mesic Aquic Argiudolls
*Swygert	Fine, mixed, active, mesic Aquollic Hapludalfs
*Varna	Fine, illitic, mesic Mollic Oxyaquic Hapludalfs
*Varna	Fine, illitic, mesic Typic Argiudolls
Warsaw	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
Waupecan	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Wenona	Fine, smectitic, mesic Mollic Oxyaquic Hapludalfs
*Wyanet	Fine-loamy, mixed, active, mesic Mollic Hapludalfs

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
17A	Keomah silt loam, 0 to 2 percent slopes	6,241	1.8
17B2	Keomah silt loam, 2 to 5 percent slopes, eroded	4,013	1.2
25G	Hennepin loam, 35 to 70 percent slopes	47	*
27C2	Miami silt loam, 5 to 10 percent slopes, eroded	102	*
27D2	Miami silt loam, 10 to 18 percent slopes, eroded	155	*
43A	Ipava silt loam, 0 to 2 percent slopes	31,133	9.0
43B	Ipava silt loam, 2 to 5 percent slopes	5,311	1.5
60C2	La Rose silt loam, 5 to 10 percent slopes, eroded	423	0.1
60C3	La Rose silty clay loam, 5 to 10 percent slopes, severely eroded	43	*
61A	Atterberry silt loam, 0 to 2 percent slopes	1,591	0.5
67A	Harpster silty clay loam, 0 to 2 percent slopes	39	*
68A	Sable silty clay loam, 0 to 2 percent slopes	29,177	8.4
86B	Osco silt loam, 2 to 5 percent slopes	15	*
91A	Swygert silty clay loam, 0 to 2 percent slopes	1,689	0.5
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded	2,133	0.6
125A	Selma loam, 0 to 2 percent slopes	171	*
131A	Alvin loamy sand, 0 to 2 percent slopes	314	*
131B	Alvin sandy loam, 2 to 5 percent slopes	412	0.1
131C	Alvin sandy loam, 5 to 10 percent slopes	27	*
131D	Alvin sandy loam, 10 to 18 percent slopes	321	*
131F	Alvin sandy loam, 18 to 35 percent slopes	278	*
134A	Camden silt loam, 0 to 2 percent slopes	376	0.1
134B	Camden silt loam, 2 to 5 percent slopes	405	0.1
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	258	*
145B	Saybrook silt loam, 2 to 5 percent slopes	2	*
145B2	Saybrook silt loam, 2 to 5 percent slopes, eroded	2,821	0.8
145C2	Saybrook silt loam, 5 to 10 percent slopes, eroded	1,851	0.5
148B	Proctor silt loam, 2 to 5 percent slopes	269	*
152A	Drummer silty clay loam, 0 to 2 percent slopes	1,663	0.5
154A	Flanagan silt loam, 0 to 2 percent slopes	29,131	8.4
154B	Flanagan silt loam, 2 to 5 percent slopes	3,781	1.1
171B	Catlin silt loam, 2 to 5 percent slopes	9,275	2.7
171B2	Catlin silt loam, 2 to 5 percent slopes, eroded	54	*
171C2	Catlin silt loam, 5 to 10 percent slopes, eroded	2,002	0.6
194C2	Morley silty clay loam, 5 to 10 percent slopes, eroded	1,563	0.4
198A	Elburn silt loam, 0 to 2 percent slopes	668	0.2
199A	Plano silt loam, 0 to 2 percent slopes	330	*
199B	Plano silt loam, 2 to 5 percent slopes	110	*
223B2	Varna silty clay loam, 2 to 5 percent slopes, eroded	1,217	0.4
223C2	Varna silty clay loam, 5 to 10 percent slopes, eroded	1,388	0.4
223D	Varna silty clay loam, 10 to 15 percent slopes	186	*
224D2	Strawn silt loam, 10 to 18 percent slopes, eroded	2,066	0.6
233B2	Birkbeck silt loam, 2 to 5 percent slopes, eroded	5,432	1.6
233C2	Birkbeck silt loam, 5 to 10 percent slopes, eroded	6,524	1.9
233D2	Birkbeck silt loam, 10 to 18 percent slopes, eroded	706	0.2
236A	Sabina silt loam, 0 to 2 percent slopes	240	*
241C2	Chatsworth silty clay loam, 4 to 7 percent slopes, eroded	268	*
241C3	Chatsworth silty clay, 4 to 6 percent slopes, severely eroded	5	*
243A	St. Charles silt loam, 0 to 2 percent slopes	282	*
243B	St. Charles silt loam, 2 to 5 percent slopes	342	*
279B2	Rozetta silt loam, 2 to 5 percent slopes, eroded	9,766	2.8
290A	Warsaw loam, 0 to 2 percent slopes	262	*
322C2	Russell silt loam, 5 to 10 percent slopes, eroded	6,270	1.8
322D2	Russell silt loam, 10 to 18 percent slopes, eroded	1,371	0.4
327C2	Fox silty clay loam, 5 to 10 percent slopes, eroded	69	*
330A	Peotone silty clay loam, 0 to 2 percent slopes	1,309	0.4
356A	Elpaso silty clay loam, 0 to 2 percent slopes	32,230	9.3
369A	Waupecan silt loam, 0 to 2 percent slopes	26	*
369B	Waupecan silt loam, 2 to 5 percent slopes	45	*
375A	Rutland silty clay loam, 0 to 2 percent slopes	8,232	2.4
375B	Rutland silty clay loam, 2 to 5 percent slopes	99	*
375B2	Rutland silty clay loam, 2 to 5 percent slopes, eroded	765	0.2

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
379A	Dakota loam, 0 to 2 percent slopes	354	0.1
383B	Newvienna silt loam, 2 to 5 percent slopes	1,152	0.3
387A	Ockley loam, 0 to 2 percent slopes	98	*
388B2	Wenona silt loam, 2 to 5 percent slopes, eroded	3,023	0.9
388C2	Wenona silty clay loam, 5 to 10 percent slopes, eroded	253	*
435A	Streator silty clay loam, 0 to 2 percent slopes	16,846	4.8
440A	Jasper silt loam, 0 to 2 percent slopes	858	0.2
440B	Jasper silt loam, 2 to 5 percent slopes	137	*
440C2	Jasper silt loam, 5 to 10 percent slopes, eroded	243	*
533	Urban land	247	*
536	Dumps, mine	35	*
541B2	Graymont silt loam, 2 to 5 percent slopes, eroded	11,396	3.3
541C2	Graymont silt loam, 5 to 10 percent slopes, eroded	2,348	0.7
567B	Elkhart silt loam, 2 to 5 percent slopes	3,999	1.2
570A	Martinsville silt loam, 0 to 2 percent slopes	278	*
570B	Martinsville sandy loam, 2 to 5 percent slopes	385	0.1
570C2	Martinsville loam, 5 to 10 percent slopes, eroded	282	*
614A	Chenoa silty clay loam, 0 to 2 percent slopes	5,809	1.7
614B2	Chenoa silty clay loam, 2 to 5 percent slopes, eroded	2,074	0.6
618C2	Senachwine silt loam, 5 to 10 percent slopes, eroded	1,726	0.5
618D2	Senachwine silt loam, 10 to 18 percent slopes, eroded	3,706	1.1
622B2	Wyanet silt loam, 2 to 5 percent slopes, eroded	34	*
622C2	Wyanet silt loam, 5 to 10 percent slopes, eroded	143	*
663A	Clare silt loam, 0 to 2 percent slopes	23	*
679A	Blackberry silt loam, 0 to 2 percent slopes	97	*
679B	Blackberry silt loam, 2 to 5 percent slopes	141	*
689B	Coloma sand, 1 to 7 percent slopes	808	0.2
689D	Coloma sand, 7 to 15 percent slopes	368	0.1
705B	Buckhart silt loam, 2 to 5 percent slopes	8,873	2.6
712A	Spaulding silty clay loam, 0 to 2 percent slopes	713	0.2
715A	Arrowsmith silt loam, 0 to 2 percent slopes	5,028	1.4
721A	Drummer and Elpaso silty clay loams, 0 to 2 percent slopes	518	0.1
802B	Orthents, loamy, undulating	8	*
802D	Orthents, loamy, rolling	937	0.3
835G	Earthen dam	13	*
865	Pits, gravel	379	0.1
883F	Senachwine-Hennepin loams, 18 to 35 percent slopes	7,440	2.1
883G	Senachwine-Hennepin loams, 35 to 60 percent slopes	12,199	3.5
964F	Miami and Hennepin soils, 18 to 35 percent slopes	89	*
1100A	Palms muck, undrained, 0 to 2 percent slopes	46	*
1210L	Lena muck, undrained, 0 to 2 percent slopes, frequently flooded, long duration	441	0.1
3092L	Sarpy loamy fine sand, 0 to 2 percent slopes, frequently flooded, long duration	455	0.1
3360L	Slacwater silt loam, 0 to 2 percent slopes, frequently flooded, long duration	2,957	0.9
7070A	Beaucoup silty clay loam, 0 to 2 percent slopes, rarely flooded	1,875	0.5
8073A	Ross loam, 0 to 2 percent slopes, occasionally flooded	3,224	0.9
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded	835	0.2
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	1,068	0.3
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	5,904	1.7
8304A	Landes fine sandy loam, 0 to 2 percent slopes, occasionally flooded	1,268	0.4
8368L	Raveenwash silt loam, 0 to 2 percent slopes, occasionally flooded, long duration	1,384	0.4
8400L	Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded, long duration	586	0.2
8402A	Colo silt loam, 0 to 2 percent slopes, occasionally flooded	858	0.2
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	4,998	1.4
MW	Miscellaneous water	132	*
W	Water	11,025	3.2
	Total	347,410	100.0

* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Only the soils that are generally available for use as cropland or pastureland are listed. Dashes indicate that the soil is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
17A:		
Keomah	Wetness, crusting	Wetness, low pH
17B2:		
Keomah	Wetness, crusting, water erosion	Wetness, low pH, water erosion
25G:		
Hennepin	---	---
27C2:		
Miami	High pH, crusting, water erosion	High pH, water erosion
27D2:		
Miami	High pH, crusting, water erosion	High pH, water erosion
43A:		
Ipava	Wetness	Generally not used as pastureland
43B:		
Ipava	Wetness, water erosion	Generally not used as pastureland
60C2:		
La Rose	High pH, crusting, water erosion	High pH, water erosion
60C3:		
La Rose	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion, low fertility
61A:		
Atterberry	Wetness, crusting	Wetness, low pH
67A:		
Harpster	Ponding, poor tilth, excess lime	Generally not used as pastureland
68A:		
Sable	Ponding, poor tilth	Generally not used as pastureland
86B:		
Osco	Water erosion	Generally not used as pastureland
91A:		
Swygert	Wetness, poor tilth, high pH	Generally not used as pastureland
91B2:		
Swygert	Wetness, poor tilth, high pH	Generally not used as pastureland
125A:		
Selma	Ponding	Generally not used as pastureland

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
131A:		
Alvin	Wind erosion, excessive permeability	Low pH, wind erosion, low fertility, excessive permeability
131B:		
Alvin	No major limitations	Low pH, low fertility
131C:		
Alvin	Water erosion	Low pH, water erosion, low fertility
131D:		
Alvin	Water erosion	Low pH, water erosion, low fertility
131F:		
Alvin	---	Equipment limitation, low pH, water erosion, low fertility
134A:		
Camden	Crusting	Generally not used as pastureland
134B:		
Camden	Crusting, water erosion	Low pH, water erosion
134C2:		
Camden	Crusting, water erosion	Low pH, water erosion
145B:		
Saybrook	High pH, water erosion	High pH
145B2:		
Saybrook	High pH, water erosion	High pH, water erosion
145C2:		
Saybrook	High pH, water erosion	High pH, water erosion
148B:		
Proctor	Water erosion	Generally not used as pastureland
152A:		
Drummer	Ponding, poor tilth	Generally not used as pastureland
154A:		
Flanagan	Wetness	Generally not used as pastureland
154B:		
Flanagan	Wetness, water erosion	Generally not used as pastureland
171B:		
Catlin	Water erosion	Generally not used as pastureland
171B2:		
Catlin	Water erosion	Water erosion
171C2:		
Catlin	Water erosion	Water erosion
194C2:		
Morley	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
198A:		
Elburn	Wetness	Generally not used as pastureland
199A:		
Plano	No major limitations	Generally not used as pastureland
199B:		
Plano	Water erosion	Generally not used as pastureland
223B2:		
Varna	Poor tilth, high pH, crusting, water erosion	Generally not used as pastureland
223C2:		
Varna	Poor tilth, high pH, crusting, water erosion	Poor tilth, high pH, water erosion
223D:		
Varna	Poor tilth, high pH, water erosion	Poor tilth, high pH, water erosion
224D2:		
Strawn	High pH, crusting, water erosion	High pH, water erosion
233B2:		
Birkbeck	Crusting, water erosion	Water erosion
233C2:		
Birkbeck	Crusting, water erosion	Low pH, water erosion
233D2:		
Birkbeck	Crusting, water erosion	Low pH, water erosion
236A:		
Sabina	Wetness, crusting	Generally not used as pastureland
241C2:		
Chatsworth	Generally not used as cropland	Poor tilth, water erosion, limited available water capacity, excess lime
241C3:		
Chatsworth	---	Poor tilth, water erosion, limited available water capacity, low fertility, excess lime
243A:		
St. Charles	Crusting	Generally not used as pastureland
243B:		
St. Charles	Crusting, water erosion	Low pH, water erosion
279B2:		
Rozetta	Crusting, water erosion	Low pH, water erosion
290A:		
Warsaw	High pH, excessive permeability	Generally not used as pastureland
322C2:		
Russell	Crusting, water erosion	Low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
322D2:		
Russell	Crusting, water erosion	Low pH, water erosion
327C2:		
Fox	Poor tilth, high pH, crusting, water erosion, limited available water capacity, excessive permeability	Poor tilth, high pH, water erosion, limited available water capacity, excessive permeability
330A:		
Peotone	Ponding, poor tilth	Generally not used as pastureland
356A:		
Elpaso	Ponding, poor tilth	Generally not used as pastureland
369A:		
Waupecan	Excessive permeability	Generally not used as pastureland
369B:		
Waupecan	Water erosion, excessive permeability	Generally not used as pastureland
375A:		
Rutland	Wetness, poor tilth	Generally not used as pastureland
375B:		
Rutland	Wetness, poor tilth, water erosion	Generally not used as pastureland
375B2:		
Rutland	Wetness, poor tilth, water erosion	Generally not used as pastureland
379A:		
Dakota	Excessive permeability	Generally not used as pastureland
383B:		
Newvienna	Crusting, water erosion	Low pH, water erosion
387A:		
Ockley	Crusting, excessive permeability	Generally not used as pastureland
388B2:		
Wenona	Water erosion	Generally not used as pastureland
388C2:		
Wenona	Poor tilth, water erosion	Poor tilth, low pH, water erosion
435A:		
Streator	Ponding, poor tilth	Generally not used as pastureland
440A:		
Jasper	No major limitations	Generally not used as pastureland
440B:		
Jasper	Water erosion	Generally not used as pastureland
440C2:		
Jasper	Crusting, water erosion	Generally not used as pastureland

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
541B2:		
Graymont	High pH, crusting, water erosion	Generally not used as pastureland
541C2:		
Graymont	High pH, crusting, water erosion	High pH, water erosion
567B:		
Elkhart	High pH, water erosion	Generally not used as pastureland
570A:		
Martinsville	No major limitations	No major limitations
570B:		
Martinsville	No major limitations	Low pH, low fertility
570C2:		
Martinsville	Crusting, water erosion	Low pH, water erosion
614A:		
Chenoa	Wetness, poor tilth, high pH	Generally not used as pastureland
614B2:		
Chenoa	Wetness, poor tilth, high pH, crusting, water erosion	Generally not used as pastureland
618C2:		
Senachwine	High pH, crusting, water erosion	High pH, water erosion
618D2:		
Senachwine	High pH, crusting, water erosion	High pH, water erosion
622B2:		
Wyanet	High pH, crusting, water erosion	Generally not used as pastureland
622C2:		
Wyanet	High pH, crusting, water erosion	High pH, water erosion
663A:		
Clare	No major limitations	Generally not used as pastureland
679A:		
Blackberry	No major limitations	Generally not used as pastureland
679B:		
Blackberry	Water erosion	Generally not used as pastureland
689B:		
Coloma	Wind erosion, limited available water capacity, excessive permeability	Generally not used as pastureland
689D:		
Coloma	---	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
705B:		
Buckhart	Water erosion	Generally not used as pastureland
712A:		
Spaulding	Ponding, poor tilth, excess lime	Generally not used as pastureland
715A:		
Arrowsmith	Wetness, high pH	Generally not used as pastureland
721A:		
Drummer	Ponding, poor tilth	Generally not used as pastureland
Elpaso	Ponding, poor tilth	Generally not used as pastureland
883F:		
Senachwine	---	Equipment limitation, high pH, water erosion
Hennepin	---	Equipment limitation, excess lime, water erosion
883G:		
Senachwine	---	---
Hennepin	---	---
964F:		
Miami	---	Equipment limitation, high pH, water erosion
Hennepin	---	Equipment limitation, excess lime, water erosion
1100A:		
Palms	---	---
1210L:		
Lena	---	---
3092L:		
Sarpy	Flooding, wind erosion, limited available water capacity, excessive permeability	Generally not used as pastureland
3360L:		
Slacwater	Flooding, ponding, high pH, crusting	Generally not used as pastureland
7070A:		
Beaucoup	Ponding, poor tilth	Generally not used as pastureland
8073A:		
Ross	Flooding, high pH	Flooding, high pH
8074A:		
Radford	Flooding, wetness	Flooding, wetness
8077A:		
Huntsville	Flooding	Flooding

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
8107A:		
Sawmill	Flooding, ponding, poor tilth	Flooding, ponding, frost heave, poor tilth
8304A:		
Landes	Flooding, limited available water capacity, excessive permeability	Flooding, limited available water capacity, excessive permeability
8368L:		
Raveenwash	Flooding, wetness, excess lime	Generally not used as pastureland
8400L:		
Calco	Flooding, ponding, excess lime, poor tilth	Generally not used as pastureland
8402A:		
Colo	Flooding, ponding	Flooding, ponding, frost heave
8451A:		
Lawson	Flooding, wetness	Flooding, wetness

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
17A:							
Keomah	2w	145	46	59	75	4.63	6.80
17B2:							
Keomah	2e	136	43	55	71	4.35	6.50
25G:							
Hennepin	7e	---	---	---	---	---	---
27C2:							
Miami	3e	128	41	50	63	3.57	5.20
27D2:							
Miami	4e	119	38	47	59	3.30	4.80
43A:							
Ipava	1	172	56	69	90	---	---
43B:							
Ipava	2e	170	55	68	89	---	---
60C2:							
La Rose	3e	133	44	53	62	4.20	6.10
60C3:							
La Rose	4e	123	40	49	58	3.90	5.60
61A:							
Atterberry	2w	164	51	64	88	4.97	7.30
67A:							
Harpster	2w	164	52	---	---	---	---
68A:							
Sable	2w	173	57	---	---	---	---
86B:							
Osco	2e	170	53	67	91	---	---
91A:							
Swygert	2w	143	47	57	71	---	---
91B2:							
Swygert	2e	133	44	53	66	---	---
125A:							
Selma	2w	157	51	---	---	---	---
131A:							
Alvin	2s	135	44	53	67	3.39	5.00
131B:							
Alvin	2e	134	44	52	66	3.36	4.95

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
131C:							
Alvin----------------	3e	131	43	51	65	3.29	4.80
131D:							
Alvin----------------	4e	123	40	48	61	3.08	4.50
131F:							
Alvin----------------	6e	---	---	---	---	2.47	3.60
134A:							
Camden---------------	1	149	46	58	78	---	---
134B:							
Camden---------------	2e	148	46	57	77	4.25	6.30
134C2:							
Camden---------------	3e	139	43	54	73	3.99	5.80
145B:							
Saybrook-------------	2e	160	50	61	85	5.59	8.30
145B2:							
Saybrook-------------	2e	152	48	58	81	5.37	7.90
145C2:							
Saybrook-------------	3e	151	47	58	80	5.25	7.70
148B:							
Proctor--------------	2e	164	51	63	88	---	---
152A:							
Drummer--------------	2w	175	57	---	---	---	---
154A:							
Flanagan-------------	1	175	56	69	92	---	---
154B:							
Flanagan-------------	2e	172	55	68	90	---	---
171B:							
Catlin---------------	2e	166	52	65	88	---	---
171B2:							
Catlin---------------	2e	160	50	63	85	5.80	8.60
171C2:							
Catlin---------------	3e	156	49	61	83	5.67	8.30
194C2:							
Morley---------------	3e	116	39	48	56	2.84	4.10
198A:							
Elburn---------------	1	178	55	67	85	---	---
199A:							
Plano----------------	1	175	54	67	93	---	---
199B:							
Plano----------------	2e	173	53	66	92	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
223B2:							
Varna	2e	135	43	55	67	---	---
223C2:							
Varna	3e	132	42	54	66	4.10	6.00
223D:							
Varna	4e	129	41	53	65	4.01	5.85
224D2:							
Strawn	4e	110	37	44	48	2.75	4.00
233B2:							
Birkbeck	2e	143	45	57	75	4.40	6.40
233C2:							
Birkbeck	3e	140	44	56	74	4.31	6.30
233D2:							
Birkbeck	4e	131	41	52	69	4.03	5.80
236A:							
Sabina	2w	151	47	59	78	---	---
241C2:							
Chatsworth	4s	---	---	---	---	2.70	3.90
241C3:							
Chatsworth	6e	---	---	---	---	2.20	3.25
243A:							
St. Charles	1	151	47	59	78	---	---
243B:							
St. Charles	2e	149	47	58	77	4.58	6.76
279B2:							
Rozetta	2e	141	44	56	72	4.51	6.60
290A:							
Warsaw	2s	145	46	58	73	---	---
322C2:							
Russell	3e	134	42	53	68	3.79	5.52
322D2:							
Russell	4e	127	40	50	64	3.60	5.20
327C2:							
Fox	3e	125	40	49	61	2.94	4.30
330A:							
Peotone	2w	148	49	---	---	---	---
356A:							
Elpaso	2w	176	57	---	---	---	---
369A:							
Waupecan	1	170	53	67	92	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
369B: Waupecan------------	2e	167	52	66	90	---	---
375A: Rutland-------------	2w	162	52	64	87	---	---
375B: Rutland-------------	2e	160	51	63	86	---	---
375B2: Rutland-------------	2e	154	49	61	83	---	---
379A: Dakota--------------	2s	135	45	55	67	---	---
383B: Newvienna-----------	2e	164	51	62	86	4.80	7.10
387A: Ockley--------------	1	140	45	55	71	---	---
388B2: Wenona--------------	2e	148	48	58	78	---	---
388C2: Wenona--------------	3e	145	47	57	76	4.62	6.74
435A: Streator------------	2w	160	52	---	---	---	---
440A: Jasper--------------	1	158	51	64	85	---	---
440B: Jasper--------------	2e	156	50	63	84	---	---
440C2: Jasper--------------	3e	147	47	60	79	---	---
533. Urban land							
536. Dumps, mine							
541B2: Graymont------------	2e	155	49	60	80	---	---
541C2: Graymont------------	3e	153	48	60	79	5.00	7.40
567B: Elkhart-------------	2e	152	49	58	72	---	---
570A: Martinsville--------	1	140	44	57	68	3.60	6.00
570B: Martinsville--------	2e	139	44	56	67	4.10	5.90

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
570C2:							
Martinsville--------	3e	130	41	53	63	3.30	5.50
614A:							
Chenoa--------------	2w	156	51	61	82	---	---
614B2:							
Chenoa--------------	2e	148	48	58	78	---	---
618C2:							
Senachwine----------	3e	123	40	48	59	2.94	4.29
618D2:							
Senachwine----------	4e	115	37	45	55	2.75	3.97
622B2:							
Wyanet--------------	2e	138	45	56	67	---	---
622C2:							
Wyanet--------------	3e	135	44	55	66	4.42	6.44
663A:							
Clare---------------	1	164	51	63	87	---	---
679A:							
Blackberry----------	1	175	54	67	93	---	---
679B:							
Blackberry----------	2e	173	53	66	92	---	---
689B:							
Coloma--------------	4s	91	29	41	46	---	---
689D:							
Coloma--------------	6s	---	---	---	---	3.08	4.30
705B:							
Buckhart------------	2e	169	54	66	89	---	---
712A:							
Spaulding-----------	2w	165	52	---	---	---	---
715A:							
Arrowsmith----------	1	171	55	67	87	---	---
721A-----------------		175	57	---	---	---	---
Drummer-------------	2w						
Elpaso--------------	2w						
802B:							
Orthents, loamy-----	3e	---	---	---	---	---	---
802D:							
Orthents, loamy-----	4e	---	---	---	---	---	---
835G.							
Earthen dam							

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
865. Pits, gravel							
883F		---	---	---	---	2.35	3.40
Senachwine	6e						
Hennepin	6e						
883G		---	---	---	---	---	---
Senachwine	7e						
Hennepin	7e						
964F		---	---	---	---	2.78	4.10
Miami	6e						
Hennepin	6e						
1100A: Palms	5w	---	---	---	---	---	---
1210L: Lena	5w	---	---	---	---	---	---
3092L: Sarpy	4w	70	24	---	---	---	---
3360L: Slacwater	4w	99	30	---	---	---	---
7070A: Beaucoup	2w	159	53	---	---	---	---
8073A: Ross	2w	167	53	64	80	4.86	7.20
8074A: Radford	2w	167	53	66	89	4.97	7.30
8077A: Huntsville	2w	174	55	67	90	6.78	10.00
8107A: Sawmill	2w	170	54	---	---	5.20	7.70
8304A: Landes	2w	121	41	50	55	2.75	4.05
8368L: Raveenwash	2w	113	36	43	51	---	---
8400L: Calco	2w	142	46	---	---	---	---
8402A: Colo	2w	169	54	---	---	4.97	7.30
8451A: Lawson	2w	171	55	66	87	5.20	7.70

* Animal unit month: The amount of forage required to feed one mature cow, of approximately 1,000 pounds weight, with or without a calf, for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
17A	Keomah silt loam, 0 to 2 percent slopes (where drained)
17B2	Keomah silt loam, 2 to 5 percent slopes, eroded
43A	Ipava silt loam, 0 to 2 percent slopes
43B	Ipava silt loam, 2 to 5 percent slopes
61A	Atterberry silt loam, 0 to 2 percent slopes (where drained)
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
86B	Osco silt loam, 2 to 5 percent slopes
91A	Swygert silty clay loam, 0 to 2 percent slopes
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded
125A	Selma loam, 0 to 2 percent slopes (where drained)
131A	Alvin loamy sand, 0 to 2 percent slopes
131B	Alvin sandy loam, 2 to 5 percent slopes
131C	Alvin sandy loam, 5 to 10 percent slopes
134A	Camden silt loam, 0 to 2 percent slopes
134B	Camden silt loam, 2 to 5 percent slopes
145B	Saybrook silt loam, 2 to 5 percent slopes
145B2	Saybrook silt loam, 2 to 5 percent slopes, eroded
148B	Proctor silt loam, 2 to 5 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
154A	Flanagan silt loam, 0 to 2 percent slopes
154B	Flanagan silt loam, 2 to 5 percent slopes
171B	Catlin silt loam, 2 to 5 percent slopes
171B2	Catlin silt loam, 2 to 5 percent slopes, eroded
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
223B2	Varna silty clay loam, 2 to 5 percent slopes, eroded
233B2	Birkbeck silt loam, 2 to 5 percent slopes, eroded
236A	Sabina silt loam, 0 to 2 percent slopes (where drained)
243A	St. Charles silt loam, 0 to 2 percent slopes
243B	St. Charles silt loam, 2 to 5 percent slopes
279B2	Rozetta silt loam, 2 to 5 percent slopes, eroded
290A	Warsaw loam, 0 to 2 percent slopes
330A	Peotone silty clay loam, 0 to 2 percent slopes (where drained)
356A	Elpaso silty clay loam, 0 to 2 percent slopes (where drained)
369A	Waupecan silt loam, 0 to 2 percent slopes
369B	Waupecan silt loam, 2 to 5 percent slopes
375A	Rutland silty clay loam, 0 to 2 percent slopes
375B	Rutland silty clay loam, 2 to 5 percent slopes
375B2	Rutland silty clay loam, 2 to 5 percent slopes, eroded
379A	Dakota loam, 0 to 2 percent slopes
383B	Newvienna silt loam, 2 to 5 percent slopes
387A	Ockley loam, 0 to 2 percent slopes
388B2	Wenona silt loam, 2 to 5 percent slopes, eroded
435A	Streator silty clay loam, 0 to 2 percent slopes (where drained)
440A	Jasper silt loam, 0 to 2 percent slopes
440B	Jasper silt loam, 2 to 5 percent slopes
541B2	Graymont silt loam, 2 to 5 percent slopes, eroded
567B	Elkhart silt loam, 2 to 5 percent slopes
570A	Martinsville silt loam, 0 to 2 percent slopes
570B	Martinsville sandy loam, 2 to 5 percent slopes
614A	Chenoa silty clay loam, 0 to 2 percent slopes
614B2	Chenoa silty clay loam, 2 to 5 percent slopes, eroded
622B2	Wyanet silt loam, 2 to 5 percent slopes, eroded
663A	Clare silt loam, 0 to 2 percent slopes
679A	Blackberry silt loam, 0 to 2 percent slopes
679B	Blackberry silt loam, 2 to 5 percent slopes
705B	Buckhart silt loam, 2 to 5 percent slopes

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
712A	Spaulding silty clay loam, 0 to 2 percent slopes (where drained)
715A	Arrowsmith silt loam, 0 to 2 percent slopes
721A	Drummer and Elpaso silty clay loams, 0 to 2 percent slopes (where drained)
7070A	Beaucoup silty clay loam, 0 to 2 percent slopes, rarely flooded (where drained)
8073A	Ross loam, 0 to 2 percent slopes, occasionally flooded
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8304A	Landes fine sandy loam, 0 to 2 percent slopes, occasionally flooded
8368L	Raveenwash silt loam, 0 to 2 percent slopes, occasionally flooded, long duration
8400L	Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded, long duration (where drained)
8402A	Colo silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Table 9.--Hydric Soils

(Only those map units that have hydric components are listed. A few components may not be mapped in this survey area but are part of the map unit concept for the MLRA. See text for a description of hydric qualities and definitions of the codes in the hydric criteria column)

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
17A:				
Keomah silt loam, 0 to 2 percent slopes	Keomah	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
17B2:				
Keomah silt loam, 2 to 5 percent slopes, eroded	Keomah	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
27C2:				
Miami silt loam, 5 to 10 percent slopes, eroded	Miami	Not hydric	ground moraine	---
	Drummer	Hydric	swale	2B3
27D2:				
Miami silt loam, 10 to 18 percent slopes, eroded	Miami	Not hydric	ground moraine	---
	Sawmill	Hydric	flood plain	2B3
43A:				
Ipava silt loam, 0 to 2 percent slopes	Ipava	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
43B:				
Ipava silt loam, 2 to 5 percent slopes	Ipava	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
60C2:				
La Rose silt loam, 5 to 10 percent slopes, eroded	La Rose	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
60C3:				
La Rose silty clay loam, 5 to 10 percent slopes, severely eroded	La Rose	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
61A:				
Atterberry silt loam, 0 to 2 percent slopes	Atterberry	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
67A:				
Harpster silty clay loam, 0 to 2 percent slopes	Harpster	Hydric	outwash plain	2B3
68A:				
Sable silty clay loam, 0 to 2 percent slopes	Sable	Hydric	ground moraine	2B3
86B:				
Osco silt loam, 2 to 5 percent slopes	Osco	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
91A:				
Swygert silty clay loam, 0 to 2 percent slopes	Swygert	Not hydric	ground moraine	---
	Streator	Hydric	swale	2B3
91B2:				
Swygert silty clay loam, 2 to 4 percent slopes, eroded	Swygert	Not hydric	ground moraine	---
	Streator	Hydric	swale	2B3
125A:				
Selma loam, 0 to 2 percent slopes	Selma	Hydric	stream terrace	2B3
145B:				
Saybrook silt loam, 2 to 5 percent slopes	Saybrook	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
145B2:				
Saybrook silt loam, 2 to 5 percent slopes, eroded	Saybrook	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
145C2:				
Saybrook silt loam, 5 to 10 percent slopes, eroded	Saybrook	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
	Sawmill	Hydric	flood plain	2B3
148B:				
Proctor silt loam, 2 to 5 percent slopes	Proctor	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	swale	2B3
152A:				
Drummer silty clay loam, 0 to 2 percent slopes	Drummer	Hydric	outwash plain	2B3
154A:				
Flanagan silt loam, 0 to 2 percent slopes	Flanagan	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
	Sable	Hydric	swale	2B3
154B:				
Flanagan silt loam, 2 to 5 percent slopes	Flanagan	Not hydric	ground moraine	---
	Elpaso	Hydric	ground moraine	2B3
	Sable	Hydric	ground moraine	2B3
171B:				
Catlin silt loam, 2 to 5 percent slopes	Catlin	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
	Sable	Hydric	swale	2B3
171B2:				
Catlin silt loam, 2 to 5 percent slopes, eroded	Catlin	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
	Sable	Hydric	swale	2B3
171C2:				
Catlin silt loam, 5 to 10 percent slopes, eroded	Catlin	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
	Sable	Hydric	swale	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
198A:				
Elburn silt loam, 0 to 2 percent slopes	Elburn	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	swale	2B3
199A:				
Plano silt loam, 0 to 2 percent slopes	Plano	Not hydric	stream terrace	---
	Drummer	Hydric	swale	2B3
199B:				
Plano silt loam, 2 to 5 percent slopes	Plano	Not hydric	stream terrace	---
	Drummer	Hydric	swale	2B3
236A:				
Sabina silt loam, 0 to 2 percent slopes	Sabina	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
241C2:				
Chatsworth silty clay loam, 4 to 7 percent slopes, eroded	Chatsworth	Not hydric	ground moraine	---
	Streator	Hydric	ground moraine	2B3
241C3:				
Chatsworth silty clay, 4 to 6 percent slopes, severely eroded	Chatsworth	Not hydric	ground moraine	---
	Bryce	Hydric	ground moraine	2B3
243A:				
St. Charles silt loam, 0 to 2 percent slopes	St. Charles	Not hydric	stream terrace	---
	Sawmill	Hydric	flood plain	2B3
243B:				
St. Charles silt loam, 2 to 5 percent slopes	St. Charles	Not hydric	stream terrace	---
	Sawmill	Hydric	flood plain	2B3
279B2:				
Rozetta silt loam, 2 to 5 percent slopes, eroded	Rozetta	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
290A:				
Warsaw loam, 0 to 2 percent slopes	Warsaw	Not hydric	stream terrace	---
	Selma	Hydric	swale	2B3
322C2:				
Russell silt loam, 5 to 10 percent slopes, eroded	Russell	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
330A:				
Peotone silty clay loam, 0 to 2 percent slopes	Peotone	Hydric	ground moraine	2B3
356A:				
Elpaso silty clay loam, 0 to 2 percent slopes	Elpaso	Hydric	ground moraine	2B3
	Peotone	Hydric	depression	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
369A:				
Waupecan silt loam, 0 to 2 percent slopes	Waupecan	Not hydric	outwash plain	---
	Drummer	Hydric	swale	2B3
375A:				
Rutland silty clay loam, 0 to 2 percent slopes	Rutland	Not hydric	ground moraine	---
	Streator	Hydric	ground moraine	2B3
375B:				
Rutland silty clay loam, 2 to 5 percent slopes	Rutland	Not hydric	ground moraine	---
	Streator	Hydric	ground moraine	2B3
375B2:				
Rutland silty clay loam, 2 to 5 percent slopes, eroded	Rutland	Not hydric	ground moraine	---
	Streator	Hydric	ground moraine	2B3
383B:				
Newvienna silt loam, 2 to 5 percent slopes	Newvienna	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
387A:				
Ockley loam, 0 to 2 percent slopes	Ockley	Not hydric	stream terrace	---
	Selma	Hydric	swale	2B3
388B2:				
Wenona silt loam, 2 to 5 percent slopes, eroded	Wenona	Not hydric	ground moraine	---
	Streator	Hydric	ground moraine	2B3
388C2:				
Wenona silty clay loam, 5 to 10 percent slopes, eroded	Wenona	Not hydric	ground moraine	---
	Streator	Hydric	ground moraine	2B3
435A:				
Streator silty clay loam, 0 to 2 percent slopes	Streator	Hydric	ground moraine	2B3
541B2:				
Graymont silt loam, 2 to 5 percent slopes, eroded	Graymont	Not hydric	ground moraine	---
	Elpaso	Hydric	ground moraine	2B3
541C2:				
Graymont silt loam, 5 to 10 percent slopes, eroded	Graymont	Not hydric	ground moraine	---
	Elpaso	Hydric	ground moraine	2B3
567B:				
Elkhart silt loam, 2 to 5 percent slopes	Elkhart	Not hydric	ground moraine	---
	Sable	Hydric	ground moraine	2B3
614A:				
Chenoa silty clay loam, 0 to 2 percent slopes	Chenoa	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
614B2:				
Chenoa silty clay loam, 2 to 5 percent slopes, eroded	Chenoa	Not hydric	ground moraine	---
	Elpaso	Hydric	swale	2B3
618C2:				
Senachwine silt loam, 5 to 10 percent slopes, eroded	Senachwine	Not hydric	ground moraine	---
	Elpaso	Hydric	ground moraine	2B3
	Sawmill	Hydric	flood plain	2B3
618D2:				
Senachwine silt loam, 10 to 18 percent slopes, eroded	Senachwine	Not hydric	ground moraine	---
	Sawmill	Hydric	flood plain	2B3
622B2:				
Wyanet silt loam, 2 to 5 percent slopes, eroded	Wyanet	Not hydric	ground moraine	---
	Elpaso	Hydric	ground moraine	2B3
622C2:				
Wyanet silt loam, 5 to 10 percent slopes, eroded	Wyanet	Not hydric	ground moraine	---
	Elpaso	Hydric	ground moraine	2B3
663A:				
Clare silt loam, 0 to 2 percent slopes	Clare	Not hydric	outwash plain	---
	Drummer	Hydric	swale	2B3
679A:				
Blackberry silt loam, 0 to 2 percent slopes	Blackberry	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	swale	2B3
679B:				
Blackberry silt loam, 2 to 5 percent slopes	Blackberry	Not hydric	outwash plain	---
	Drummer	Hydric	swale	2B3
705B:				
Buckhart silt loam, 2 to 5 percent slopes	Buckhart	Not hydric	ground moraine, knoll	---
	Sable	Hydric	swale	2B3
712A:				
Spaulding silty clay loam, 0 to 2 percent slopes	Spaulding	Hydric	ground moraine	2B3
715A:				
Arrowsmith silt loam, 0 to 2 percent slopes	Arrowsmith	Not hydric	ground moraine	---
	Sable	Hydric	swale	2B3
	Spaulding	Hydric	swale	2B3
721A:				
Drummer and Elpaso silty clay loams, 0 to 2 percent slopes	Drummer	Hydric	outwash plain	2B3
	Elpaso	Hydric	ground moraine	2B3
	Peotone	Hydric	depression	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
1100A:				
Palms muck, undrained, 0 to 2 percent slopes	Palms	Hydric	depression	1
1210L:				
Lena muck, undrained, 0 to 2 percent slopes, frequently flooded, long duration	Lena	Hydric	flood plain	1,4
	Calco	Hydric	flood plain	2B3
3092L:				
Sarpy loamy fine sand, 0 to 2 percent slopes, frequently flooded, long duration	Sarpy	Hydric	flood plain, natural levee	4
	Slacwater	Hydric	flood plain	4,2B3,3
3360L:				
Slacwater silt loam, 0 to 2 percent slopes, frequently flooded, long duration	Slacwater	Hydric	flood plain	3,2B3,4
7070A:				
Beaucoup silty clay loam, 0 to 2 percent slopes, rarely flooded	Beaucoup	Hydric	flood plain	2B3
8073A:				
Ross loam, 0 to 2 percent slopes, occasionally flooded	Ross	Not hydric	flood plain	---
	Sawmill	Hydric	flood plain	2B3
8074A:				
Radford silt loam, 0 to 2 percent slopes, occasionally flooded	Radford	Not hydric	flood plain	---
	Sawmill	Hydric	flood plain	2B3
8077A:				
Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	Huntsville	Not hydric	flood plain	---
	Sawmill	Hydric	flood plain	2B3
8107A:				
Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	Sawmill	Hydric	flood plain	2B3
8368L:				
Raveenwash silt loam, 0 to 2 percent slopes, occasionally flooded, long duration	Raveenwash	Not hydric	alluvial fan, flood plain	---
	Slacwater	Hydric	flood plain	2B3,3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria
8400L:				
Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded, long duration	Calco	Hydric	flood plain	2B3
	Lena	Hydric	flood plain	1
8402A:				
Colo silt loam, 0 to 2 percent slopes, occasionally flooded	Colo	Hydric	flood plain	2B3
8451A:				
Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	Lawson	Not hydric	flood plain	---
	Sawmill	Hydric	flood plain	2B3

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
17A:					
Keomah	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
17B2:					
Keomah	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
25G:					
Hennepin	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
27C2:					
Miami	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
27D2:					
Miami	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
43A:					
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
43B:					
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
60C2:					
La Rose	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
60C3:					
La Rose	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
61A:					
Atterberry	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
67A:					
Harpster	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
68A:					
Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
86B:					
Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
91A:					
Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
91B2:					
Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
125A:					
Selma	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
131A:					
Alvin	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
131B:					
Alvin	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
131C:					
Alvin	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
131D:					
Alvin	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
131F:					
Alvin	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
134A: Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
134B: Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
134C2: Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
145B: Saybrook	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
145B2:					
Saybrook	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
145C2:					
Saybrook	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
148B:					
Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
152A:					
Drummer	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
154A:					
Flanagan	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
154B:					
Flanagan	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
171B:					
Catlin	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
171B2:					
Catlin	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
171C2:					
Catlin	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
194C2:					
Morley	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
198A:					
Elburn	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
199A:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
199B:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
223B2:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
223C2:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
223D:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
224D2:					
Strawn	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
233B2:					
Birkbeck	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
233C2:					
Birkbeck	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
233D2:					
Birkbeck	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
236A:					
Sabina	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
241C2:					
Chatsworth	Coralberry, mapleleaf viburnum, redosier dogwood, roughleaf dogwood	American cranberrybush, Ohio buckeye, bitternut hickory, bur oak, chinkapin oak, cockspur hawthorn, common chokecherry, eastern redcedar	Austrian pine, common hackberry, thornless honeylocust	Carolina poplar	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
241C3:					
Chatsworth	Coralberry, mapleleaf viburnum, redosier dogwood, roughleaf dogwood	American cranberrybush, Ohio buckeye, bitternut hickory, bur oak, chinkapin oak, cockspur hawthorn, common chokecherry, eastern redcedar	Austrian pine, common hackberry, thornless honeylocust	Carolina poplar	---
243A:					
St. Charles	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
243B:					
St. Charles	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
279B2:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
290A:					
Warsaw	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
322C2:					
Russell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
322D2:					
Russell	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
327C2:					
Fox	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
330A:					
Peotone	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
356A:					
Elpaso	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
369A:					
Waupecan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
369B: Waupecan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
375A: Rutland	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
375B: Rutland	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
375B2:					
Rutland	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
379A:					
Dakota	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
383B:					
Newvienna	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
387A:					
Ockley	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
388B2:					
Wenona	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
388C2:					
Wenona	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
435A:					
Streator	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
440A:					
Jasper	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
440B:					
Jasper	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
440C2:					
Jasper	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
533. Urban land					
536. Dumps, mine					
541B2:					
Graymont	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
541C2:					
Graymont	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
567B:					
Elkhart	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
570A:					
Martinsville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
570B:					
Martinsville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
570C2:					
Martinsville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
614A:					
Chenoa	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
614B2:					
Chenoa	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
618C2:					
Senachwine	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
618D2:					
Senachwine	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
622B2:					
Wyanet	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
622C2:					
Wyanet	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
663A:					
Clare	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
679A:					
Blackberry	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
679B:					
Blackberry	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
689B:					
Coloma	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
689D:					
Coloma	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
705B:					
Buckhart	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
712A:					
Spaulding	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
715A:					
Arrowsmith	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
721A:					
Drummer	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
Elpaso	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
802B:					
Orthents, loamy	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
802D:					
Orthents, loamy	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
835G. Earthen dam					
865. Pits, gravel					
883F:					
Senachwine	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
Hennepin	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
883G:					
Senachwine	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
883G:					
Hennepin	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
964F:					
Miami	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
Hennepin	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
1100A:					
Palms	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1210L:					
Lena	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
3092L:					
Sarpy	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3360L:					
Slacwater	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
7070A:					
Beaucoup	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8073A:					
Ross	American hazelnut, common winterberry, gray dogwood, redosier dogwood	Blackhaw, common chokecherry, common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	American sycamore, arborvitae, blue spruce, bur oak, chinkapin oak, common hackberry, eastern redcedar	Carolina poplar, eastern cottonwood	---
8074A:					
Radford	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8077A:					
Huntsville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
8107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8304A:					
Landes	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, blackgum, blue spruce, bur oak, eastern redcedar, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine
8368L:					
Raveenwash	Common winterberry, gray dogwood, redosier dogwood, silky dogwood	Blackhaw, common pawpaw, common serviceberry, downy arrowwood, roughleaf dogwood, southern arrowwood	Austrian pine, arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn, nannyberry	Carolina poplar, eastern cottonwood	---
8400L:					
Calco	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
8402A:					
Colo	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11a.--Forestland Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
17B2:						
Keomah	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
25G:						
Hennepin	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
27C2:						
Miami	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
27D2:						
Miami	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
43A:						
Ipava	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
43B:						
Ipava	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
60C2:						
La Rose	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
60C3:						
La Rose	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
61A:						
Atterberry	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
67A:						
Harpster------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
68A:						
Sable---------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
86B:						
Osco----------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
91A:						
Swygert-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Wetness	0.50		
91B2:						
Swygert-------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Wetness	0.50		
125A:						
Selma---------------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
131A:						
Alvin---------------	Slight		Well suited		Moderate	
					Low strength	0.50
131B:						
Alvin---------------	Slight		Well suited		Moderate	
					Low strength	0.50
131C:						
Alvin---------------	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
131D:						
Alvin---------------	Slight		Poorly suited		Moderate	
			Slope	1.00	Low strength	0.50
131F:						
Alvin---------------	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
134A:						
Camden--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
134B:						
Camden--------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	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
134C2:						
Camden	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
145B:						
Saybrook	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
145B2:						
Saybrook	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
145C2:						
Saybrook	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
148B:						
Proctor	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
152A:						
Drummer	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
154A:						
Flanagan	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
154B:						
Flanagan	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
171B:						
Catlin	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
171B2:						
Catlin	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
171C2:						
Catlin	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
194C2:						
Morley	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
198A:						
Elburn	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
199A:						
Plano	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
199B:						
Plano	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
223B2:						
Varna	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
223C2:						
Varna	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
223D:						
Varna	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
224D2:						
Strawn	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
233B2:						
Birkbeck	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
233C2:						
Birkbeck	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
233D2:						
Birkbeck	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
236A:						
Sabina	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
241C2:						
Chatsworth	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
241C3:						
Chatsworth	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Stickiness; high plasticity index	0.50		
243A:						
St. Charles	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	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
243B:						
St. Charles	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
279B2:						
Rozetta	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
290A:						
Warsaw	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Sandiness	0.50				
322C2:						
Russell	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
322D2:						
Russell	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
327C2:						
Fox	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Sandiness	0.50	Slope	0.50		
330A:						
Peotone	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
356A:						
Elpaso	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
369A:						
Waupecan	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Sandiness	0.50				
369B:						
Waupecan	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Sandiness	0.50				
375A:						
Rutland	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Wetness	0.50		
375B:						
Rutland	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Wetness	0.50		

Table 11a.--Forestland Management--Continued

Map symbol and soil name	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
375B2:						
Rutland	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Wetness	0.50		
379A:						
Dakota	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
383B:						
Newvienna	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
387A:						
Ockley	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
388B2:						
Wenona	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50				
388C2:						
Wenona	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Slope	0.50		
435A:						
Streator	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
	Stickiness/slope	0.50	Wetness	1.00		
			Low strength	0.50		
440A:						
Jasper	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
440B:						
Jasper	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
440C2:						
Jasper	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
533:						
Urban land	Not rated		Not rated		Not rated	
536:						
Dumps, mine	Not rated		Not rated		Not rated	
541B2:						
Graymont	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
541C2:						
Graymont	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 11a.--Forestland Management--Continued

Map symbol and soil name	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
567B:						
Elkhart	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
570A:						
Martinsville	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
570B:						
Martinsville	Moderate		Well suited		Moderate	
	Low strength	0.50			Low strength	0.50
570C2:						
Martinsville	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
614A:						
Chenoa	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
614B2:						
Chenoa	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
618C2:						
Senachwine	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
618D2:						
Senachwine	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
622B2:						
Wyanet	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
622C2:						
Wyanet	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
663A:						
Clare	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
679A:						
Blackberry	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
679B:						
Blackberry	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
689B:						
Coloma	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Sandiness	0.50	Low strength	0.50
689D:						
Coloma	Moderate		Moderately suited		Moderate	
	Sandiness	0.50	Slope	0.50	Low strength	0.50
			Sandiness	0.50		
705B:						
Buckhart	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
712A:						
Spaulding	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
715A:						
Arrowsmith	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
721A:						
Drummer	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
Elpaso	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
802B:						
Orthents, loamy	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
802D:						
Orthents, loamy	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		
835G:						
Earthen dam	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
883F:						
Senachwine	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
Hennepin	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		

Table 11a.--Forestland Management--Continued

Map symbol and soil name	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
883G:						
Senachwine	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
Hennepin	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
964F:						
Miami	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
Hennepin	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
1100A:						
Palms	Severe		Poorly suited		Severe	
	Wetness	1.00	Ponding	1.00	Low strength	1.00
			Low strength	1.00	Wetness	0.50
			Wetness	1.00		
1210L:						
Lena	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	1.00		
			Wetness	1.00		
3092L:						
Sarpy	Severe		Poorly suited		Moderate	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
3360L:						
Slacwater	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
7070A:						
Beaucoup	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
8073A:						
Ross	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
8074A:						
Radford	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		

Table 11a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
8077A:						
Huntsville----------	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
8107A:						
Sawmill-------------	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
8304A:						
Landes--------------	Severe		Poorly suited		Moderate	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
8368L:						
Raveenwash----------	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		
8400L:						
Calco---------------	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
8402A:						
Colo----------------	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
8451A:						
Lawson--------------	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		

Table 11b.--Forestland Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah--------------	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
17B2:						
Keomah--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Wetness	0.50
					Low strength	0.50
25G:						
Hennepin------------	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
27C2:						
Miami---------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
27D2:						
Miami---------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
43A:						
Ipava---------------	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
43B:						
Ipava---------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Wetness	0.50
60C2:						
La Rose-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
60C3:						
La Rose-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
61A:						
Atterberry----------	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
67A:						
Harpster------------	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
68A:						
Sable	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
86B:						
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
91A:						
Swygert	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
91B2:						
Swygert	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Wetness	0.50
125A:						
Selma	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
131A:						
Alvin	Slight		Slight		Well suited	
131B:						
Alvin	Slight		Slight		Well suited	
131C:						
Alvin	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
131D:						
Alvin	Slight		Moderate		Poorly suited	
			Slope/erodibility	0.50	Slope	1.00
131F:						
Alvin	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
134A:						
Camden	Slight		Slight		Moderately suited	
					Low strength	0.50
134B:						
Camden	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
134C2:						
Camden	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
145B:						
Saybrook	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	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
145B2:						
Saybrook	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
145C2:						
Saybrook	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
148B:						
Proctor	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
152A:						
Drummer	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
154A:						
Flanagan	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
154B:						
Flanagan	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Wetness	0.50
171B:						
Catlin	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
171B2:						
Catlin	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
171C2:						
Catlin	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
194C2:						
Morley	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
198A:						
Elburn	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
199A:						
Plano	Slight		Slight		Moderately suited	
					Low strength	0.50
199B:						
Plano	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
223B2:						
Varna---------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
223C2:						
Varna---------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
223D:						
Varna---------------	Slight		Moderate		Poorly suited	
			Slope/erodibility	0.50	Slope	1.00
					Low strength	0.50
224D2:						
Strawn--------------	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
233B2:						
Birkbeck------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
233C2:						
Birkbeck------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
233D2:						
Birkbeck------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
236A:						
Sabina--------------	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
241C2:						
Chatsworth----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
241C3:						
Chatsworth----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Stickiness; high plasticity index	0.50
243A:						
St. Charles---------	Slight		Slight		Moderately suited	
					Low strength	0.50
243B:						
St. Charles---------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
279B2:						
Rozetta-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
290A:						
Warsaw	Slight		Slight		Moderately suited	
					Low strength	0.50
322C2:						
Russell	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
322D2:						
Russell	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
327C2:						
Fox	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
330A:						
Peotone	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
356A:						
Elpaso	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
369A:						
Waupecan	Slight		Slight		Moderately suited	
					Low strength	0.50
369B:						
Waupecan	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
375A:						
Rutland	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
375B:						
Rutland	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Wetness	0.50
375B2:						
Rutland	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Wetness	0.50
379A:						
Dakota	Slight		Slight		Moderately suited	
					Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
383B:						
Newvienna-----------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
387A:						
Ockley--------------	Slight		Slight		Moderately suited	
					Low strength	0.50
388B2:						
Wenona--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
388C2:						
Wenona--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
435A:						
Streator------------	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
440A:						
Jasper--------------	Slight		Slight		Moderately suited	
					Low strength	0.50
440B:						
Jasper--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
440C2:						
Jasper--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
533:						
Urban land----------	Not rated		Not rated		Not rated	
536:						
Dumps, mine---------	Not rated		Not rated		Not rated	
541B2:						
Graymont------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
541C2:						
Graymont------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
567B:						
Elkhart-------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
570A:						
Martinsville--------	Slight		Slight		Moderately suited	
					Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
570B:						
Martinsville	Slight		Slight		Well suited	
570C2:						
Martinsville	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
614A:						
Chenoa	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
614B2:						
Chenoa	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Wetness	0.50
618C2:						
Senachwine	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
618D2:						
Senachwine	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
622B2:						
Wyanet	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
622C2:						
Wyanet	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
663A:						
Clare	Slight		Slight		Moderately suited	
					Low strength	0.50
679A:						
Blackberry	Slight		Slight		Moderately suited	
					Low strength	0.50
679B:						
Blackberry	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
689B:						
Coloma	Slight		Slight		Moderately suited	
					Sandiness	0.50
689D:						
Coloma	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
					Sandiness	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
705B:						
Buckhart	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
712A:						
Spaulding	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
715A:						
Arrowsmith	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
721A:						
Drummer	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
Elpaso	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
802B:						
Orthents, loamy	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
802D:						
Orthents, loamy	Moderate		Severe		Moderately suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
					Low strength	0.50
835G:						
Earthen dam	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
883F:						
Senachwine	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Hennepin	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
883G:						
Senachwine	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Hennepin	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
964F:						
Miami	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
Hennepin	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
1100A:						
Palms	Slight		Slight		Poorly suited	
					Ponding	1.00
					Low strength	1.00
					Wetness	1.00
1210L:						
Lena	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Low strength	1.00
					Wetness	1.00
3092L:						
Sarpy	Slight		Slight		Poorly suited	
					Flooding	1.00
3360L:						
Slacwater	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
7070A:						
Beaucoup	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
8073A:						
Ross	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
8074A:						
Radford	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
8077A:						
Huntsville	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
8107A:						
Sawmill	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50

Table 11b.--Forestland Management--Continued

Map symbol and soil name	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
8304A:						
Landes	Slight		Slight		Poorly suited	
					Flooding	1.00
8368L:						
Raveenwash	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
8400L:						
Calco	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
8402A:						
Colo	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
					Low strength	0.50
8451A:						
Lawson	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50

Table 11c.--Forestland Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah	Well suited		Well suited		Moderately suited	
					Low strength	0.50
17B2:						
Keomah	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
25G:						
Hennepin	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
					Low strength	0.50
27C2:						
Miami	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
27D2:						
Miami	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
43A:						
Ipava	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
43B:						
Ipava	Well suited		Well suited		Moderately suited	
					Low strength	0.50
60C2:						
La Rose	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
60C3:						
La Rose	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
61A:						
Atterberry	Well suited		Well suited		Moderately suited	
					Low strength	0.50
67A:						
Harpster	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
68A:						
Sable	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
86B:						
Osco	Well suited		Well suited		Moderately suited	
					Low strength	0.50
91A:						
Swygert	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
91B2:						
Swygert	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
125A:						
Selma	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
131A:						
Alvin	Well suited		Well suited		Well suited	
131B:						
Alvin	Well suited		Well suited		Well suited	
131C:						
Alvin	Well suited		Moderately suited		Well suited	
			Slope	0.50		
131D:						
Alvin	Well suited		Moderately suited		Well suited	
			Slope	0.50		
131F:						
Alvin	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Slope	0.50
134A:						
Camden	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
134B:						
Camden	Well suited		Well suited		Moderately suited	
					Low strength	0.50
134C2:						
Camden	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
145B:						
Saybrook	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
145B2:						
Saybrook	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
145C2:						
Saybrook	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
148B:						
Proctor	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
152A:						
Drummer	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
154A:						
Flanagan	Well suited		Well suited		Moderately suited	
					Low strength	0.50
154B:						
Flanagan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
171B:						
Catlin	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
171B2:						
Catlin	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
171C2:						
Catlin	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
194C2:						
Morley	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
			Slope	0.50		
198A:						
Elburn	Well suited		Well suited		Moderately suited	
					Low strength	0.50
199A:						
Plano	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
199B:						
Plano	Well suited		Well suited		Moderately suited	
					Low strength	0.50
223B2:						
Varna	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
223C2:						
Varna	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
			Slope	0.50		
223D:						
Varna	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
			Slope	0.50		
224D2:						
Strawn	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
233B2:						
Birkbeck	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
233C2:						
Birkbeck	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
233D2:						
Birkbeck	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
236A:						
Sabina	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
241C2:						
Chatsworth	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
			Slope	0.50		
241C3:						
Chatsworth	Poorly suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
			Slope	0.50	Stickiness; high plasticity index	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
243A:						
St. Charles	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
243B:						
St. Charles	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
279B2:						
Rozetta	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
290A:						
Warsaw	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
322C2:						
Russell	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
322D2:						
Russell	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
327C2:						
Fox	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
330A:						
Peotone	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
356A:						
Elpaso	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
369A:						
Waupecan	Well suited		Well suited		Moderately suited	
					Low strength	0.50
369B:						
Waupecan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
375A:						
Rutland	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
375B:						
Rutland	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
375B2:						
Rutland	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
379A:						
Dakota	Well suited		Well suited		Moderately suited	
					Low strength	0.50
383B:						
Newvienna	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
387A:						
Ockley	Well suited		Well suited		Moderately suited	
					Low strength	0.50
388B2:						
Wenona	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
388C2:						
Wenona	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
435A:						
Streator	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
440A:						
Jasper	Well suited		Well suited		Moderately suited	
					Low strength	0.50
440B:						
Jasper	Well suited		Well suited		Moderately suited	
					Low strength	0.50
440C2:						
Jasper	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
533:						
Urban land	Not rated		Not rated		Not rated	
536:						
Dumps, mine	Not rated		Not rated		Not rated	

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
541B2:						
Graymont	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
541C2:						
Graymont	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
567B:						
Elkhart	Well suited		Well suited		Moderately suited	
					Low strength	0.50
570A:						
Martinsville	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
570B:						
Martinsville	Moderately suited		Moderately suited		Well suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
570C2:						
Martinsville	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
614A:						
Chenoa	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
614B2:						
Chenoa	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
618C2:						
Senachwine	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
618D2:						
Senachwine	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
622B2:						
Wyanet	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
622C2:						
Wyanet	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		
663A:						
Clare	Well suited		Well suited		Moderately suited	
					Low strength	0.50
679A:						
Blackberry	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
679B:						
Blackberry	Well suited		Well suited		Moderately suited	
					Low strength	0.50
689B:						
Coloma	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
689D:						
Coloma	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Slope	0.50	Sandiness	0.50
			Sandiness	0.50		
705B:						
Buckhart	Well suited		Well suited		Moderately suited	
					Low strength	0.50
712A:						
Spaulding	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
715A:						
Arrowsmith	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
721A:						
Drummer	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Elpaso	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
802B:						
Orthents, loamy	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
802D:						
Orthents, loamy	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
			Stickiness; high plasticity index	0.50		

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
835G:						
Earthen dam	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
883F:						
Senachwine	Moderately suited		Unsuited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	1.00	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
Hennepin	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Low strength	0.50
					Slope	0.50
883G:						
Senachwine	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Hennepin	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
					Low strength	0.50
964F:						
Miami	Moderately suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
			Stickiness; high plasticity index	0.50	Slope	0.50
Hennepin	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Low strength	0.50
					Slope	0.50
1100A:						
Palms	Poorly suited		Poorly suited		Poorly suited	
	Wetness	0.75	Wetness	0.75	Low strength	1.00
					Wetness	1.00
1210L:						
Lena	Poorly suited		Poorly suited		Poorly suited	
	Wetness	0.75	Wetness	0.75	Low strength	1.00
	Sandiness	0.50	Sandiness	0.50	Wetness	1.00
3092L:						
Sarpy	Well suited		Well suited		Well suited	
3360L:						
Slacwater	Well suited		Well suited		Moderately suited	
					Low strength	0.50
7070A:						
Beaucoup	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
8073A:						
Ross	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 11c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
8074A:						
Radford	Well suited		Well suited		Moderately suited	
					Low strength	0.50
8077A:						
Huntsville	Well suited		Well suited		Moderately suited	
					Low strength	0.50
8107A:						
Sawmill	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
8304A:						
Landes	Well suited		Well suited		Well suited	
8368L:						
Raveenwash	Well suited		Well suited		Moderately suited	
					Low strength	0.50
8400L:						
Calco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
8402A:						
Colo	Moderately suited		Moderately suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
8451A:						
Lawson	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 11d.--Forestland Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:				
Keomah	Well suited		Well suited	
17B2:				
Keomah	Well suited		Well suited	
25G:				
Hennepin	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
27C2:				
Miami	Well suited		Well suited	
27D2:				
Miami	Well suited		Well suited	
43A:				
Ipava	Well suited		Well suited	
43B:				
Ipava	Well suited		Well suited	
60C2:				
La Rose	Well suited		Well suited	
60C3:				
La Rose	Well suited		Well suited	
61A:				
Atterberry	Well suited		Well suited	
67A:				
Harpster	Well suited		Well suited	
68A:				
Sable	Well suited		Well suited	
86B:				
Osco	Well suited		Well suited	
91A:				
Swygert	Poorly suited		Well suited	
	Stickiness; high plasticity index	0.50		
91B2:				
Swygert	Poorly suited		Well suited	
	Stickiness; high plasticity index	0.50		
125A:				
Selma	Well suited		Well suited	

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
131A:				
Alvin	Well suited		Well suited	
131B:				
Alvin	Well suited		Well suited	
131C:				
Alvin	Well suited		Well suited	
131D:				
Alvin	Well suited		Well suited	
131F:				
Alvin	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
134A:				
Camden	Well suited		Well suited	
134B:				
Camden	Well suited		Well suited	
134C2:				
Camden	Well suited		Well suited	
145B:				
Saybrook	Well suited		Well suited	
145B2:				
Saybrook	Well suited		Well suited	
145C2:				
Saybrook	Well suited		Well suited	
148B:				
Proctor	Well suited		Well suited	
152A:				
Drummer	Well suited		Well suited	
154A:				
Flanagan	Well suited		Well suited	
154B:				
Flanagan	Well suited		Well suited	
171B:				
Catlin	Well suited		Well suited	
171B2:				
Catlin	Well suited		Well suited	
171C2:				
Catlin	Well suited		Well suited	
194C2:				
Morley	Well suited		Well suited	

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
198A:				
Elburn	Well suited		Well suited	
199A:				
Plano	Well suited		Well suited	
199B:				
Plano	Well suited		Well suited	
223B2:				
Varna	Well suited		Well suited	
223C2:				
Varna	Well suited		Well suited	
223D:				
Varna	Well suited		Well suited	
224D2:				
Strawn	Well suited		Well suited	
233B2:				
Birkbeck	Well suited		Well suited	
233C2:				
Birkbeck	Well suited		Well suited	
233D2:				
Birkbeck	Well suited		Well suited	
236A:				
Sabina	Well suited		Well suited	
241C2:				
Chatsworth	Poorly suited		Well suited	
	Stickiness; high plasticity index	0.50		
241C3:				
Chatsworth	Poorly suited		Well suited	
	Stickiness; high plasticity index	0.50		
243A:				
St. Charles	Well suited		Well suited	
243B:				
St. Charles	Well suited		Well suited	
279B2:				
Rozetta	Well suited		Well suited	
290A:				
Warsaw	Well suited		Well suited	
322C2:				
Russell	Well suited		Well suited	
322D2:				
Russell	Well suited		Well suited	

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
327C2:				
Fox	Well suited		Well suited	
330A:				
Peotone	Well suited		Well suited	
356A:				
Elpaso	Well suited		Well suited	
369A:				
Waupecan	Well suited		Well suited	
369B:				
Waupecan	Well suited		Well suited	
375A:				
Rutland	Well suited		Well suited	
375B:				
Rutland	Well suited		Well suited	
375B2:				
Rutland	Well suited		Well suited	
379A:				
Dakota	Well suited		Well suited	
383B:				
Newvienna	Well suited		Well suited	
387A:				
Ockley	Well suited		Well suited	
388B2:				
Wenona	Well suited		Well suited	
388C2:				
Wenona	Well suited		Well suited	
435A:				
Streator	Well suited		Well suited	
440A:				
Jasper	Well suited		Well suited	
440B:				
Jasper	Well suited		Well suited	
440C2:				
Jasper	Well suited		Well suited	
533:				
Urban land	Not rated		Not rated	
536:				
Dumps, mine	Not rated		Not rated	
541B2:				
Graymont	Well suited		Well suited	

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
541C2:				
Graymont	Well suited		Well suited	
567B:				
Elkhart	Well suited		Well suited	
570A:				
Martinsville	Well suited		Well suited	
570B:				
Martinsville	Well suited		Well suited	
570C2:				
Martinsville	Well suited		Well suited	
614A:				
Chenoa	Well suited		Well suited	
614B2:				
Chenoa	Well suited		Well suited	
618C2:				
Senachwine	Well suited		Well suited	
618D2:				
Senachwine	Well suited		Well suited	
622B2:				
Wyanet	Well suited		Well suited	
622C2:				
Wyanet	Well suited		Well suited	
663A:				
Clare	Well suited		Well suited	
679A:				
Blackberry	Well suited		Well suited	
679B:				
Blackberry	Well suited		Well suited	
689B:				
Coloma	Well suited		Well suited	
689D:				
Coloma	Well suited		Well suited	
705B:				
Buckhart	Well suited		Well suited	
712A:				
Spaulding	Well suited		Well suited	
715A:				
Arrowsmith	Well suited		Well suited	
721A:				
Drummer	Well suited		Well suited	
Elpaso	Well suited		Well suited	

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
802B:				
Orthents, loamy	Well suited		Well suited	
802D:				
Orthents, loamy	Well suited		Well suited	
835G:				
Earthen dam	Not rated		Not rated	
865:				
Pits, gravel	Not rated		Not rated	
883F:				
Senachwine	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Hennepin	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
883G:				
Senachwine	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Hennepin	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
964F:				
Miami	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Hennepin	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
1100A:				
Palms	Poorly suited		Unsuited	
	Wetness	0.75	Wetness	1.00
1210L:				
Lena	Poorly suited		Unsuited	
	Wetness	0.75	Wetness	1.00
3092L:				
Sarpy	Well suited		Well suited	
3360L:				
Slacwater	Well suited		Well suited	
7070A:				
Beaucoup	Well suited		Well suited	
8073A:				
Ross	Well suited		Well suited	
8074A:				
Radford	Well suited		Well suited	
8077A:				
Huntsville	Well suited		Well suited	
8107A:				
Sawmill	Well suited		Well suited	

Table 11d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8304A:				
Landes	Well suited		Well suited	
8368L:				
Raveenwash	Well suited		Well suited	
8400L:				
Calco	Well suited		Well suited	
8402A:				
Colo	Well suited		Well suited	
8451A:				
Lawson	Well suited		Well suited	

Table 11e.--Forestland Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value column 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	Potential for seedling mortality	
	Rating class and limiting features	Value
17A:		
Keomah	High	
	Wetness	1.00
17B2:		
Keomah	High	
	Wetness	1.00
25G:		
Hennepin	Moderate	
	Carbonate content	0.50
27C2:		
Miami	Low	
27D2:		
Miami	Low	
43A:		
Ipava	Low	
43B:		
Ipava	Low	
60C2:		
La Rose	Low	
60C3:		
La Rose	Low	
61A:		
Atterberry	High	
	Wetness	1.00
67A:		
Harpster	High	
	Wetness	1.00
	Carbonate content	0.50
	Soil reaction	0.50
68A:		
Sable	High	
	Wetness	1.00
86B:		
Osco	Low	
91A:		
Swygert	Low	

Table 11e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
91B2:		
Swygert	Low	
125A:		
Selma	High	
	Wetness	1.00
131A:		
Alvin	Low	
131B:		
Alvin	Low	
131C:		
Alvin	Low	
131D:		
Alvin	Low	
131F:		
Alvin	Low	
134A:		
Camden	Low	
134B:		
Camden	Low	
134C2:		
Camden	Low	
145B:		
Saybrook	Low	
145B2:		
Saybrook	Low	
145C2:		
Saybrook	Low	
148B:		
Proctor	Low	
152A:		
Drummer	High	
	Wetness	1.00
154A:		
Flanagan	Low	
154B:		
Flanagan	Low	
171B:		
Catlin	Low	
171B2:		
Catlin	Low	
171C2:		
Catlin	Low	

Table 11e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
194C2:		
Morley	Low	
198A:		
Elburn	Low	
199A:		
Plano	Low	
199B:		
Plano	Low	
223B2:		
Varna	Low	
223C2:		
Varna	Low	
223D:		
Varna	Low	
224D2:		
Strawn	Low	
233B2:		
Birkbeck	Low	
233C2:		
Birkbeck	Low	
233D2:		
Birkbeck	Low	
236A:		
Sabina	High	
	Wetness	1.00
241C2:		
Chatsworth	Low	
241C3:		
Chatsworth	Low	
243A:		
St. Charles	Low	
243B:		
St. Charles	Low	
279B2:		
Rozetta	Low	
290A:		
Warsaw	Low	
322C2:		
Russell	Low	
322D2:		
Russell	Low	

Table 11e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
327C2:		
Fox	Low	
330A:		
Peotone	High	
	Wetness	1.00
356A:		
Elpaso	High	
	Wetness	1.00
369A:		
Waupecan	Low	
369B:		
Waupecan	Low	
375A:		
Rutland	Low	
375B:		
Rutland	Low	
375B2:		
Rutland	Low	
379A:		
Dakota	Low	
383B:		
Newvienna	Low	
387A:		
Ockley	Low	
388B2:		
Wenona	Low	
388C2:		
Wenona	Low	
435A:		
Streator	High	
	Wetness	1.00
440A:		
Jasper	Low	
440B:		
Jasper	Low	
440C2:		
Jasper	Low	
533:		
Urban land	Not rated	
536:		
Dumps, mine	Not rated	

Table 11e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
541B2:		
Graymont	Low	
541C2:		
Graymont	Low	
567B:		
Elkhart	Low	
570A:		
Martinsville	Low	
570B:		
Martinsville	Low	
570C2:		
Martinsville	Low	
614A:		
Chenoa	Low	
614B2:		
Chenoa	High	
	Wetness	1.00
618C2:		
Senachwine	Low	
618D2:		
Senachwine	Low	
622B2:		
Wyanet	Low	
622C2:		
Wyanet	Low	
663A:		
Clare	Low	
679A:		
Blackberry	Low	
679B:		
Blackberry	Low	
689B:		
Coloma	Low	
689D:		
Coloma	Low	
705B:		
Buckhart	Low	
712A:		
Spaulding	High	
	Wetness	1.00
	Carbonate content	0.50
	Soil reaction	0.50

Table 11e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
715A:		
Arrowsmith	Low	
721A:		
Drummer	High	
	Wetness	1.00
Elpaso	High	
	Wetness	1.00
802B:		
Orthents, loamy	Low	
802D:		
Orthents, loamy	Low	
835G:		
Earthen dam	Not rated	
865:		
Pits, gravel	Not rated	
883F:		
Senachwine	Low	
Hennepin	Moderate	
	Carbonate content	0.50
883G:		
Senachwine	Low	
Hennepin	Moderate	
	Carbonate content	0.50
964F:		
Miami	Low	
Hennepin	Moderate	
	Carbonate content	0.50
	Available water	0.50
1100A:		
Palms	High	
	Wetness	1.00
1210L:		
Lena	High	
	Wetness	1.00
3092L:		
Sarpy	High	
	Wetness	1.00
3360L:		
Slacwater	High	
	Wetness	1.00
	Soil reaction	0.50
7070A:		
Beaucoup	High	
	Wetness	1.00

Table 11e.--Forestland Management--Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
8073A:		
Ross	Low	
8074A:		
Radford	Low	
8077A:		
Huntsville	Low	
8107A:		
Sawmill	High	
	Wetness	1.00
8304A:		
Landes	Low	
8368L:		
Raveenwash	Moderate	
	Wetness	0.50
	Soil reaction	0.50
8400L:		
Calco	High	
	Wetness	1.00
	Carbonate content	0.50
	Soil reaction	0.50
8402A:		
Colo	High	
	Wetness	1.00
8451A:		
Lawson	Low	

Table 12.--Forestland Productivity

(Only the soils commonly used for production of commercial trees are listed)

Map symbol and soil name	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
17A:				
Keomah	Northern red oak	70	57	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum
	White oak	65	43	
17B2:				
Keomah	Northern red oak	70	57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak
	White oak	65	43	
25G:				
Hennepin	Northern red oak	85	72	Bur oak, eastern white pine, pecan, pin oak, tuliptree
	White oak	---	---	
27C2:				
Miami	Sweetgum	76	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	90	72	
27D2:				
Miami	Sweetgum	76	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	90	72	
61A:				
Atterberry	Bur oak	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
131A:				
Alvin	Black walnut	---	---	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
131B:				
Alvin	White oak	80	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine
	Black walnut	---	---	
	Northern red oak	80	57	
	Tuliptree	90	86	
131C:				
Alvin	White oak	80	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine
	Black walnut	---	---	
	Northern red oak	80	57	
	Tuliptree	90	86	
131D:				
Alvin	White oak	80	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine
	Black walnut	---	---	
	Northern red oak	80	57	
	Tuliptree	90	86	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
131F:				
Alvin	White oak	80	57	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine
	Black walnut	---	---	
	Northern red oak	80	57	
	Tuliptree	90	86	
134A:				
Camden	Green ash	76	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
	White oak	85	72	
134B:				
Camden	Green ash	76	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
	White oak	85	72	
134C2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	White oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
194C2:				
Morley	Black walnut	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar
	Bur oak	---	---	
	Northern red oak	80	57	
	Shagbark hickory	---	---	
	Tuliptree	90	86	
	White oak	80	57	
224D2:				
Strawn	Black walnut	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
233B2:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Green ash	---	---	
	Northern red oak	---	---	
233C2:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	---	---	
233D2:				
Birkbeck	Green ash	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	---	---	
	White oak	86	72	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
236A:				
Sabina	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak
	Black walnut	---	---	
	Northern red oak	80	57	
243A:				
St. Charles	Green ash	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	85	72	
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
243B:				
St. Charles	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
279B2:				
Rozetta	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	80	57	
	Tuliptree	90	86	
	Black walnut	---	---	
322C2:				
Russell	White oak	90	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	90	72	
	Tuliptree	96	100	
322D2:				
Russell	White oak	90	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	90	72	
	Tuliptree	96	100	
327C2:				
Fox	Northern red oak	80	57	Black oak, common hackberry, eastern white pine
	Sugar maple	---	---	
	White oak	---	---	
383B:				
Newvienna	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Northern red oak	80	57	
	Black walnut	---	---	
387A:				
Ockley	Northern red oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Sweetgum	76	72	
	Tuliptree	98	100	
	White oak	90	72	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
570A:				
Martinsville	Sweetgum	76	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Tuliptree	98	100	
	White oak	80	57	
570B:				
Martinsville	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	Northern red oak	80	57	
570C2:				
Martinsville	Sweetgum	76	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Tuliptree	98	100	
	White oak	80	57	
618C2:				
Senachwine	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Sweetgum	76	72	
	Tuliptree	98	100	
618D2:				
Senachwine	White oak	90	72	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree
	Sweetgum	76	72	
	Tuliptree	98	100	
689B:				
Coloma	Eastern white pine	85	200	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine
	Jack pine	68	100	
	Red pine	78	143	
	White oak	70	72	
689D:				
Coloma	Eastern white pine	85	200	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine
	Jack pine	68	100	
	Red pine	78	143	
	White oak	70	72	
802B:				
Orthents, loamy	---	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar
802D:				
Orthents, loamy	---	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar
883F:				
Senachwine	Shagbark hickory	---	---	Bur oak, eastern white pine, pecan, pin oak, tuliptree
	White oak	90	72	
Hennepin	Northern red oak	85	72	Bur oak, eastern white pine, pecan, pin oak, tuliptree
	White oak	---	---	
	Shagbark hickory	---	---	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
883G:				
Senachwine	Shagbark hickory	---	---	Bur oak, eastern white pine, pecan, pin oak, tuliptree
	White oak	90	72	
Hennepin	Northern red oak	85	72	Bur oak, eastern white pine, pecan, pin oak, tuliptree
	White oak	---	---	
	Shagbark hickory	---	---	
964F:				
Miami	Sweetgum	76	72	Bur oak, eastern white pine, pecan, pin oak, tuliptree
	Tuliptree	98	100	
	White oak	90	72	
Hennepin	Northern red oak	85	72	Bur oak, chinkapin oak, eastern redcedar
	White oak	---	---	
1100A:				
Palms	Black willow	---	---	Common persimmon, eastern cottonwood, pin oak, swamp white oak, sweetgum, tamarack
	Quaking aspen	56	57	
	Red maple	51	29	
	Silver maple	76	29	
	White ash	51	29	
1210L:				
Lena	Eastern cottonwood	73	---	Common persimmon, eastern cottonwood, pin oak, swamp white oak, sweetgum, tamarack
	Pin oak	65		
3092L:				
Sarpy	Eastern cottonwood	95	114	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak
	Silver maple	90	43	
3360L:				
Slacwater	Eastern cottonwood	110	157	Bur oak, common hackberry, eastern cottonwood, eastern redcedar
	Silver maple	---	---	
	Black willow	---	---	
7070A:				
Beaucoup	American sycamore	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum
	Cherrybark oak	---	---	
	Eastern cottonwood	100	129	
	Pin oak	90	72	
	Sweetgum	---	---	
8073A:				
Ross	Black cherry	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar
	Black walnut	---	---	
	Northern red oak	86	72	
	Sugar maple	85	57	
	Tuliptree	96	100	
	White ash	---	---	
	White oak	---	---	
8074A:				
Radford	Eastern cottonwood	99	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak
	Pin oak	89	---	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
8077A:				
Huntsville	American sycamore	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak
	Cherrybark oak	---	---	
	Eastern cottonwood	110	157	
	Green ash	---	---	
	Sweetgum	---	---	
	Tuliptree	98	100	
8107A:				
Sawmill	American sycamore	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum
	Cherrybark oak	---	---	
	Eastern cottonwood	---	---	
	Pin oak	90	72	
	Sweetgum	---	---	
8304A:				
Landes	American sycamore	---	---	Bur oak, eastern white pine, pecan, pin oak, tuliptree
	Eastern cottonwood	105	143	
	Green ash	---	---	
	Sweetgum	---	---	
	Tuliptree	95	100	
8368L:				
Raveenwash	Eastern cottonwood	110	157	Bur oak, common hackberry, eastern cottonwood, eastern redcedar
8400L:				
Calco	Black willow	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar
	Common hackberry	---	---	
	Eastern cottonwood	---	---	
	Green ash	---	---	
	Silver maple	94	43	
8402A:				
Colo	Eastern cottonwood	103	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum
	Pin oak	92	---	
8451A:				
Lawson	Silver maple	70	29	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak
	White ash	---	---	

Table 13a.--Recreational Development

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
	Slow water movement	0.96	Depth to saturated zone	0.94	Slow water movement	0.96
17B2:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Slow water movement	0.43	Slow water movement	0.43	Slope	0.50
					Slow water movement	0.43
25G:						
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
27C2:						
Miami	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	1.00
	Slope	0.01	Slope	0.01	Depth to saturated zone	0.39
27D2:						
Miami	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
43B:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
60C2:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
60C3:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21
61A:						
Atterberry	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
86B:						
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
91A:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
91B2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
					Slope	0.12
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
131A:						
Alvin	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.79	Too sandy	0.79	Too sandy	0.79
131B:						
Alvin	Not limited		Not limited		Somewhat limited	
					Slope	0.28
131C:						
Alvin	Not limited		Not limited		Very limited	
					Slope	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
131D:						
Alvin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
131F:						
Alvin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
134A:						
Camden	Not limited		Not limited		Not limited	
134B:						
Camden	Not limited		Not limited		Somewhat limited	
					Slope	0.28
134C2:						
Camden	Not limited		Not limited		Very limited	
					Slope	1.00
145B:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slope	0.12
					Depth to saturated zone	0.03
145B2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.50
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slow water movement	0.21
					Depth to saturated zone	0.03
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slow water movement	0.21
					Depth to saturated zone	0.03
148B:						
Proctor	Not limited		Not limited		Somewhat limited	
					Slope	0.28
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
154A:						
Flanagan	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
154B:						
Flanagan	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.50
					Slow water movement	0.21
171B:						
Catlin	Not limited		Not limited		Somewhat limited	
					Slope	0.12
171B2:						
Catlin	Not limited		Not limited		Somewhat limited	
					Slope	0.12
171C2:						
Catlin	Not limited		Not limited		Very limited	
					Slope	1.00
194C2:						
Morley	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.43	Slow water movement	0.43	Slope	1.00
					Slow water movement	0.43
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
199A:						
Plano	Not limited		Not limited		Not limited	
199B:						
Plano	Not limited		Not limited		Somewhat limited	
					Slope	0.28
223B2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.28
223C2:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
					Slow water movement	0.96
223D:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
224D2:						
Strawn-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
233B2:						
Birkbeck-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
233C2:						
Birkbeck-----------	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.28	Depth to saturated zone	0.14	Slope	1.00
					Depth to saturated zone	0.28
233D2:						
Birkbeck-----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Depth to saturated zone	0.28	Depth to saturated zone	0.14	Depth to saturated zone	0.28
236A:						
Sabina-------------	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
241C2:						
Chatsworth---------	Very limited		Very limited		Very limited	
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Slope	0.88
					Depth to saturated zone	0.16
241C3:						
Chatsworth---------	Very limited		Very limited		Very limited	
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Slope	0.88
					Depth to saturated zone	0.16
243A:						
St. Charles--------	Not limited		Not limited		Not limited	
243B:						
St. Charles--------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
279B2:						
Rozetta------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
290A:						
Warsaw-------------	Not limited		Not limited		Not limited	

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
322C2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Slope	0.01	Slope	1.00
322D2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.84	Slope	0.84	Slope	1.00
327C2:						
Fox	Not limited		Not limited		Very limited	
					Slope	1.00
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
369A:						
Waupecan	Not limited		Not limited		Not limited	
369B:						
Waupecan	Not limited		Not limited		Somewhat limited	
					Slope	0.50
375A:						
Rutland	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
375B:						
Rutland	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
375B2:						
Rutland	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.43	Slow water movement	0.43	Slow water movement	0.43
					Slope	0.28
379A:						
Dakota	Not limited		Not limited		Not limited	

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
383B:						
Newvienna----------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
387A:						
Ockley-------------	Not limited		Not limited		Not limited	
388B2:						
Wenona-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
388C2:						
Wenona-------------	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21
435A:						
Streator-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
440A:						
Jasper-------------	Not limited		Not limited		Not limited	
440B:						
Jasper-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
440C2:						
Jasper-------------	Not limited		Not limited		Very limited	
					Slope	1.00
533:						
Urban land----------	Not rated		Not rated		Not rated	
536:						
Dumps, mine---------	Not rated		Not rated		Not rated	
541B2:						
Graymont-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.50
541C2:						
Graymont-----------	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
					Slow water movement	0.96
567B:						
Elkhart------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
570A:						
Martinsville	Not limited		Not limited		Not limited	
570B:						
Martinsville	Not limited		Not limited		Somewhat limited	
					Slope	0.28
570C2:						
Martinsville	Not limited		Not limited		Very limited	
					Slope	1.00
614A:						
Chenoa	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
614B2:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
618C2:						
Senachwine	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
	Slope	0.01	Slope	0.01	Slow water movement	0.21
618D2:						
Senachwine	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
622B2:						
Wyanet	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
622C2:						
Wyanet	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21
663A:						
Clare	Not limited		Not limited		Not limited	
679A:						
Blackberry	Not limited		Not limited		Not limited	
679B:						
Blackberry	Not limited		Not limited		Somewhat limited	
					Slope	0.28

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
689B:						
Coloma	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
					Slope	0.50
689D:						
Coloma	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00
	Slope	0.37	Slope	0.37	Too sandy	1.00
705B:						
Buckhart	Not limited		Not limited		Somewhat limited	
					Slope	0.28
712A:						
Spaulding	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
715A:						
Arrowsmith	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
721A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.50
					Slow water movement	0.21
802D:						
Orthents, loamy	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
835G:						
Earthen dam	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
883F:						
Senachwine	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
883F:						
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
883G:						
Senachwine	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
964F:						
Miami	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
1100A:						
Palms	Not rated		Not rated		Not rated	
1210L:						
Lena	Not rated		Not rated		Not rated	
3092L:						
Sarpy	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Too sandy	0.50	Flooding	1.00
	Too sandy	0.50	Flooding	0.40	Too sandy	0.50
3360L:						
Slacwater	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	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
7070A:						
Beaucoup	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	Slow water movement	0.21	Slow water movement	0.21
	Slow water movement	0.21				
8073A:						
Ross	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8074A:						
Radford	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.48	Depth to saturated zone	0.81
	Depth to saturated zone	0.81			Flooding	0.60
8077A:						
Huntsville	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
8107A:						
Sawmill	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			Flooding	0.60
8304A:						
Landes	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
8368L:						
Raveenwash	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98			Flooding	0.60
8400L:						
Calco	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	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
8402A:						
Colo	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	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
8451A:						
Lawson	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98			Flooding	0.60

Table 13b.--Recreational Development

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
17B2:						
Keomah	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
25G:						
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep	1.00
27C2:						
Miami	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
					Slope	0.01
27D2:						
Miami	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
					Depth to saturated zone	0.19
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
43B:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
60C2:						
La Rose	Not limited		Not limited		Not limited	
60C3:						
La Rose	Not limited		Not limited		Not limited	
61A:						
Atterberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
86B:						
Osco	Not limited		Not limited		Not limited	
91A:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
91B2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
125A:						
Selma	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
131A:						
Alvin	Somewhat limited		Somewhat limited		Not limited	
	Too sandy	0.79	Too sandy	0.79		
131B:						
Alvin	Not limited		Not limited		Not limited	
131C:						
Alvin	Not limited		Not limited		Not limited	
131D:						
Alvin	Not limited		Not limited		Somewhat limited	
					Slope	0.96
131F:						
Alvin	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.02	Too steep	1.00
134A:						
Camden	Not limited		Not limited		Not limited	
134B:						
Camden	Not limited		Not limited		Not limited	
134C2:						
Camden	Not limited		Not limited		Not limited	
145B:						
Saybrook	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
145B2:						
Saybrook------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
145C2:						
Saybrook------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
148B:						
Proctor-------------	Not limited		Not limited		Not limited	
152A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
154A:						
Flanagan------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
154B:						
Flanagan------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
171B:						
Catlin--------------	Not limited		Not limited		Not limited	
171B2:						
Catlin--------------	Not limited		Not limited		Not limited	
171C2:						
Catlin--------------	Not limited		Not limited		Not limited	
194C2:						
Morley--------------	Not limited		Not limited		Not limited	
198A:						
Elburn--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
199A:						
Plano---------------	Not limited		Not limited		Not limited	
199B:						
Plano---------------	Not limited		Not limited		Not limited	
223B2:						
Varna---------------	Not limited		Not limited		Not limited	
223C2:						
Varna---------------	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
223D:						
Varna	Not limited		Not limited		Somewhat limited	
					Slope	0.96
224D2:						
Strawn	Not limited		Not limited		Somewhat limited	
					Slope	0.96
233B2:						
Birkbeck	Not limited		Not limited		Not limited	
233C2:						
Birkbeck	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.14
233D2:						
Birkbeck	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
					Depth to saturated zone	0.14
236A:						
Sabina	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
241C2:						
Chatsworth	Not limited		Not limited		Somewhat limited	
					Droughty	0.83
					Depth to saturated zone	0.08
241C3:						
Chatsworth	Very limited		Very limited		Very limited	
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
					Droughty	0.97
					Depth to saturated zone	0.08
243A:						
St. Charles	Not limited		Not limited		Not limited	
243B:						
St. Charles	Not limited		Not limited		Not limited	
279B2:						
Rozetta	Not limited		Not limited		Not limited	
290A:						
Warsaw	Not limited		Not limited		Not limited	
322C2:						
Russell	Not limited		Not limited		Somewhat limited	
					Slope	0.01
322D2:						
Russell	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.84

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
327C2:						
Fox	Not limited		Not limited		Not limited	
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
369A:						
Waupecan	Not limited		Not limited		Not limited	
369B:						
Waupecan	Not limited		Not limited		Not limited	
375A:						
Rutland	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
375B:						
Rutland	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
375B2:						
Rutland	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
379A:						
Dakota	Not limited		Not limited		Not limited	
383B:						
Newvienna	Not limited		Not limited		Not limited	
387A:						
Ockley	Not limited		Not limited		Not limited	
388B2:						
Wenona	Not limited		Not limited		Not limited	
388C2:						
Wenona	Not limited		Not limited		Not limited	
435A:						
Streator	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
440A:						
Jasper	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
440B:						
Jasper	Not limited		Not limited		Not limited	
440C2:						
Jasper	Not limited		Not limited		Not limited	
533:						
Urban land	Not rated		Not rated		Not rated	
536:						
Dumps, mine	Not rated		Not rated		Not rated	
541B2:						
Graymont	Not limited		Not limited		Not limited	
541C2:						
Graymont	Not limited		Not limited		Not limited	
567B:						
Elkhart	Not limited		Not limited		Not limited	
570A:						
Martinsville	Not limited		Not limited		Not limited	
570B:						
Martinsville	Not limited		Not limited		Not limited	
570C2:						
Martinsville	Not limited		Not limited		Not limited	
614A:						
Chenoa	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
614B2:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
618C2:						
Senachwine	Not limited		Not limited		Somewhat limited	
					Slope	0.01
618D2:						
Senachwine	Not limited		Not limited		Somewhat limited	
					Slope	0.96
622B2:						
Wyanet	Not limited		Not limited		Not limited	
622C2:						
Wyanet	Not limited		Not limited		Not limited	
663A:						
Clare	Not limited		Not limited		Not limited	
679A:						
Blackberry	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
679B:						
Blackberry----------	Not limited		Not limited		Not limited	
689B:						
Coloma--------------	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	0.50
					Droughty	0.19
689D:						
Coloma--------------	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	0.50
					Slope	0.37
					Droughty	0.12
705B:						
Buckhart------------	Not limited		Not limited		Not limited	
712A:						
Spaulding-----------	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
715A:						
Arrowsmith----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
721A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
802B:						
Orthents, loamy-----	Not limited		Not limited		Not limited	
802D:						
Orthents, loamy-----	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.37
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
883F:						
Senachwine----------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.04	Too steep	1.00
Hennepin------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.04	Too steep	1.00

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
883G:						
Senachwine	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep	1.00
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep	1.00
964F:						
Miami	Somewhat limited		Not limited		Very limited	
	Slope	0.98			Too steep	1.00
					Depth to saturated zone	0.19
Hennepin	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Too steep	1.00
	Slope	1.00	Slope	0.04	Too dense	1.00
1100A:						
Palms	Not rated		Not rated		Not rated	
1210L:						
Lena	Not rated		Not rated		Not rated	
3092L:						
Sarpy	Somewhat limited		Somewhat limited		Very limited	
	Too sandy	0.50	Too sandy	0.50	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Droughty	0.69
3360L:						
Slacwater	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00
7070A:						
Beaucoup	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
8073A:						
Ross	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8074A:						
Radford	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.11	Depth to saturated zone	0.11	Flooding	0.60
					Depth to saturated zone	0.48
8077A:						
Huntsville	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8107A:						
Sawmill	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

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
8304A:						
Landes	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8368L:						
Raveenwash	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
8400L:						
Calco	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8402A:						
Colo	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8451A:						
Lawson	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60

Table 14.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
17A: Keomah	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
17B2: Keomah	Fair	Good	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
25G: Hennepin	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
27C2: Miami	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
27D2: Miami	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
43A: Ipava	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
43B: Ipava	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
60C2: La Rose	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
60C3: La Rose	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
61A: Atterberry	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
67A: Harpster	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
68A: Sable	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
86B: Osco	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
91A: Swygert	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
91B2: Swygert	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
125A: Selma	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
131A:										
Alvin	Poor	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Very poor
131B:										
Alvin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
131C:										
Alvin	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
131D:										
Alvin	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
131F:										
Alvin	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
134A:										
Camden	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
134B:										
Camden	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
134C2:										
Camden	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
145B:										
Saybrook	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
145B2:										
Saybrook	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
145C2:										
Saybrook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
148B:										
Proctor	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
152A:										
Drummer	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
154A:										
Flanagan	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
154B:										
Flanagan	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
171B:										
Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
171B2: Catlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
171C2: Catlin	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
194C2: Morley	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
198A: Elburn	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
199A: Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
199B: Plano	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
223B2: Varna	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
223C2: Varna	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
223D: Varna	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
224D2: Strawn	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
233B2: Birkbeck	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
233C2: Birkbeck	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
233D2: Birkbeck	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
236A: Sabina	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
241C2: Chatsworth	Poor	Fair	Fair	Poor	Poor	Poor	Very poor	Fair	Poor	Very poor
241C3: Chatsworth	Poor	Fair	Fair	Poor	Poor	Poor	Very poor	Fair	Poor	Very poor

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
243A:										
St. Charles	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
243B:										
St. Charles	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
279B2:										
Rozetta	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
290A:										
Warsaw	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
322C2:										
Russell	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
322D2:										
Russell	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
327C2:										
Fox	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
330A:										
Peotone	Very poor	Poor	Poor	Poor	Very poor	Good	Good	Poor	Poor	Good
356A:										
Elpaso	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
369A:										
Waupecan	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
369B:										
Waupecan	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
375A:										
Rutland	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
375B:										
Rutland	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
375B2:										
Rutland	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
379A:										
Dakota	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
383B:										
Newvienna	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
387A:										
Ockley------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
388B2:										
Wenona------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
388C2:										
Wenona------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
435A:										
Streator----------	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
440A:										
Jasper------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
440B:										
Jasper------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
440C2:										
Jasper------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
533.										
Urban land										
536.										
Dumps, mine										
541B2:										
Graymont----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
541C2:										
Graymont----------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
567B:										
Elkhart-----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570A:										
Martinsville------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570B:										
Martinsville------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570C2:										
Martinsville------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
614A:										
Chenoa------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
614B2:										
Chenoa	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
618C2:										
Senachwine	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
618D2:										
Senachwine	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
622B2:										
Wyanet	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
622C2:										
Wyanet	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
663A:										
Clare	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
679A:										
Blackberry	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
679B:										
Blackberry	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
689B:										
Coloma	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
689D:										
Coloma	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
705B:										
Buckhart	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
712A:										
Spaulding	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
715A:										
Arrowsmith	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
721A:										
Drummer	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
Elpaso	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
802B:										
Orthents, loamy	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
802D:										
Orthents, loamy	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
835G. Earthen dam										
865. Pits, gravel										
883F:										
Senachwine	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Hennepin	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
883G:										
Senachwine	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Hennepin	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
964F:										
Miami	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Hennepin	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
1100A:										
Palms	Very poor	Poor	Poor	Poor	Very poor	Good	Good	Poor	Poor	Good
1210L:										
Lena	Very poor	Poor	Poor	Poor	Very poor	Good	Good	Poor	Poor	Good
3092L:										
Sarpy	Poor	Poor	Fair	Poor	Very poor	Poor	Very poor	Poor	Poor	Very poor
3360L:										
Slacwater	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
7070A:										
Beaucoup	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
8073A:										
Ross	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8074A:										
Radford	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8077A:										
Huntsville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8107A:										
Sawmill	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
8304A:										
Landes------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8368L:										
Raveenwash--------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8400L:										
Calco-------------	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
8402A:										
Colo--------------	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
8451A:										
Lawson------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 15a.--Building Site Development

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00			Shrink-swell	1.00
17B2:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
25G:						
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
27C2:						
Miami	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.39	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.01	Slope	0.01	Depth to saturated zone	0.39
27D2:						
Miami	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	0.96	Shrink-swell	0.50
	Depth to saturated zone	0.39			Depth to saturated zone	0.39
43A:						
Ipava	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
43B:						
Ipava	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
60C2:						
La Rose	Not limited		Not limited		Somewhat limited	
					Slope	0.97
60C3:						
La Rose	Not limited		Not limited		Somewhat limited	
					Slope	0.97
61A:						
Atterberry	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
67A:						
Harpster------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
68A:						
Sable---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86B:						
Osco----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
91A:						
Swygert-------------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
91B2:						
Swygert-------------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
125A:						
Selma---------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
131A:						
Alvin---------------	Not limited		Not limited		Not limited	
131B:						
Alvin---------------	Not limited		Not limited		Not limited	
131C:						
Alvin---------------	Not limited		Not limited		Somewhat limited	
					Slope	0.97
131D:						
Alvin---------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
131F:						
Alvin---------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
134A:						
Camden--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
134B:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
134C2:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
145B:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03			Depth to saturated zone	0.03
145B2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03			Depth to saturated zone	0.03
145C2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.97
	Depth to saturated zone	0.03			Shrink-swell	0.50
					Depth to saturated zone	0.03
148B:						
Proctor	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
154A:						
Flanagan	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98			Depth to saturated zone	0.98
154B:						
Flanagan	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
171B:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
171B2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
171C2:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
			Shrink-swell	0.50	Shrink-swell	0.50
194C2:						
Morley	Very limited		Somewhat limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	0.99	Shrink-swell	1.00
			Shrink-swell	0.50	Slope	0.97
198A:						
Elburn	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199A:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199B:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.27	Shrink-swell	0.27	Shrink-swell	0.27
223B2:						
Varna	Very limited		Somewhat limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	0.99	Shrink-swell	1.00
			Shrink-swell	0.50		
223C2:						
Varna	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to saturated zone	0.99	Slope	0.97
223D:						
Varna	Very limited		Somewhat limited		Very limited	
	Shrink-swell	1.00	Slope	0.96	Slope	1.00
	Slope	0.96	Shrink-swell	0.50	Shrink-swell	1.00
224D2:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
233B2:						
Birkbeck	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
233C2:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.97
	Depth to saturated zone	0.28	Shrink-swell	0.50	Shrink-swell	0.50
					Depth to saturated zone	0.28

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
233D2:						
Birkbeck	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	0.96	Shrink-swell	0.50
	Depth to saturated zone	0.28	Shrink-swell	0.50	Depth to saturated zone	0.28
236A:						
Sabina	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
241C2:						
Chatsworth	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16	Shrink-swell	0.50	Depth to saturated zone	0.16
					Slope	0.12
241C3:						
Chatsworth	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16	Shrink-swell	0.50	Depth to saturated zone	0.16
					Slope	0.12
243A:						
St. Charles	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
243B:						
St. Charles	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
279B2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
290A:						
Warsaw	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
322C2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.01	Slope	0.01	Shrink-swell	0.50
322D2:						
Russell	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.84	Slope	0.84	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
327C2:						
Fox	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
369A:						
Waupecan	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
369B:						
Waupecan	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
375A:						
Rutland	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
375B:						
Rutland	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
375B2:						
Rutland	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
379A:						
Dakota	Not limited		Not limited		Not limited	
383B:						
Newvienna	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
			Shrink-swell	0.50		
387A:						
Ockley	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
388B2:						
Wenona	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to saturated zone	0.99		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	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
388C2:						
Wenona--------------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to saturated zone	0.99	Slope	0.97
435A:						
Streator------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
440A:						
Jasper--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
440B:						
Jasper--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
440C2:						
Jasper--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
533:						
Urban land----------	Not rated		Not rated		Not rated	
536:						
Dumps, mine---------	Not rated		Not rated		Not rated	
541B2:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
541C2:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
					Shrink-swell	0.50
			Shrink-swell	0.50		
567B:						
Elkhart-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
570A:						
Martinsville--------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
570B:						
Martinsville--------	Not limited		Not limited		Not limited	
570C2:						
Martinsville--------	Not limited		Not limited		Somewhat limited	
					Slope	0.97

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
614A:						
Chenoa	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
614B2:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
618C2:						
Senachwine	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Slope	0.01	Slope	1.00
618D2:						
Senachwine	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
622B2:						
Wyanet	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
622C2:						
Wyanet	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
663A:						
Clare	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
679A:						
Blackberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
679B:						
Blackberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
689B:						
Coloma	Not limited		Not limited		Not limited	
689D:						
Coloma	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
705B:						
Buckhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
712A:						
Spaulding-----------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
715A:						
Arrowsmith----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50			Shrink-swell	0.50
721A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47		
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.37	Depth to saturated zone	0.47	Shrink-swell	0.50
			Slope	0.37		
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
883F:						
Senachwine----------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Hennepin------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
883G:						
Senachwine----------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
Hennepin------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
964F:						
Miami	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39			Depth to saturated zone	0.39
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Slope	1.00
1100A:						
Palms	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
	Organic matter content	1.00			Organic matter content	1.00
1210L:						
Lena	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
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
3092L:						
Sarpy	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
3360L:						
Slacwater	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
	Ponding	1.00	Ponding	1.00	Ponding	1.00
7070A:						
Beaucoup	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
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8073A:						
Ross	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
8074A:						
Radford	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.81	Depth to saturated zone	1.00	Depth to saturated zone	0.81
			Shrink-swell	0.50		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
8077A:						
Huntsville	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.05		
8107A:						
Sawmill	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
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8304A:						
Landes	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
8368L:						
Raveenwash	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
8400L:						
Calco	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
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8402A:						
Colo	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
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98

Table 15b.--Building Site Development

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
17B2:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
25G:						
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Frost action	0.50	Cutbanks cave	0.10		
27C2:						
Miami	Somewhat limited		Very limited		Somewhat limited	
	Low strength	0.78	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Frost action	0.50	Cutbanks cave	0.10	Slope	0.01
	Depth to saturated zone	0.19	Slope	0.01		
	Slope	0.01				
27D2:						
Miami	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.19
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to saturated zone	0.19				
43A:						
Ipava	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
43B:						
Ipava	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
60C2:						
La Rose-------------	Somewhat limited		Somewhat limited		Not limited	
	Frost action	0.50	Cutbanks cave	0.10		
60C3:						
La Rose-------------	Somewhat limited		Somewhat limited		Not limited	
	Frost action	0.50	Cutbanks cave	0.10		
61A:						
Atterberry----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
67A:						
Harpster------------	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
68A:						
Sable---------------	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
86B:						
Osco----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
91A:						
Swygert-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
91B2:						
Swygert-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
125A:						
Selma	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
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
131A:						
Alvin	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
131B:						
Alvin	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
131C:						
Alvin	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
131D:						
Alvin	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.96	Cutbanks cave	1.00	Slope	0.96
	Frost action	0.50	Slope	0.96		
131F:						
Alvin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Frost action	0.50	Cutbanks cave	1.00		
134A:						
Camden	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
134B:						
Camden	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
134C2:						
Camden	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
145B:						
Saybrook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	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
145B2:						
Saybrook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				
145C2:						
Saybrook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				
148B:						
Proctor	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
152A:						
Drummer	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
154A:						
Flanagan	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
154B:						
Flanagan	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
171B:						
Catlin	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
171B2:						
Catlin	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
171C2:						
Catlin---------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
194C2:						
Morley---------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Frost action	0.50				
198A:						
Elburn---------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
199A:						
Plano----------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
199B:						
Plano----------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.27				
223B2:						
Varna----------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	1.00	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
223C2:						
Varna----------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	1.00	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
223D:						
Varna----------------	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Shrink-swell	1.00	Dense layer	0.50		
	Slope	0.96	Cutbanks cave	0.10		
	Frost action	0.50				
224D2:						
Strawn---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Frost action	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
233B2:						
Birkbeck------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
233C2:						
Birkbeck------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.14
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.14				
233D2:						
Birkbeck------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96	Depth to saturated zone	0.14
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.14				
236A:						
Sabina--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
241C2:						
Chatsworth----------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Droughty	0.83
	Shrink-swell	0.50	Dense layer	0.50	Depth to saturated zone	0.08
	Frost action	0.50	Too clayey	0.32		
	Depth to saturated zone	0.08	Cutbanks cave	0.10		
241C3:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Low strength	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Shrink-swell	0.50	Dense layer	0.50	Droughty	0.97
	Frost action	0.50	Cutbanks cave	0.10	Depth to saturated zone	0.08
	Depth to saturated zone	0.08	Too clayey	0.02		
243A:						
St. Charles---------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
243B:						
St. Charles---------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
279B2:						
Rozetta-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
290A:						
Warsaw--------------	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
322C2:						
Russell-------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	0.10	Slope	0.01
	Low strength	1.00	Slope	0.01		
	Shrink-swell	0.50				
	Slope	0.01				
322D2:						
Russell-------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.84	Slope	0.84
	Low strength	1.00	Cutbanks cave	0.10		
	Slope	0.84				
	Shrink-swell	0.50				
327C2:						
Fox-----------------	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
330A:						
Peotone-------------	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00	Too clayey	0.02		
	Ponding	1.00				
356A:						
Elpaso--------------	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
369A:						
Waupecan------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
369B:						
Waupecan------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
375A:						
Rutland----------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.72		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
375B:						
Rutland----------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.55		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
375B2:						
Rutland----------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.55		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
379A:						
Dakota-----------------	Somewhat limited		Very limited		Not limited	
	Low strength	0.78	Cutbanks cave	1.00		
	Frost action	0.50				
383B:						
Newvienna--------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.95		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
387A:						
Ockley-----------------	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
388B2:						
Wenona-----------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	1.00	Too clayey	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
388C2:						
Wenona-----------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	1.00	Too clayey	0.50		
	Frost action	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
435A:						
Streator------------	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
	Frost action	1.00	Too clayey	0.82		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
440A:						
Jasper--------------	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
440B:						
Jasper--------------	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
440C2:						
Jasper--------------	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
533:						
Urban land----------	Not rated		Not rated		Not rated	
536:						
Dumps, mine---------	Not rated		Not rated		Not rated	
541B2:						
Graymont------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
541C2:						
Graymont------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
567B:						
Elkhart-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
570A:						
Martinsville--------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
570B:						
Martinsville--------	Somewhat limited		Somewhat limited		Not limited	
	Frost action	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
570C2:						
Martinsville	Somewhat limited		Somewhat limited		Not limited	
	Frost action	0.50	Cutbanks cave	0.10		
614A:						
Chenoa	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Frost action	0.50				
614B2:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Frost action	0.50				
618C2:						
Senachwine	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.78	Cutbanks cave	0.10	Slope	0.01
	Frost action	0.50	Slope	0.01		
	Slope	0.01				
618D2:						
Senachwine	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
622B2:						
Wyanet	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
622C2:						
Wyanet	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
663A:						
Clare	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
679A:						
Blackberry	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	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
679B:						
Blackberry----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
689B:						
Coloma--------------	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Too sandy	0.50
					Droughty	0.19
689D:						
Coloma--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.37	Cutbanks cave	1.00	Too sandy	0.50
			Slope	0.37	Slope	0.37
					Droughty	0.12
705B:						
Buckhart------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
712A:						
Spaulding-----------	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
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
715A:						
Arrowsmith----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
721A:						
Drummer-------------	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
Elpaso--------------	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
802B:						
Orthents, loamy-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.47		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
802D:						
Orthents, loamy-----	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	0.47	Slope	0.37
	Shrink-swell	0.50	Slope	0.37		
	Frost action	0.50	Cutbanks cave	0.10		
	Slope	0.37				
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
883F:						
Senachwine----------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
Hennepin------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Frost action	0.50	Cutbanks cave	0.10		
883G:						
Senachwine----------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
Hennepin------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Frost action	0.50	Cutbanks cave	0.10		
964F:						
Miami---------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to saturated zone	0.19				
Hennepin------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Frost action	0.50	Cutbanks cave	0.10	Too dense	1.00

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1100A:						
Palms---------------	Very limited		Very limited		Not rated	
	Ponding	1.00	Ponding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Frost action	1.00	Organic matter content	1.00		
1210L:						
Lena----------------	Very limited		Very limited		Not rated	
	Ponding	1.00	Ponding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Frost action	1.00	Organic matter content	1.00		
	Flooding	1.00	Flooding	0.80		
3092L:						
Sarpy---------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
			Flooding	0.80	Droughty	0.69
3360L:						
Slacwater-----------	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	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
7070A:						
Beaucoup------------	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
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
8073A:						
Ross----------------	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	0.78	Cutbanks cave	0.10		
	Frost action	0.50				
8074A:						
Radford-------------	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	0.48
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.48				
8077A:						
Huntsville----------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00	Depth to saturated zone	0.05		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	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
8107A:						
Sawmill	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
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
8304A:						
Landes	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
8368L:						
Raveenwash	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
8400L:						
Calco	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	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8402A:						
Colo	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	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8451A:						
Lawson	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				

Table 16a.--Sanitary Facilities

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:				
Keomah	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
17B2:				
Keomah	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
			Slope	0.32
25G:				
Hennepin	Very limited		Very limited	
	Too steep	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
27C2:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.75
	Slope	0.01	Seepage	0.53
27D2:				
Miami	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.75
	Slope	0.96	Seepage	0.53
43A:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
43B:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
			Slope	0.18

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
60C2:				
La Rose	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
60C3:				
La Rose	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
61A:				
Atterberry	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
67A:				
Harpster	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
68A:				
Sable	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
86B:				
Osco	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
91A:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
91B2:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
125A:				
Selma	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		
131A:				
Alvin	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
131B:				
Alvin	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
131C:				
Alvin	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	1.00
131D:				
Alvin	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
			Seepage	1.00
	Slope	0.96		
131F:				
Alvin	Very limited		Very limited	
	Too steep	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
134A:				
Camden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
134B:				
Camden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
134C2:				
Camden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	1.00
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
145B:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.36
			Slope	0.08
145B2:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.36
			Slope	0.32
145C2:				
Saybrook	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
			Depth to saturated zone	0.36
148B:				
Proctor	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.18
152A:				
Drummer	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
154A:				
Flanagan	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
154B:				
Flanagan	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
			Slope	0.32
171B:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.08
			Slope	0.08

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
171B2:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.08
			Slope	0.08
171C2:				
Catlin	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
			Depth to saturated zone	0.08
194C2:				
Morley	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.08
198A:				
Elburn	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		
199A:				
Plano	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
199B:				
Plano	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.18
223B2:				
Varna	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.18
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
223C2:				
Varna	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.04

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
223D:				
Varna	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Slope	0.96		
224D2:				
Strawn	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.96		
233B2:				
Birkbeck	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Depth to saturated zone	0.19
	Slow water movement	1.00		
			Slope	0.18
233C2:				
Birkbeck	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Depth to saturated zone	0.68
	Slow water movement	1.00		
			Seepage	0.53
233D2:				
Birkbeck	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Depth to saturated zone	0.68
	Slow water movement	1.00		
			Seepage	0.53
	Slope	0.96		
236A:				
Sabina	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
241C2:				
Chatsworth	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
			Depth to saturated zone	0.56
	Depth to saturated zone	1.00		
241C3:				
Chatsworth	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
			Depth to saturated zone	0.56
	Depth to saturated zone	1.00		
243A:				
St. Charles	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
243B:				
St. Charles	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
279B2:				
Rozetta	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
290A:				
Warsaw	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
322C2:				
Russell	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.01		
322D2:				
Russell	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.84		
327C2:				
Fox	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	1.00
	Slow water movement	0.46		
330A:				
Peotone	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00		
356A:				
Elpaso	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
			Seepage	0.53
	Ponding	1.00		
369A:				
Waupecan	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
369B:				
Waupecan------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.32
	Slow water movement	0.46		
375A:				
Rutland-------------	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
375B:				
Rutland-------------	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.18
375B2:				
Rutland-------------	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.18
379A:				
Dakota--------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
383B:				
Newvienna-----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
387A:				
Ockley--------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
388B2:				
Wenona--------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.18
			Depth to saturated zone	0.04
	Depth to saturated zone	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
388C2:				
Wenona	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
435A:				
Streator	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	Seepage	0.53
440A:				
Jasper	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
440B:				
Jasper	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
440C2:				
Jasper	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
			Seepage	1.00
	Slow water movement	0.46		
533:				
Urban land	Not rated		Not rated	
536:				
Dumps, mine	Not rated		Not rated	
541B2:				
Graymont	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.32
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
541C2:				
Graymont	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.19

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
567B:				
Elkhart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
570A:				
Martinsville	Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	0.53
	Slow water movement	0.46		
570B:				
Martinsville	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
570C2:				
Martinsville	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
			Seepage	1.00
	Slow water movement	0.46		
614A:				
Chenoa	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
614B2:				
Chenoa	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.18
618C2:				
Senachwine	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.01		
618D2:				
Senachwine	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.96		
622B2:				
Wyanet	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.18

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
622C2:				
Wyanet	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
663A:				
Clare	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
679A:				
Blackberry	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
679B:				
Blackberry	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
689B:				
Coloma	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Filtering capacity	1.00	Slope	0.32
689D:				
Coloma	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Slope	0.37		
705B:				
Buckhart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
712A:				
Spaulding	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
715A:				
Arrowsmith----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
721A:				
Drummer-------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
Elpaso--------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
			Seepage	0.53
	Ponding	1.00		
802B:				
Orthents, loamy-----	Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.94	Depth to saturated zone	0.40
	Slow water movement	0.78	Slope	0.32
			Seepage	0.21
802D:				
Orthents, loamy-----	Somewhat limited		Very limited	
	Depth to saturated zone	0.94	Slope	1.00
			Depth to saturated zone	0.40
	Slow water movement	0.78		
			Seepage	0.21
	Slope	0.37		
835G:				
Earthen dam---------	Not rated		Not rated	
865:				
Pits, gravel--------	Not rated		Not rated	
883F:				
Senachwine----------	Very limited		Very limited	
	Too steep	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
Hennepin------------	Very limited		Very limited	
	Too steep	1.00	Slope	1.00
	Slow water movement	1.00		
883G:				
Senachwine----------	Very limited		Very limited	
	Too steep	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
883G:				
Hennepin------------	Very limited		Very limited	
	Too steep	1.00	Slope	1.00
	Slow water movement	1.00		
964F:				
Miami---------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Too steep	1.00	Depth to saturated zone	0.75
	Slow water movement	1.00	Seepage	0.53
Hennepin------------	Very limited		Very limited	
	Too steep	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
1100A:				
Palms---------------	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.72	Seepage	1.00
			Organic matter content	1.00
1210L:				
Lena----------------	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Organic matter content	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Depth to saturated zone	1.00
3092L:				
Sarpy---------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Filtering capacity	1.00	Seepage	1.00
	Seepage, bottom layer	1.00		
3360L:				
Slacwater-----------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
7070A:				
Beaucoup	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Flooding	0.40
	Flooding	0.40		
8073A:				
Ross	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Slow water movement	0.46	Seepage	0.53
8074A:				
Radford	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
8077A:				
Huntsville	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Slow water movement	0.46	Seepage	0.53
	Depth to saturated zone	0.12		
8107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
8304A:				
Landes	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
8368L:				
Raveenwash	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8400L:				
Calco	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
8402A:				
Colo	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
8451A:				
Lawson	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53

Table 16b.--Sanitary Facilities

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
17B2:						
Keomah	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
25G:						
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
27C2:						
Miami	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Slope	0.01	Slope	0.01	Slope	0.01
27D2:						
Miami	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.75	Depth to saturated zone	0.86
43A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
43B:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
	Too clayey	0.50			Depth to saturated zone	1.00
					Too clayey	0.50
60C2:						
La Rose	Not limited		Not limited		Not limited	
60C3:						
La Rose	Not limited		Not limited		Not limited	
61A:						
Atterberry	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	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
67A:						
Harpster------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
68A:						
Sable---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
86B:						
Osco----------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
91A:						
Swygert-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
91B2:						
Swygert-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
125A:						
Selma---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Seepage	0.52
131A:						
Alvin---------------	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
	Too sandy	0.50			Too sandy	0.50
131B:						
Alvin---------------	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
131C:						
Alvin---------------	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
	Too sandy	0.50			Too sandy	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	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
131D:						
Alvin---------------	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Seepage	0.52
	Too sandy	0.50			Too sandy	0.50
131F:						
Alvin---------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
	Too sandy	0.50			Too sandy	0.50
134A:						
Camden--------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
134B:						
Camden--------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
					Seepage	0.22
134C2:						
Camden--------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too sandy	0.50
	Too sandy	0.50			Too clayey	0.50
					Seepage	0.22
145B:						
Saybrook------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
145B2:						
Saybrook------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
145C2:						
Saybrook------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
148B:						
Proctor-------------	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.22
152A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
154A:						
Flanagan------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
154B:						
Flanagan------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
171B:						
Catlin--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
					Depth to saturated zone	0.32
171B2:						
Catlin--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
171C2:						
Catlin--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
194C2:						
Morley--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
198A:						
Elburn--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
199A:						
Plano---------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
199B:						
Plano---------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
223B2:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
223C2:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
223D:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
224D2:						
Strawn--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
233B2:						
Birkbeck------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
233C2:						
Birkbeck------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.68	Depth to saturated zone	0.82
	Too clayey	0.50			Too clayey	0.50
233D2:						
Birkbeck------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.68	Depth to saturated zone	0.82
	Too clayey	0.50			Too clayey	0.50
236A:						
Sabina--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Hard to compact	1.00
					Too clayey	0.50
241C2:						
Chatsworth----------	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Depth to saturated zone	0.56	Too clayey	1.00
	Depth to saturated zone	0.98			Hard to compact	1.00
					Depth to saturated zone	0.76
241C3:						
Chatsworth----------	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Depth to saturated zone	0.56	Too clayey	1.00
	Depth to saturated zone	0.98			Hard to compact	1.00
					Depth to saturated zone	0.76
243A:						
St. Charles---------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
243B:						
St. Charles---------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
279B2:						
Rozetta-------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
290A:						
Warsaw--------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50			Too sandy	0.50
					Gravel content	0.09
322C2:						
Russell-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Too clayey	0.50	Slope	0.01	Too clayey	0.50
	Slope	0.01			Slope	0.01
322D2:						
Russell-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.84	Slope	0.84	Slope	0.84
	Too clayey	0.50			Too clayey	0.50
327C2:						
Fox-----------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
					Gravel content	1.00
330A:						
Peotone-------------	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	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
356A:						
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
369A:						
Waupecan------------	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50				
369B:						
Waupecan------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	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
375A:						
Rutland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
375B:						
Rutland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
375B2:						
Rutland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
	Too clayey	0.50			Depth to saturated zone	1.00
					Too clayey	0.50
379A:						
Dakota	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
383B:						
Newvienna	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.11
387A:						
Ockley	Very limited		Not limited		Not limited	
	Seepage, bottom layer	1.00				
388B2:						
Wenona	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Hard to compact	1.00
	Too clayey	0.50			Too clayey	0.50
					Depth to saturated zone	0.24
388C2:						
Wenona	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Hard to compact	1.00
	Too clayey	0.50			Too clayey	0.50
					Depth to saturated zone	0.24
435A:						
Streator	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
440A:						
Jasper	Very limited		Not limited		Not limited	
	Seepage, bottom layer	1.00				
440B:						
Jasper	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
440C2:						
Jasper	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
533:						
Urban land	Not rated		Not rated		Not rated	
536:						
Dumps, mine	Not rated		Not rated		Not rated	
541B2:						
Graymont	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
541C2:						
Graymont	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
567B:						
Elkhart	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
570A:						
Martinsville	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
570B:						
Martinsville	Very limited		Not limited		Not limited	
	Seepage, bottom layer	1.00				
570C2:						
Martinsville	Very limited		Not limited		Not limited	
	Seepage, bottom layer	1.00				
614A:						
Chenoa	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
614B2:						
Chenoa--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
618C2:						
Senachwine----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.01	Slope	0.01	Slope	0.01
618D2:						
Senachwine----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
622B2:						
Wyanet--------------	Not limited		Not limited		Not limited	
622C2:						
Wyanet--------------	Not limited		Not limited		Not limited	
663A:						
Clare---------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.47
679A:						
Blackberry----------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
679B:						
Blackberry----------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
689B:						
Coloma--------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
689D:						
Coloma--------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00	Slope	0.37	Seepage	1.00
	Slope	0.37			Slope	0.37
705B:						
Buckhart------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	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
712A:						
Spaulding-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
715A:						
Arrowsmith----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
721A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
802B:						
Orthents, loamy-----	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
802D:						
Orthents, loamy-----	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50	Slope	0.37	Slope	0.37
	Slope	0.37				
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
883F:						
Senachwine----------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
Hennepin------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
883G:						
Senachwine----------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
Hennepin------------	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
964F:						
Miami	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
Hennepin	Very limited		Very limited		Very limited	
	Too steep	1.00	Too steep	1.00	Too steep	1.00
1100A:						
Palms	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Seepage	1.00	Organic matter content	1.00
					Seepage	0.16
1210L:						
Lena	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	Organic matter content	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.52
	Organic matter content	1.00				
3092L:						
Sarpy	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Too sandy	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00				
3360L:						
Slacwater	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	Ponding	1.00
	Ponding	1.00	Ponding	1.00		
7070A:						
Beaucoup	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50	Flooding	0.40	Too clayey	0.50
	Flooding	0.40				
8073A:						
Ross	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
8074A:						
Radford	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.96
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
8077A:						
Huntsville----------	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
8107A:						
Sawmill-------------	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	0.50
	Too clayey	0.50				
8304A:						
Landes--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Too sandy	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00				
8368L:						
Raveenwash----------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Seepage	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00		
8400L:						
Calco---------------	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	Hard to compact	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
8402A:						
Colo----------------	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	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
8451A:						
Lawson--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		

Table 17a.--Construction Materials

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value column 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. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
17A:		
Keomah	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
17B2:		
Keomah	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
25G:		
Hennepin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
27C2:		
Miami	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
27D2:		
Miami	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
43A:		
Ipava	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
43B:		
Ipava	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
60C2:		
La Rose	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
60C3:		
La Rose	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
61A:		
Atterberry	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
67A:		
Harpster	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
68A:		
Sable	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
86B:		
Osco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
91A:		
Swygert	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
91B2:		
Swygert	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
125A:		
Selma	Fair	
	Thickest layer	0.00
	Bottom layer	0.01
131A:		
Alvin	Fair	
	Thickest layer	0.04
	Bottom layer	0.10
131B:		
Alvin	Fair	
	Thickest layer	0.03
	Bottom layer	0.10
131C:		
Alvin	Fair	
	Thickest layer	0.00
	Bottom layer	0.10
131D:		
Alvin	Fair	
	Thickest layer	0.00
	Bottom layer	0.10
131F:		
Alvin	Fair	
	Thickest layer	0.00
	Bottom layer	0.10

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
134A:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.06
134B:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
134C2:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.08
145B:		
Saybrook	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
145B2:		
Saybrook	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
145C2:		
Saybrook	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
148B:		
Proctor	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
152A:		
Drummer	Fair	
	Thickest layer	0.00
	Bottom layer	0.01
154A:		
Flanagan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
154B:		
Flanagan	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
171B:		
Catlin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
171B2:		
Catlin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
171C2:		
Catlin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
194C2:		
Morley	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
198A:		
Elburn	Fair	
	Thickest layer	0.00
	Bottom layer	0.05
199A:		
Plano	Fair	
	Thickest layer	0.00
	Bottom layer	0.07
199B:		
Plano	Fair	
	Thickest layer	0.00
	Bottom layer	0.07
223B2:		
Varna	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
223C2:		
Varna	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
223D:		
Varna	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
224D2:		
Strawn	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
233B2:		
Birkbeck	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
233C2:		
Birkbeck	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
233D2:		
Birkbeck	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
236A:		
Sabina	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
241C2:		
Chatsworth	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
241C3:		
Chatsworth	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
243A:		
St. Charles	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
243B:		
St. Charles	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
279B2:		
Rozetta	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
290A:		
Warsaw	Fair	
	Thickest layer	0.00
	Bottom layer	0.24
322C2:		
Russell	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
322D2:		
Russell	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
327C2:		
Fox	Fair	
	Thickest layer	0.00
	Bottom layer	0.90
330A:		
Peotone	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
356A:		
Elpaso	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand: Rating class	Value
369A:		
Waupecan	Fair	
	Thickest layer	0.00
	Bottom layer	0.51
369B:		
Waupecan	Fair	
	Thickest layer	0.00
	Bottom layer	0.51
375A:		
Rutland	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
375B:		
Rutland	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
375B2:		
Rutland	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
379A:		
Dakota	Fair	
	Thickest layer	0.00
	Bottom layer	0.90
383B:		
Newvienna	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
387A:		
Ockley	Fair	
	Thickest layer	0.00
	Bottom layer	0.08
388B2:		
Wenona	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
388C2:		
Wenona	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
435A:		
Streator	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
440A:		
Jasper	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand: Rating class	Value
440B:		
Jasper	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
440C2:		
Jasper	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
533:		
Urban land	Not rated	
536:		
Dumps, mine	Not rated	
541B2:		
Graymont	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
541C2:		
Graymont	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
567B:		
Elkhart	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
570A:		
Martinsville	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
570B:		
Martinsville	Fair	
	Thickest layer	0.00
	Bottom layer	0.03
570C2:		
Martinsville	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
614A:		
Chenoa	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
614B2:		
Chenoa	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
618C2:		
Senachwine	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
618D2:		
Senachwine----------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
622B2:		
Wyanet--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
622C2:		
Wyanet--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
663A:		
Clare---------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
679A:		
Blackberry----------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
679B:		
Blackberry----------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
689B:		
Coloma--------------	Fair	
	Bottom layer	0.18
	Thickest layer	0.75
689D:		
Coloma--------------	Fair	
	Bottom layer	0.18
	Thickest layer	0.75
705B:		
Buckhart------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
712A:		
Spaulding-----------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
715A:		
Arrowsmith----------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
721A:		
Drummer-------------	Fair	
	Thickest layer	0.00
	Bottom layer	0.01
Elpaso--------------	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
802B:		
Orthents, loamy	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
802D:		
Orthents, loamy	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
835G:		
Earthen dam	Not rated	
865:		
Pits, gravel	Not rated	
883F:		
Senachwine	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Hennepin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
883G:		
Senachwine	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Hennepin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
964F:		
Miami	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
Hennepin	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
1100A:		
Palms	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
1210L:		
Lena	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
3092L:		
Sarpy	Fair	
	Thickest layer	0.08
	Bottom layer	0.51

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
3360L:		
Slacwater	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
7070A:		
Beaucoup	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8073A:		
Ross	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8074A:		
Radford	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8077A:		
Huntsville	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8107A:		
Sawmill	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8304A:		
Landes	Fair	
	Thickest layer	0.00
	Bottom layer	0.06
8368L:		
Raveenwash	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8400L:		
Calco	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8402A:		
Colo	Poor	
	Bottom layer	0.00
	Thickest layer	0.00
8451A:		
Lawson	Poor	
	Bottom layer	0.00
	Thickest layer	0.00

Table 17b.--Construction Materials

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:				
Keomah	Poor		Fair	
	Low strength	0.00	Wetness	0.04
	Wetness	0.04	Too clayey	0.05
	Shrink-swell	0.89		
17B2:				
Keomah	Poor		Fair	
	Low strength	0.00	Too clayey	0.03
	Wetness	0.04	Wetness	0.04
	Shrink-swell	0.84		
25G:				
Hennepin	Poor		Poor	
	Slope	0.00	Slope	0.00
			Carbonate content	0.87
27C2:				
Miami	Fair		Fair	
	Wetness	0.53	Wetness	0.53
27D2:				
Miami	Fair		Fair	
	Wetness	0.53	Slope	0.04
			Wetness	0.53
43A:				
Ipava	Poor		Fair	
	Low strength	0.00	Too clayey	0.14
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.83		
43B:				
Ipava	Poor		Fair	
	Low strength	0.00	Too clayey	0.01
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.35		
60C2:				
La Rose	Good		Good	
60C3:				
La Rose	Good		Good	
61A:				
Atterberry	Poor		Fair	
	Low strength	0.00	Wetness	0.04
	Wetness	0.04	Too clayey	0.55
	Shrink-swell	0.99		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
67A:				
Harpster	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.87
	Shrink-swell	0.99	Carbonate content	0.96
68A:				
Sable	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.92
	Shrink-swell	0.99		
86B:				
Osco	Poor		Fair	
	Low strength	0.00	Too clayey	0.64
	Shrink-swell	0.94	Too acid	0.99
91A:				
Swygert	Poor		Poor	
	Low strength	0.00	Too clayey	0.00
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.24		
91B2:				
Swygert	Poor		Poor	
	Low strength	0.00	Too clayey	0.00
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.26		
125A:				
Selma	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Shrink-swell	0.98		
131A:				
Alvin	Good		Good	
131B:				
Alvin	Good		Good	
131C:				
Alvin	Good		Good	
131D:				
Alvin	Good		Fair	
			Slope	0.04
131F:				
Alvin	Poor		Poor	
	Slope	0.00	Slope	0.00
134A:				
Camden	Poor		Fair	
	Low strength	0.00	Too clayey	0.49
	Shrink-swell	0.94		
134B:				
Camden	Good		Fair	
			Too clayey	0.49

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
134C2:				
Camden	Fair		Fair	
	Shrink-swell	0.99	Too clayey	0.49
145B:				
Saybrook	Fair		Fair	
	Wetness	0.80	Too clayey	0.66
			Wetness	0.80
145B2:				
Saybrook	Fair		Fair	
	Wetness	0.80	Too clayey	0.70
			Wetness	0.80
145C2:				
Saybrook	Fair		Fair	
	Wetness	0.80	Too clayey	0.70
			Wetness	0.80
148B:				
Proctor	Good		Fair	
			Too clayey	0.81
152A:				
Drummer	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.86
	Shrink-swell	0.99		
154A:				
Flanagan	Fair		Fair	
	Wetness	0.14	Too clayey	0.13
	Shrink-swell	0.90	Wetness	0.14
154B:				
Flanagan	Poor		Fair	
	Low strength	0.00	Too clayey	0.12
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.60		
171B:				
Catlin	Fair		Fair	
	Wetness	0.95	Too clayey	0.64
	Shrink-swell	0.98	Wetness	0.95
171B2:				
Catlin	Poor		Fair	
	Low strength	0.00	Too clayey	0.79
	Wetness	0.95	Wetness	0.95
	Shrink-swell	0.99		
171C2:				
Catlin	Poor		Fair	
	Low strength	0.00	Too clayey	0.70
	Shrink-swell	0.91	Wetness	0.95
	Wetness	0.95		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
194C2:				
Morley	Poor		Fair	
	Low strength	0.00	Too clayey	0.03
	Shrink-swell	0.47	Wetness	0.95
	Wetness	0.95		
198A:				
Elburn	Poor		Fair	
	Low strength	0.00	Wetness	0.14
	Wetness	0.14	Too clayey	0.81
	Shrink-swell	0.99		
199A:				
Plano	Poor		Fair	
	Low strength	0.00	Too clayey	0.67
	Shrink-swell	0.98		
199B:				
Plano	Poor		Fair	
	Low strength	0.00	Too clayey	0.67
	Shrink-swell	0.99		
223B2:				
Varna	Poor		Fair	
	Low strength	0.00	Too clayey	0.06
	Shrink-swell	0.43	Wetness	0.98
	Wetness	0.98		
223C2:				
Varna	Poor		Fair	
	Low strength	0.00	Too clayey	0.22
	Shrink-swell	0.34	Wetness	0.98
	Wetness	0.98		
223D:				
Varna	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Shrink-swell	0.41	Too clayey	0.06
224D2:				
Strawn	Good		Fair	
			Slope	0.04
233B2:				
Birkbeck	Poor		Fair	
	Low strength	0.00	Too clayey	0.52
	Wetness	0.89	Wetness	0.89
	Shrink-swell	0.96		
233C2:				
Birkbeck	Poor		Fair	
	Low strength	0.00	Too clayey	0.52
	Wetness	0.59	Wetness	0.59
	Shrink-swell	0.97		
233D2:				
Birkbeck	Poor		Fair	
	Low strength	0.00	Slope	0.04
	Wetness	0.59	Too clayey	0.52
	Shrink-swell	0.97	Wetness	0.59

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
236A:				
Sabina	Poor		Fair	
	Low strength	0.00	Wetness	0.04
	Wetness	0.04	Too clayey	0.05
	Shrink-swell	0.59		
241C2:				
Chatsworth	Poor		Poor	
	Low strength	0.00	Too clayey	0.00
	Wetness	0.68	Wetness	0.68
	Shrink-swell	0.87		
241C3:				
Chatsworth	Poor		Poor	
	Low strength	0.00	Too clayey	0.00
	Wetness	0.68	Wetness	0.68
	Shrink-swell	0.87		
243A:				
St. Charles	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.94		
243B:				
St. Charles	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.95		
279B2:				
Rozetta	Poor		Fair	
	Low strength	0.00	Too clayey	0.60
	Wetness	0.98	Wetness	0.98
	Shrink-swell	0.98		
290A:				
Warsaw	Good		Poor	
			Hard to reclaim (rock fragments)	0.00
322C2:				
Russell	Poor		Fair	
	Low strength	0.00	Too clayey	0.57
	Shrink-swell	0.90	Too acid	0.76
322D2:				
Russell	Poor		Fair	
	Low strength	0.00	Slope	0.16
	Shrink-swell	0.97	Too clayey	0.57
327C2:				
Fox	Good		Poor	
			Hard to reclaim (rock fragments)	0.00
			Rock fragments	0.00
330A:				
Peotone	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.00
	Shrink-swell	0.23		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
356A:				
Elpaso--------------	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.87		
369A:				
Waupecan------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.70
369B:				
Waupecan------------	Poor		Fair	
	Low strength	0.00	Hard to reclaim (rock fragments)	0.08
	Shrink-swell	0.99		
			Too clayey	0.70
375A:				
Rutland-------------	Poor		Poor	
	Low strength	0.00	Too clayey	0.00
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.28		
375B:				
Rutland-------------	Poor		Poor	
	Low strength	0.00	Too clayey	0.00
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.16		
375B2:				
Rutland-------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.02
	Shrink-swell	0.12	Wetness	0.14
	Wetness	0.14		
379A:				
Dakota--------------	Good		Good	
383B:				
Newvienna-----------	Poor		Fair	
	Low strength	0.00	Too clayey	0.70
	Shrink-swell	0.91		
387A:				
Ockley--------------	Fair		Fair	
	Shrink-swell	0.95	Rock fragments	0.88
388B2:				
Wenona--------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.04
	Shrink-swell	0.12	Wetness	0.98
	Wetness	0.98		
388C2:				
Wenona--------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.04
	Shrink-swell	0.12	Wetness	0.98
	Wetness	0.98		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
435A:				
Streator------------	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.00
	Shrink-swell	0.12		
440A:				
Jasper--------------	Poor		Good	
	Low strength	0.00		
440B:				
Jasper--------------	Poor		Good	
	Low strength	0.00		
	Shrink-swell	0.99		
440C2:				
Jasper--------------	Poor		Good	
	Low strength	0.00		
	Shrink-swell	0.98		
533:				
Urban land----------	Not rated		Not rated	
536:				
Dumps, mine---------	Not rated		Not rated	
541B2:				
Graymont------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.76
	Shrink-swell	0.87	Wetness	0.98
	Wetness	0.98		
541C2:				
Graymont------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.78
	Shrink-swell	0.87	Wetness	0.89
	Wetness	0.89		
567B:				
Elkhart-------------	Poor		Fair	
	Low strength	0.00	Wetness	0.98
	Wetness	0.98		
570A:				
Martinsville--------	Poor		Good	
	Low strength	0.00		
570B:				
Martinsville--------	Good		Good	
570C2:				
Martinsville--------	Good		Good	
614A:				
Chenoa--------------	Poor		Fair	
	Low strength	0.00	Too clayey	0.14
	Wetness	0.14	Wetness	0.14
	Shrink-swell	0.59		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
614B2:				
Chenoa	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.15
	Shrink-swell	0.62		
618C2:				
Senachwine	Good		Fair	
			Too clayey	0.57
618D2:				
Senachwine	Good		Fair	
			Slope	0.04
622B2:				
Wyanet	Good		Fair	
			Too clayey	0.70
622C2:				
Wyanet	Good		Fair	
			Too clayey	0.70
663A:				
Clare	Fair		Fair	
	Low strength	0.78	Too clayey	0.57
	Wetness	0.89	Wetness	0.89
	Shrink-swell	0.99		
679A:				
Blackberry	Poor		Fair	
	Low strength	0.00	Wetness	0.98
	Shrink-swell	0.96		
	Wetness	0.98		
679B:				
Blackberry	Poor		Fair	
	Low strength	0.00	Too clayey	0.63
	Wetness	0.98	Wetness	0.98
	Shrink-swell	0.98		
689B:				
Coloma	Good		Poor	
			Too sandy	0.00
689D:				
Coloma	Good		Poor	
			Too sandy	0.00
			Slope	0.63
705B:				
Buckhart	Poor		Fair	
	Low strength	0.00	Too clayey	0.67
	Shrink-swell	0.92	Wetness	0.98
	Wetness	0.98		
712A:				
Spaulding	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Carbonate content	0.90
	Shrink-swell	0.98	Too clayey	0.98

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
715A:				
Arrowsmith----------	Fair		Fair	
	Wetness	0.14	Wetness	0.14
			Too clayey	0.72
721A:				
Drummer-------------	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.81
	Shrink-swell	0.99		
Elpaso--------------	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.87		
802B:				
Orthents, loamy-----	Poor		Good	
	Low strength	0.00		
	Shrink-swell	0.87		
802D:				
Orthents, loamy-----	Poor		Fair	
	Low strength	0.00	Slope	0.63
	Shrink-swell	0.87		
835G:				
Earthen dam---------	Not rated		Not rated	
865:				
Pits, gravel--------	Not rated		Not rated	
883F:				
Senachwine----------	Poor		Poor	
	Slope	0.00	Slope	0.00
	Shrink-swell	0.99	Too clayey	0.57
Hennepin------------	Poor		Poor	
	Slope	0.00	Slope	0.00
			Carbonate content	0.90
883G:				
Senachwine----------	Poor		Poor	
	Slope	0.00	Slope	0.00
	Shrink-swell	0.99	Too clayey	0.57
Hennepin------------	Poor		Poor	
	Slope	0.00	Slope	0.00
			Carbonate content	0.88
964F:				
Miami---------------	Fair		Poor	
	Slope	0.02	Slope	0.00
	Wetness	0.53	Wetness	0.53
Hennepin------------	Poor		Poor	
	Slope	0.00	Slope	0.00
			Carbonate content	0.91

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
1100A:				
Palms	Poor		Not rated	
	Wetness	0.00		
1210L:				
Lena	Poor		Not rated	
	Wetness	0.00		
3092L:				
Sarpy	Good		Poor	
			Too sandy	0.00
3360L:				
Slacwater	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00		
7070A:				
Beaucoup	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.86
	Shrink-swell	0.97		
8073A:				
Ross	Fair		Good	
	Low strength	0.22		
8074A:				
Radford	Poor		Fair	
	Low strength	0.00	Wetness	0.29
	Wetness	0.29		
	Shrink-swell	0.99		
8077A:				
Huntsville	Poor		Good	
	Low strength	0.00		
8107A:				
Sawmill	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.87		
8304A:				
Landes	Good		Good	
8368L:				
Raveenwash	Fair		Fair	
	Wetness	0.14	Wetness	0.14
8400L:				
Calco	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Carbonate content	0.97
	Shrink-swell	0.87	Too clayey	0.98

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
8402A:				
Colo----------------	Poor		Poor	
	Wetness	0.00	Wetness	0.00
	Low strength	0.00	Too clayey	0.98
	Shrink-swell	0.87		
8451A:				
Lawson--------------	Poor		Fair	
	Low strength	0.00	Wetness	0.14
	Wetness	0.14		

Table 18a.--Water Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	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
17A:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.15		
17B2:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
	Slope	0.08			Cutbanks cave	0.10
25G:						
Hennepin	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.80	Depth to water	1.00
	Seepage	0.04				
27C2:						
Miami	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to water	1.00
	Seepage	0.72				
			Piping	0.31		
27D2:						
Miami	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to water	1.00
	Seepage	0.72				
			Piping	0.20		
43A:						
Ipava	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
43B:						
Ipava	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
	Slope	0.02			Cutbanks cave	0.10
60C2:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Piping	0.57	Depth to water	1.00
	Seepage	0.04				
60C3:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Piping	0.27	Depth to water	1.00
	Seepage	0.72				
61A:						
Atterberry	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.04		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
67A:						
Harpster------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
			Piping	0.02		
68A:						
Sable---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
			Piping	0.01		
86B:						
Osco----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
	Slope	0.02				
91A:						
Swygert-------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.52		
91B2:						
Swygert-------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.65		
125A:						
Selma---------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Piping	0.19		
131A:						
Alvin---------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.08	Depth to water	1.00
131B:						
Alvin---------------	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	0.02				
131C:						
Alvin---------------	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	0.98				
131D:						
Alvin---------------	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	1.00				

Table 18a.--Water Management--Continued

Map symbol and soil name	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
131F:						
Alvin	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	1.00				
134A:						
Camden	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.09	Depth to water	1.00
134B:						
Camden	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.44	Depth to water	1.00
	Slope	0.02				
134C2:						
Camden	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.08	Depth to water	1.00
	Slope	0.98				
145B:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Depth to water	1.00
			Piping	0.23		
145B2:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Depth to water	1.00
	Slope	0.08				
			Piping	0.24		
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.93	Depth to water	1.00
	Seepage	0.72				
			Piping	0.15		
148B:						
Proctor	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.68	Depth to water	1.00
	Slope	0.02				
152A:						
Drummer	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.03		
154A:						
Flanagan	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.01		
154B:						
Flanagan	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
	Slope	0.08			Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	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
171B:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.75	Depth to water	1.00
			Piping	0.01		
171B2:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.75	Depth to water	1.00
			Piping	0.02		
171C2:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.75	Depth to water	1.00
	Seepage	0.72				
194C2:						
Morley	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.75	Depth to water	1.00
	Seepage	0.02				
198A:						
Elburn	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.08		
199A:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.07	Depth to water	1.00
199B:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.11	Depth to water	1.00
	Slope	0.02				
223B2:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02				
223C2:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.68	Depth to water	1.00
	Seepage	0.02				
223D:						
Varna	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.02				
224D2:						
Strawn	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.52	Depth to water	1.00
	Seepage	0.72				

Table 18a.--Water Management--Continued

Map symbol and soil name	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
233B2:						
Birkbeck	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.86	Depth to water	1.00
	Slope	0.02				
233C2:						
Birkbeck	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.99	Depth to water	1.00
	Seepage	0.72				
233D2:						
Birkbeck	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	0.99	Depth to water	1.00
	Seepage	0.72	Piping	0.01		
236A:						
Sabina	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.03		
241C2:						
Chatsworth	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Depth to saturated zone	0.98	Depth to water	1.00
			Hard to pack	0.64		
241C3:						
Chatsworth	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Depth to saturated zone	0.98	Depth to water	1.00
			Hard to pack	0.62		
243A:						
St. Charles	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.02	Depth to water	1.00
243B:						
St. Charles	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.02	Depth to water	1.00
	Slope	0.02				
279B2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
	Slope	0.02	Piping	0.01	Depth to saturated zone	0.14
					Cutbanks cave	0.10
290A:						
Warsaw	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
322C2:						
Russell	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.01	Depth to water	1.00
	Seepage	0.72				

Table 18a.--Water Management--Continued

Map symbol and soil name	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
322D2:						
Russell	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.01	Depth to water	1.00
	Seepage	0.72				
327C2:						
Fox	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	0.98				
330A:						
Peotone	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
			Hard to pack	0.33		
356A:						
Elpaso	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
369A:						
Waupecan	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.52	Depth to water	1.00
369B:						
Waupecan	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.56	Depth to water	1.00
	Slope	0.08				
375A:						
Rutland	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.31		
375B:						
Rutland	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Depth to water	1.00
	Slope	0.02				
			Hard to pack	0.49		
375B2:						
Rutland	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Depth to water	1.00
	Slope	0.02				
			Hard to pack	0.16		
379A:						
Dakota	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
383B:						
Newvienna	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.46	Slow refill	0.28
	Slope	0.02			Depth to saturated zone	0.24
			Piping	0.02		
					Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	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
387A:						
Ockley	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
388B2:						
Wenona	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02	Hard to pack	0.32		
388C2:						
Wenona	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.68	Depth to water	1.00
	Seepage	0.04	Hard to pack	0.41		
435A:						
Streator	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.64		
440A:						
Jasper	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.90	Depth to water	1.00
440B:						
Jasper	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.46	Depth to water	1.00
	Slope	0.02				
440C2:						
Jasper	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.39	Depth to water	1.00
	Slope	0.98				
533:						
Urban land	Not rated		Not rated		Not rated	
536:						
Dumps, mine	Not rated		Not rated		Not rated	
541B2:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.08				
541C2:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.86	Depth to water	1.00
	Seepage	0.72	Piping	0.01		
567B:						
Elkhart	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
	Slope	0.02	Piping	0.46	Depth to saturated zone	0.14
					Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	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
570A:						
Martinsville--------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.82	Depth to water	1.00
570B:						
Martinsville--------	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	0.02				
570C2:						
Martinsville--------	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	0.98				
614A:						
Chenoa--------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Depth to water	1.00
614B2:						
Chenoa--------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Depth to water	1.00
	Slope	0.02				
618C2:						
Senachwine----------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.24	Depth to water	1.00
	Seepage	0.72				
618D2:						
Senachwine----------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.11	Depth to water	1.00
	Seepage	0.72				
622B2:						
Wyanet--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.34	Depth to water	1.00
	Slope	0.02				
622C2:						
Wyanet--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Piping	0.13	Depth to water	1.00
	Seepage	0.72				
663A:						
Clare---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.86	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.15	Depth to saturated zone	0.06
679A:						
Blackberry----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
					Depth to saturated zone	0.14
			Piping	0.17		
					Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	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
679B:						
Blackberry----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
	Slope	0.02	Piping	0.10	Depth to saturated zone	0.14
					Cutbanks cave	0.10
689B:						
Coloma--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	0.08				
689D:						
Coloma--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
	Slope	1.00				
705B:						
Buckhart------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
	Slope	0.02	Piping	0.01	Depth to saturated zone	0.14
					Cutbanks cave	0.10
712A:						
Spaulding-----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
715A:						
Arrowsmith----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	0.50
			Piping	0.62	Slow refill	0.28
721A:						
Drummer-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
			Piping	0.03		
Elpaso--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.47	Piping	0.04	Depth to saturated zone	0.90
	Slope	0.08			Slow refill	0.53
					Cutbanks cave	0.10
802D:						
Orthents, loamy-----	Very limited		Somewhat limited		Somewhat limited	
	Slope	1.00	Piping	0.01	Depth to saturated zone	0.90
	Seepage	0.47			Slow refill	0.53
					Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
835G:						
Earthen dam	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
883F:						
Senachwine	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.13	Depth to water	1.00
	Seepage	0.72				
Hennepin	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.81	Depth to water	1.00
	Seepage	0.04				
883G:						
Senachwine	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.13	Depth to water	1.00
	Seepage	0.72				
Hennepin	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.84	Depth to water	1.00
	Seepage	0.04				
964F:						
Miami	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to water	1.00
	Seepage	0.72				
			Piping	0.67		
Hennepin	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.76	Depth to water	1.00
	Seepage	0.04				
1100A:						
Palms	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Organic matter content	1.00	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
			Seepage	1.00		
1210L:						
Lena	Very limited		Not rated		Somewhat limited	
	Seepage	1.00			Cutbanks cave	0.10
3092L:						
Sarpy	Very limited		Very limited		Very limited	
	Seepage	1.00	Seepage	1.00	Depth to water	1.00
3360L:						
Slacwater	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.66		

Table 18a.--Water Management--Continued

Map symbol and soil name	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
7070A:						
Beaucoup	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.01		
8073A:						
Ross	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.66	Depth to water	1.00
8074A:						
Radford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.05		
8077A:						
Huntsville	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.68	Depth to water	1.00
					Slow refill	0.28
8107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
8304A:						
Landes	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
8368L:						
Raveenwash	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	1.00		
8400L:						
Calco	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Hard to pack	0.01		
8402A:						
Colo	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
8451A:						
Lawson	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.40		

Table 18b.--Water Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. 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	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
17A:						
Keomah	Not limited		Very limited		Very limited	
			Water erosion	1.00	Restricted permeability	1.00
			Depth to saturated zone	1.00	Frost action	0.10
			Restricted permeability	0.91	Deep to water	0.01
17B2:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Water erosion	1.00	Restricted permeability	0.43
			Depth to saturated zone	1.00	Frost action	0.10
			Restricted permeability	0.40	Slope	0.04
					Deep to water	0.01
25G:						
Hennepin	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.22		
27C2:						
Miami	Somewhat limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Slope	0.84
			Depth to saturated zone	1.00	Deep to water	0.11
					Depth to dense layer	0.06
27D2:						
Miami	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Depth to dense layer	0.20
			Depth to saturated zone	1.00	Deep to water	0.11
43A:						
Ipava	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Frost action	0.10
					Deep to water	0.03
43B:						
Ipava	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Frost action	0.10
					Deep to water	0.03
					Slope	0.01
60C2:						
La Rose	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.99	Restricted permeability	0.22		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
60C3:						
La Rose	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.99	Restricted permeability	0.22		
61A:						
Atterberry	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Frost action	0.10
			Depth to saturated zone	1.00	Deep to water	0.01
67A:						
Harpster	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
			Ponding	1.00	Frost action	0.10
68A:						
Sable	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
			Ponding	1.00	Frost action	0.10
86B:						
Osco	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.25				
91A:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Restricted permeability	1.00
			Restricted permeability	0.91	Deep to water	0.03
91B2:						
Swygert	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Depth to saturated zone	1.00	Restricted permeability	1.00
			Restricted permeability	0.91	Deep to water	0.03
125A:						
Selma	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
			Ponding	1.00	Frost action	0.10
131A:						
Alvin	Not limited		Very limited		Drainage not needed	
			Too sandy	1.00		
131B:						
Alvin	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.25				
131C:						
Alvin	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Too sandy	1.00		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
131D:						
Alvin	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Too sandy	1.00		
131F:						
Alvin	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Too sandy	1.00		
134A:						
Camden	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
134B:						
Camden	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
134C2:						
Camden	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Water erosion	1.00		
			Too sandy	1.00		
145B:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Deep to water	0.19
					Frost action	0.10
					Depth to dense layer	0.06
145B2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Water erosion	1.00	Depth to dense layer	0.35
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Deep to water	0.19
					Frost action	0.10
					Slope	0.04
145C2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Slope	0.74
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Deep to water	0.19
					Frost action	0.10
					Depth to dense layer	0.06
148B:						
Proctor	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.25				
152A:						
Drummer	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
			Ponding	1.00	Frost action	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
154A:						
Flanagan------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Frost action	0.10
					Deep to water	0.03
154B:						
Flanagan------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Frost action	0.10
					Slope	0.04
					Deep to water	0.03
171B:						
Catlin--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Deep to water	0.32
			Depth to saturated zone	1.00	Frost action	0.10
171B2:						
Catlin--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Deep to water	0.32
			Depth to saturated zone	1.00	Frost action	0.10
171C2:						
Catlin--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Slope	0.74
			Depth to saturated zone	1.00	Deep to water	0.32
					Frost action	0.10
194C2:						
Morley--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Depth to saturated zone	1.00	Slope	0.74
			Restricted permeability	0.40	Restricted permeability	0.43
					Deep to water	0.32
198A:						
Elburn--------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Frost action	0.10
					Deep to water	0.03
199A:						
Plano---------------	Not limited		Not limited		Drainage not needed	
199B:						
Plano---------------	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.25				
223B2:						
Varna---------------	Somewhat limited		Very limited		Very limited	
	Slope	0.25	Depth to saturated zone	1.00	Restricted permeability	1.00
			Restricted permeability	0.91	Deep to water	0.37
					Slope	0.01
					Depth to dense layer	0.01

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
223C2:						
Varna	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Depth to saturated zone	1.00	Restricted permeability	1.00
			Restricted permeability	0.91	Slope	0.74
					Deep to water	0.37
223D:						
Varna	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.91		
224D2:						
Strawn	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.22		
233B2:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Deep to water	0.25
			Depth to saturated zone	1.00	Frost action	0.10
					Slope	0.01
233C2:						
Birkbeck	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Slope	0.74
			Depth to saturated zone	1.00	Deep to water	0.12
					Frost action	0.10
233D2:						
Birkbeck	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Deep to water	0.12
			Depth to saturated zone	1.00	Frost action	0.10
236A:						
Sabina	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Restricted permeability	0.21
			Depth to saturated zone	1.00	Frost action	0.10
			Restricted permeability	0.22	Deep to water	0.01
241C2:						
Chatsworth	Somewhat limited		Very limited		Very limited	
	Slope	0.62	Depth to saturated zone	1.00	Restricted permeability	1.00
			Restricted permeability	0.99	Depth to dense layer	0.35
					Slope	0.16
					Deep to water	0.14

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
241C3:						
Chatsworth----------	Somewhat limited		Very limited		Very limited	
	Slope	0.62	Depth to saturated zone	1.00	Depth to dense layer	1.00
			Restricted permeability	0.99	Restricted permeability	1.00
					Slope	0.16
					Deep to water	0.14
243A:						
St. Charles---------	Not limited		Very limited		Drainage not needed	
			Water erosion	1.00		
243B:						
St. Charles---------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Water erosion	1.00		
279B2:						
Rozetta-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Deep to water	0.37
			Depth to saturated zone	1.00	Frost action	0.10
					Slope	0.01
290A:						
Warsaw--------------	Not limited		Very limited		Drainage not needed	
			Too sandy	1.00		
322C2:						
Russell-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
322D2:						
Russell-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
327C2:						
Fox-----------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Too sandy	1.00		
330A:						
Peotone-------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.47
			Ponding	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Frost action	0.10
356A:						
Elpaso--------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
			Ponding	1.00	Frost action	0.10
369A:						
Waupecan------------	Not limited		Not limited		Drainage not needed	
369B:						
Waupecan------------	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.36				

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
375A:						
Rutland-------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Deep to water	0.03
375B:						
Rutland-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Deep to water	0.03
					Slope	0.01
375B2:						
Rutland-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Restricted permeability	0.43
			Depth to saturated zone	1.00	Deep to water	0.03
			Restricted permeability	0.40	Slope	0.01
379A:						
Dakota--------------	Not limited		Very limited		Drainage not needed	
			Too sandy	1.00		
383B:						
Newvienna-----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Deep to water	0.52
					Frost action	0.10
					Slope	0.01
387A:						
Ockley--------------	Not limited		Not limited		Drainage not needed	
388B2:						
Wenona--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Deep to water	0.37
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Slope	0.01
388C2:						
Wenona--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Slope	0.74
			Depth to saturated zone	1.00	Deep to water	0.37
			Restricted permeability	0.22	Restricted permeability	0.21
435A:						
Streator------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
			Ponding	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Frost action	0.10

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
440A:						
Jasper--------------	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.01				
440B:						
Jasper--------------	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.25				
440C2:						
Jasper--------------	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.99				
533:						
Urban land----------	Not rated		Not rated		Not rated	
536:						
Dumps, mine---------	Not rated		Not rated		Not rated	
541B2:						
Graymont------------	Somewhat limited		Very limited		Very limited	
	Slope	0.36	Water erosion	1.00	Restricted permeability	1.00
			Depth to saturated zone	1.00	Deep to water	0.37
			Restricted permeability	0.91	Frost action	0.10
					Slope	0.04
541C2:						
Graymont------------	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Water erosion	1.00	Restricted permeability	1.00
			Depth to saturated zone	1.00	Slope	0.74
			Restricted permeability	0.91	Deep to water	0.25
					Frost action	0.10
567B:						
Elkhart-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Depth to saturated zone	1.00	Deep to water	0.37
					Frost action	0.10
					Slope	0.01
570A:						
Martinsville--------	Not limited		Not limited		Drainage not needed	
570B:						
Martinsville--------	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.25				
570C2:						
Martinsville--------	Somewhat limited		Not limited		Drainage not needed	
	Slope	0.99				
614A:						
Chenoa--------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Restricted permeability	0.21
			Restricted permeability	0.22	Deep to water	0.03

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
614B2:						
Chenoa	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Water erosion	1.00	Restricted permeability	0.21
			Depth to saturated zone	1.00	Slope	0.01
			Restricted permeability	0.22		
618C2:						
Senachwine	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	1.00	Restricted permeability	0.22		
618D2:						
Senachwine	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.22		
622B2:						
Wyanet	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.25	Restricted permeability	0.22		
622C2:						
Wyanet	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.99	Restricted permeability	0.22		
663A:						
Clare	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Deep to water	0.25
					Frost action	0.10
679A:						
Blackberry	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Deep to water	0.37
					Frost action	0.10
679B:						
Blackberry	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Depth to saturated zone	1.00	Deep to water	0.37
					Frost action	0.10
					Slope	0.01
689B:						
Coloma	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Too sandy	1.00		
689D:						
Coloma	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Too sandy	1.00		
			Slope	1.00		
705B:						
Buckhart	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Depth to saturated zone	1.00	Deep to water	0.37
					Frost action	0.10
					Slope	0.01

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
712A:						
Spaulding-----------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
					Frost action	0.10
			Ponding	1.00		
715A:						
Arrowsmith----------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Frost action	0.10
					Deep to water	0.03
721A:						
Drummer-------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
					Frost action	0.10
			Ponding	1.00		
Elpaso--------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
					Frost action	0.10
			Ponding	1.00		
802B:						
Orthents, loamy-----	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Water erosion	1.00		
			Restricted permeability	0.22		
802D:						
Orthents, loamy-----	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
			Restricted permeability	0.22		
835G:						
Earthen dam---------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
883F:						
Senachwine----------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.22		
Hennepin------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.22		
883G:						
Senachwine----------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.22		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
883G:						
Hennepin------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Restricted permeability	0.22		
964F:						
Miami---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to saturated zone	1.00	Deep to water	0.11
Hennepin------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
			Restricted permeability	0.22		
1100A:						
Palms---------------	Not rated		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Frost action	0.10
			Ponding	1.00		
1210L:						
Lena----------------	Not rated		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Flooding	0.35
					Frost action	0.10
			Ponding	1.00		
3092L:						
Sarpy---------------	Not limited		Very limited		Drainage not needed	
			Too sandy	1.00		
3360L:						
Slacwater-----------	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Ponding	0.74
			Depth to saturated zone	1.00	Flooding	0.35
					Frost action	0.10
			Ponding	1.00		
7070A:						
Beaucoup------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
					Restricted permeability	0.21
			Ponding	1.00		
			Restricted permeability	0.22	Frost action	0.10
					Flooding	0.05
8073A:						
Ross----------------	Not limited		Not limited		Drainage not needed	
8074A:						
Radford-------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Flooding	0.10
					Frost action	0.10
					Deep to water	0.06
8077A:						
Huntsville----------	Not limited		Not limited		Drainage not needed	

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8107A:						
Sawmill	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
					Flooding	0.10
			Ponding	1.00	Frost action	0.10
8304A:						
Landes	Not limited		Very limited		Drainage not needed	
			Too sandy	1.00		
8368L:						
Raveenwash	Not limited		Very limited		Somewhat limited	
			Water erosion	1.00	Flooding	0.10
			Depth to saturated zone	1.00	Deep to water	0.03
8400L:						
Calco	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
					Flooding	0.10
			Ponding	1.00	Frost action	0.10
8402A:						
Colo	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Ponding	0.33
					Flooding	0.10
			Ponding	1.00	Frost action	0.10
8451A:						
Lawson	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Flooding	0.10
					Frost action	0.10
					Deep to water	0.03

Table 18c.--Water Management

(Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value column 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	Sprinkler irrigation: Rating class and limiting features	Value
17A:		
Keomah	Somewhat limited	
	Slow water movement	0.30
17B2:		
Keomah	Not limited	
25G:		
Hennepin	Very limited	
	Slope	1.00
27C2:		
Miami	Somewhat limited	
	Slope	0.10
27D2:		
Miami	Somewhat limited	
	Slope	0.98
43A:		
Ipava	Not limited	
43B:		
Ipava	Not limited	
60C2:		
La Rose	Somewhat limited	
	Slope	0.06
60C3:		
La Rose	Somewhat limited	
	Slope	0.06
61A:		
Atterberry	Not limited	
67A:		
Harpster	Somewhat limited	
	Ponding	0.50
68A:		
Sable	Somewhat limited	
	Ponding	0.50
86B:		
Osco	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	
	Rating class and limiting features	Value
91A:		
Swygert	Somewhat limited	
	Slow water movement	0.29
91B2:		
Swygert	Somewhat limited	
	Slow water movement	0.29
125A:		
Selma	Somewhat limited	
	Ponding	0.50
131A:		
Alvin	Somewhat limited	
	Low water-holding capacity	0.01
131B:		
Alvin	Not limited	
131C:		
Alvin	Somewhat limited	
	Slope	0.06
131D:		
Alvin	Somewhat limited	
	Slope	0.98
131F:		
Alvin	Very limited	
	Slope	1.00
134A:		
Camden	Not limited	
134B:		
Camden	Not limited	
134C2:		
Camden	Somewhat limited	
	Slope	0.06
145B:		
Saybrook	Not limited	
145B2:		
Saybrook	Not limited	
145C2:		
Saybrook	Somewhat limited	
	Slope	0.06
148B:		
Proctor	Not limited	
152A:		
Drummer	Somewhat limited	
	Ponding	0.50

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
154A:		
Flanagan	Not limited	
154B:		
Flanagan	Not limited	
171B:		
Catlin	Not limited	
171B2:		
Catlin	Not limited	
171C2:		
Catlin	Somewhat limited	
	Slope	0.06
194C2:		
Morley	Somewhat limited	
	Slope	0.06
198A:		
Elburn	Not limited	
199A:		
Plano	Not limited	
199B:		
Plano	Not limited	
223B2:		
Varna	Somewhat limited	
	Slow water movement	0.29
223C2:		
Varna	Somewhat limited	
	Slow water movement	0.29
	Slope	0.06
223D:		
Varna	Somewhat limited	
	Slope	0.98
	Slow water movement	0.29
224D2:		
Strawn	Somewhat limited	
	Slope	0.98
233B2:		
Birkbeck	Not limited	
233C2:		
Birkbeck	Somewhat limited	
	Slope	0.06
233D2:		
Birkbeck	Somewhat limited	
	Slope	0.98

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	
	Rating class and limiting features	Value
236A:		
Sabina	Not limited	
241C2:		
Chatsworth	Somewhat limited	
	Slow water movement	0.98
	Low water-holding capacity	0.91
241C3:		
Chatsworth	Somewhat limited	
	Low water-holding capacity	0.99
	Slow water movement	0.98
	Content of clay in surface layer	0.50
243A:		
St. Charles	Not limited	
243B:		
St. Charles	Not limited	
279B2:		
Rozetta	Not limited	
290A:		
Warsaw	Not limited	
322C2:		
Russell	Somewhat limited	
	Slope	0.10
	Too acid	0.04
322D2:		
Russell	Somewhat limited	
	Slope	0.90
327C2:		
Fox	Somewhat limited	
	Slope	0.06
330A:		
Peotone	Very limited	
	Depth to saturated zone	1.00
	Ponding	0.50
356A:		
Elpaso	Somewhat limited	
	Ponding	0.50
369A:		
Waupecan	Not limited	
369B:		
Waupecan	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
375A:		
Rutland	Not limited	
375B:		
Rutland	Not limited	
375B2:		
Rutland	Not limited	
379A:		
Dakota	Not limited	
383B:		
Newvienna	Not limited	
387A:		
Ockley	Not limited	
388B2:		
Wenona	Not limited	
388C2:		
Wenona	Somewhat limited	
	Slope	0.06
435A:		
Streator	Somewhat limited	
	Ponding	0.50
440A:		
Jasper	Not limited	
440B:		
Jasper	Not limited	
440C2:		
Jasper	Somewhat limited	
	Slope	0.06
533:		
Urban land	Not rated	
536:		
Dumps, mine	Not rated	
541B2:		
Graymont	Somewhat limited	
	Slow water movement	0.29
541C2:		
Graymont	Somewhat limited	
	Slow water movement	0.29
	Slope	0.06
567B:		
Elkhart	Not limited	
570A:		
Martinsville	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	
	Rating class and limiting features	Value
570B:		
Martinsville	Not limited	
570C2:		
Martinsville	Somewhat limited	
	Slope	0.06
614A:		
Chenoa	Not limited	
614B2:		
Chenoa	Not limited	
618C2:		
Senachwine	Somewhat limited	
	Slope	0.10
618D2:		
Senachwine	Somewhat limited	
	Slope	0.98
622B2:		
Wyanet	Not limited	
622C2:		
Wyanet	Somewhat limited	
	Slope	0.06
663A:		
Clare	Not limited	
679A:		
Blackberry	Not limited	
679B:		
Blackberry	Not limited	
689B:		
Coloma	Somewhat limited	
	Low water-holding capacity	0.49
689D:		
Coloma	Somewhat limited	
	Slope	0.60
	Low water-holding capacity	0.41
705B:		
Buckhart	Not limited	
712A:		
Spaulding	Somewhat limited	
	Ponding	0.50
715A:		
Arrowsmith	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
721A:		
Drummer	Somewhat limited	
	Ponding	0.50
Elpaso	Somewhat limited	
	Ponding	0.50
802B:		
Orthents, loamy	Not limited	
802D:		
Orthents, loamy	Somewhat limited	
	Slope	0.60
	Low water-holding capacity	0.01
835G:		
Earthen dam	Not rated	
865:		
Pits, gravel	Not rated	
883F:		
Senachwine	Very limited	
	Slope	1.00
Hennepin	Very limited	
	Slope	1.00
883G:		
Senachwine	Very limited	
	Slope	1.00
Hennepin	Very limited	
	Slope	1.00
	Low water-holding capacity	0.01
964F:		
Miami	Very limited	
	Slope	1.00
Hennepin	Very limited	
	Slope	1.00
1100A:		
Palms	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
1210L:		
Lena	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	0.70

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value
3092L:		
Sarpy	Somewhat limited	
	Low water-holding capacity	0.84
	Flooding	0.70
3360L:		
Slacwater	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Flooding	0.70
7070A:		
Beaucoup	Somewhat limited	
	Ponding	0.50
8073A:		
Ross	Somewhat limited	
	Flooding	0.40
8074A:		
Radford	Somewhat limited	
	Flooding	0.40
8077A:		
Huntsville	Somewhat limited	
	Flooding	0.40
8107A:		
Sawmill	Somewhat limited	
	Ponding	0.50
	Flooding	0.40
8304A:		
Landes	Somewhat limited	
	Flooding	0.40
	Low water-holding capacity	0.12
8368L:		
Raveenwash	Somewhat limited	
	Flooding	0.40
8400L:		
Calco	Somewhat limited	
	Ponding	0.50
	Flooding	0.40
8402A:		
Colo	Somewhat limited	
	Ponding	0.50
	Flooding	0.40
8451A:		
Lawson	Somewhat limited	
	Flooding	0.40

Table 19.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
17A:												
Keomah----------	0-11	Silt loam	CL	A-7-6, A-6	0	0	100	100	100	95-100	27-42	10-18
	11-18	Silt loam	CL	A-6	0	0	100	100	100	95-100	26-38	10-18
	18-33	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	100	95-100	45-54	25-31
	33-51	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	37-46	19-25
	51-89	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	24-37	9-19
17B2:												
Keomah----------	0-6	Silt loam	CL	A-6	0	0	100	100	100	95-100	27-40	10-18
	6-36	Silty clay, silty clay loam	CL, CH	A-7-6	0	0	100	100	100	95-100	45-54	25-31
	36-47	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	24-37	9-19
	47-60	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	24-37	9-19
25G:												
Hennepin--------	0-4	Loam	CL	A-6, A-7-6	0-1	0-2	95-100	90-100	80-100	50-85	31-43	13-18
	4-16	Loam, clay loam, silt loam	CL, SC	A-6	0-1	0-3	85-100	80-100	68-100	42-85	27-40	12-21
	16-60	Loam	CL, SC	A-4, A-6	0-1	0-2	85-100	75-98	65-95	40-80	22-35	7-17
27C2:												
Miami-----------	0-7	Silt loam	CL	A-6	0	0	95-100	95-100	90-98	80-90	31-41	13-19
	7-11	Silty clay loam	CL	A-7-6, A-6	0	0	95-100	90-100	85-95	75-90	37-46	19-25
	11-23	Clay loam	CL	A-7-6, A-6	0	0	90-100	85-99	75-95	55-85	37-46	19-25
	23-36	Loam	CL, SC	A-6	0	0-2	90-100	85-99	70-90	45-75	29-38	13-19
	36-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
27D2:												
Miami-----------	0-4	Silt loam	CL	A-6	0	0	95-100	95-100	90-98	80-90	30-41	13-19
	4-12	Silty clay loam	CL	A-7-6, A-6	0	0	95-100	90-100	85-95	75-90	37-46	19-25
	12-28	Clay loam	CL	A-7-6, A-6	0	0-3	90-100	85-98	75-95	55-85	37-46	19-25
	28-33	Clay loam	CL	A-7-6, A-6	0	0-3	90-100	85-98	75-95	55-85	37-46	19-25
	33-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17

Table 19.--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	
43A:												
Ipava-----------	0-10	Silt loam	CL, ML	A-7-5, A-7-6, A-6, A-4	0	0	100	100	97-100	95-100	32-47	9-18
	10-18	Silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-52	19-25
	18-31	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	97-100	95-100	46-58	25-33
	31-50	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	19-25
	50-60	Silt loam	CL	A-6, A-4	0	0	100	100	96-100	93-100	24-38	9-19
43B:												
Ipava-----------	0-17	Silt loam	CL, ML	A-6, A-7-5, A-7-6	0	0	100	100	95-100	90-100	37-47	13-18
	17-58	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	46-56	25-31
	58-60	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	24-38	9-19
60C2:												
La Rose---------	0-7	Silt loam	CL	A-7-6, A-6	0	0	90-100	80-100	72-98	57-85	32-44	13-18
	7-19	Clay loam	CL	A-6, A-7-6	0	0	90-100	85-100	75-95	55-85	37-46	19-25
	19-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
60C3:												
La Rose---------	0-6	Silty clay loam	CL	A-6, A-7-6	0	0	90-100	85-100	75-95	70-85	38-47	19-25
	6-10	Clay loam, silty clay loam, silt loam	CL	A-7-6, A-6	0	0	90-100	85-100	75-95	55-85	36-46	18-25
	10-24	Clay loam, silt loam	CL	A-7-6, A-6	0	0	90-100	85-100	75-95	55-85	36-46	18-25
	24-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
61A:												
Atterberry------	0-9	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	95-100	28-44	9-18
	9-17	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	25-39	9-19
	17-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	35-46	17-25
	48-60	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	25-38	9-19

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
67A:												
Harpster--------	0-18	Silty clay loam	CL, MH	A-7-6, A-7-5	0	0	100	97-100	95-100	85-98	46-57	18-22
	18-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-98	40-51	19-23
	41-56	Silt loam	CL	A-6, A-4	0	0	100	97-100	85-100	70-98	26-38	9-18
	56-60	Loam, silt loam	CL	A-6, A-4	0	0	100	95-100	80-95	50-75	25-37	9-18
68A:												
Sable-----------	0-23	Silty clay loam	MH, CL, ML	A-7-6, A-7-5	0	0	100	100	97-100	95-100	46-57	18-24
	23-38	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	38-48	19-25
	38-47	Silt loam, silty clay loam	CL	A-6	0	0	100	100	97-100	95-100	32-38	16-19
	47-60	Silt loam	CL	A-6	0	0	100	100	97-100	95-100	29-38	13-19
86B:												
Osco------------	0-14	Silt loam	CL, ML	A-7-6, A-6	0	0	100	100	100	95-100	35-44	13-18
	14-55	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	100	95-100	34-47	16-25
	55-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	100	95-100	29-40	13-21
91A:												
Swygert---------	0-12	Silty clay loam	CL, MH	A-7-5, A-7-6	0	0	100	98-100	95-100	85-98	43-55	18-25
	12-26	Silty clay, clay	CH	A-7-6	0	0	100	98-100	95-100	85-98	50-67	29-40
	26-51	Silty clay, clay	CH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	50-62	29-36
	51-60	Silty clay, clay, silty clay loam	CL, CH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	46-63	27-40
91B2:												
Swygert---------	0-7	Silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0	100	98-100	95-100	85-98	43-56	21-27
	7-30	Silty clay, clay	CH	A-7-6	0	0	100	98-100	95-100	85-98	50-67	29-40
	30-48	Silty clay, clay	CH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	50-62	29-36
	48-60	Silty clay, clay, silty clay loam	CL, CH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	46-63	27-40

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
125A:												
Selma-----------	0-6	Loam	CL, ML	A-6, A-7-5, A-7-6	0	0	100	95-100	80-100	55-85	37-49	13-18
	6-13	Clay loam	CL, MH	A-7-5, A-7-6	0	0	100	95-100	85-100	65-85	43-55	18-25
	13-44	Loam, silty clay loam, sandy loam, clay loam	CL, SC	A-6, A-7-6	0	0	100	85-100	80-95	38-85	29-47	12-23
	44-80	Stratified sand to silt loam	SC-SM, SC, SP-SM, CL, CL-ML	A-4, A-2-4, A-6, A-2-6	0	0	90-100	80-100	60-90	12-70	18-31	3-12
131A:												
Alvin-----------	0-8	Loamy sand	SC-SM, SM	A-2-4	0	0	100	100	68-97	12-35	17-24	2-6
	8-26	Sandy loam, loam	CL, SC	A-6, A-2-4, A-4, A-2-6	0	0	100	100	68-100	29-58	24-33	9-15
	26-60	Stratified sand to loamy sand	SM, SP-SM, SC-SM	A-2-4, A-4, A-3	0	0	95-100	92-100	68-100	5-41	0-23	NP-6
131B:												
Alvin-----------	0-10	Sandy loam	SC, SC-SM	A-4	0	0	100	100	76-96	35-50	21-28	6-10
	10-16	Loam	SC, SC-SM, CL, CL-ML	A-4	0	0	100	100	76-96	35-59	20-27	6-10
	16-47	Sandy loam, loam	SC, CL	A-4, A-6, A-2-6, A-2-4	0	0	100	95-100	70-96	29-64	24-30	9-12
	47-80	Stratified sand to loamy sand	SP-SM, SC-SM, SM	A-2-4, A-4, A-3	0	0	95-100	92-100	67-96	5-41	0-23	NP-6
131C:												
Alvin-----------	0-9	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	100	80-95	30-50	21-28	6-10
	9-19	Loam	CL, SC, CL-ML, SC-SM	A-2-4, A-4	0	0	100	100	80-95	30-61	20-27	6-10
	19-32	Sandy loam	CL, SC	A-2-4, A-4, A-6, A-2-6	0	0	100	95-100	72-100	30-61	24-30	9-12
	32-60	Stratified loamy sand to sandy loam	SP-SM, SC-SM, SM	A-4, A-3, A-2-4	0	0	95-100	92-100	70-95	5-41	0-23	NP-6
131D:												
Alvin-----------	0-5	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	100	80-95	30-50	21-28	6-10
	5-14	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	100	80-95	30-50	20-27	6-10
	14-33	Sandy loam, sandy clay loam	CL, SC	A-2-6, A-2-4, A-4, A-6	0	0	100	95-100	72-100	30-61	24-32	9-13
	33-80	Loamy sand	SP-SM, SC-SM, SM	A-4, A-3, A-2-4	0	0	95-100	92-100	70-95	5-41	0-23	NP-6

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
131F:												
Alvin-----------	0-6	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	100	80-95	30-50	21-28	6-10
	6-13	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	100	80-95	30-50	20-27	6-10
	13-40	Sandy loam, sandy clay loam	CL, SC	A-2-6, A-2-4, A-4, A-6	0	0	100	95-100	72-100	30-61	24-32	9-13
	40-80	Loamy sand	SP-SM, SC-SM, SM	A-4, A-3, A-2-4	0	0	95-100	92-100	70-95	5-41	0-23	NP-6
134A:												
Camden----------	0-7	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	95-100	26-43	9-18
	7-12	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-38	9-19
	12-26	Silt loam, silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	90-100	32-46	15-25
	26-53	Clay loam, silt loam, sandy loam	CL, SC	A-7-6, A-6	0	0-5	90-100	90-100	70-95	45-70	29-42	12-21
	53-60	Stratified loamy sand to sandy loam	SC-SM, SM, SC	A-2-4, A-6, A-4, A-2-6, A-1-b	0	0-5	90-100	70-100	35-70	14-45	16-32	2-13
134B:												
Camden----------	0-9	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	95-100	26-43	9-18
	9-15	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-38	9-19
	15-34	Silt loam, silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	90-100	32-46	15-25
	34-40	Clay loam, silt loam, sandy loam	CL, SC	A-7-6, A-6	0	0-5	90-100	90-100	70-95	45-70	29-42	12-21
	40-60	Stratified loamy sand to sandy loam	SC-SM, SM, SC	A-2-4, A-6, A-4, A-2-6, A-1-b	0	0-5	90-100	70-100	35-80	14-45	16-32	2-13
134C2:												
Camden----------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	26-41	9-19
	7-34	Silt loam, silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	91-100	35-46	17-25
	34-43	Loam, clay loam	CL, SC	A-6, A-7-6	0	0-5	90-100	90-100	77-96	48-77	32-42	15-21
	43-80	Stratified loamy sand to sandy clay loam	SM, SC, SC-SM	A-2-4, A-4, A-1-b, A-6, A-2-6	0	0-5	90-100	80-100	40-89	15-45	16-35	2-17

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
145B:												
Saybrook--------	0-15	Silt loam	CL, ML	A-7-6, A-4, A-6	0	0	100	97-100	95-100	85-100	30-45	9-18
	15-32	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	38-48	19-25
	32-36	Clay loam	CL	A-7-6, A-6	0	0	90-100	85-100	75-95	55-85	37-46	19-25
	36-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
145B2:												
Saybrook--------	0-8	Silt loam	ML, CL	A-6, A-7-6	0	0	100	97-100	95-100	85-100	32-44	13-18
	8-28	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	97-100	95-100	85-100	36-48	17-25
	28-31	Clay loam	CL	A-6, A-7-6	0	0	90-100	85-100	75-95	55-85	37-46	19-25
	31-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
145C2:												
Saybrook--------	0-9	Silt loam	CL, ML	A-6, A-7-6	0	0	100	97-100	95-100	85-100	32-44	13-18
	9-30	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	36-48	17-25
	30-36	Clay loam	CL	A-6, A-7-6	0	0	90-100	85-100	75-95	55-85	37-46	19-25
	36-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
148B:												
Proctor---------	0-11	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-100	33-45	11-18
	11-28	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	36-49	17-25
	28-33	Loam, clay loam, sandy loam, sandy clay loam	CL, SC	A-6, A-7-6	0	0	98-100	95-100	80-100	35-80	29-43	12-21
	33-60	Stratified loam to loamy sand	ML, SM, CL, CL-ML, SC, SC-SM	A-4, A-6, A-2-4, A-2-6	0	0	95-100	90-100	55-95	15-75	16-32	2-13
152A:												
Drummer---------	0-14	Silty clay loam	MH, CL	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	46-60	18-24
	14-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	38-49	19-25
	41-47	Loam	CL	A-6	0	0	95-100	90-100	75-95	50-80	29-38	13-19
	47-60	Stratified loam to sandy loam	SC, CL, CL-ML, SC-SM	A-2-6, A-6, A-4, A-2-4	0	0	95-100	80-100	55-95	30-65	20-31	6-13

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
154A:												
Flanagan--------	0-18	Silt loam	CL, ML	A-7-5, A-7-6, A-6	0	0	100	100	95-100	90-100	36-47	13-18
	18-38	Silty clay loam, silty clay	CL, CH	A-7-6	0	0	100	100	95-100	95-100	46-55	25-29
	38-45	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	35-46	17-25
	45-49	Silt loam, loam	CL	A-6	0	0-3	85-100	80-100	75-90	60-90	29-38	13-19
	49-80	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
154B:												
Flanagan--------	0-10	Silt loam	CL, ML	A-6, A-7-6, A-7-5	0	0	100	100	95-100	92-100	36-47	13-18
	10-17	Silty clay loam	CL, CH	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-52	19-25
	17-42	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0	0	100	100	95-100	92-100	38-55	19-31
	42-53	Silty clay loam	CL	A-6, A-7-6	0	0	85-100	80-100	70-95	65-85	37-46	19-25
	53-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
171B:												
Catlin----------	0-11	Silt loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	32-45	11-18
	11-16	Silty clay loam	CH, CL	A-7-5, A-7-6	0	0	100	100	97-100	95-100	40-52	19-25
	16-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	90-100	38-48	19-25
	41-45	Clay loam	CL	A-7-6, A-6	0	0	90-98	85-98	76-95	54-83	37-46	19-25
	45-80	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
171B2:												
Catlin----------	0-8	Silt loam	ML, CL	A-7-6, A-6	0	0	100	100	97-100	95-100	32-44	13-18
	8-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	38-48	19-25
	41-47	Loam	CL	A-6, A-4	0	0	90-98	85-98	80-95	60-75	25-38	9-19
	47-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
171C2:												
Catlin----------	0-9	Silt loam	ML, CL	A-7-6, A-6	0	0	100	100	97-100	95-100	32-44	13-18
	9-40	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	38-48	19-25
	40-50	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	35-46	17-25
	50-55	Clay loam	CL	A-7-6, A-6	0	0	90-98	85-98	76-95	55-85	37-46	19-25
	55-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
194C2:												
Morley----------	0-7	Silty clay loam	CL	A-6, A-7-6	0	0	95-100	90-100	85-100	80-95	39-49	19-25
	7-10	Silty clay loam, clay loam	CH, CL	A-6, A-7-6	0	0	95-100	90-100	85-100	80-95	38-51	19-29
	10-26	Silty clay loam, clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-10	95-100	90-100	85-100	80-95	39-61	19-37
	26-36	Silty clay loam, clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-10	95-100	90-100	85-100	80-95	39-61	19-37
	36-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-10	95-100	90-100	85-100	75-95	37-50	19-29
198A:												
Elburn----------	0-16	Silt loam	CL, ML	A-6, A-7-5, A-7-6	0	0	100	100	97-100	95-100	38-47	14-18
	16-49	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	36-48	17-25
	49-58	Stratified sandy loam to silt loam	CL	A-4, A-6	0	0	95-100	95-100	85-100	55-80	25-32	9-13
	58-62	Stratified sandy loam to loamy sand	SC-SM, SM, SC	A-2-4, A-4	0	0	95-100	90-100	60-100	20-50	16-27	2-10
199A:												
Plano-----------	0-14	Silt loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	33-45	11-18
	14-49	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	31-47	13-25
	49-60	Loam, clay loam, sandy loam, sandy clay loam	CL, SC	A-4, A-6, A-2-6, A-2-4, A-2-7, A-7-6	0	0-1	90-100	85-95	60-90	30-75	25-42	9-22
	60-80	Stratified loamy sand to silt loam	SC, SM, CL, ML, SC-SM, CL-ML	A-2-4, A-4, A-1-b, A-6, A-2-6	0	0-3	90-100	80-95	35-90	15-65	16-32	2-13

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
199B:												
Plano-----------	0-15	Silt loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	33-45	11-18
	15-45	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	31-47	13-25
	45-55	Loam, clay loam, sandy loam, sandy clay loam	CL, SC	A-7-6, A-6, A-2-6, A-2-7, A-4, A-2-4	0	0-1	90-100	85-95	60-90	30-75	25-42	9-22
	55-80	Stratified loamy sand to silt loam	SC, SM, CL, SC-SM, CL-ML, ML	A-2-4, A-4, A-1-b, A-2-6, A-6	0	0-3	90-100	80-95	35-90	15-65	16-32	2-13
223B2:												
Varna-----------	0-7	Silty clay loam	MH, ML, CL	A-7-6	0	0-1	98-100	95-100	90-100	80-95	41-51	19-25
	7-26	Silty clay, silty clay loam, clay	CL, CH	A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	46-63	25-36
	26-38	Silty clay, silty clay loam	CH, CL	A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	41-57	21-33
	38-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	75-95	37-50	19-29
223C2:												
Varna-----------	0-8	Silty clay loam	MH, ML, CL	A-7-6	0	0-1	98-100	95-100	90-100	80-95	41-51	19-25
	8-23	Silty clay, silty clay loam, clay	CL, CH	A-7-6	0-1	0-3	95-100	90-100	85-100	75-95	46-63	25-36
	23-43	Silty clay, silty clay loam	CH, CL	A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	41-57	21-33
	43-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	37-50	19-29

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
223D:												
Varna-----------	0-12	Silty clay loam	MH, CL, ML	A-7-6, A-7-5	0	0-1	98-100	95-100	90-100	80-95	43-53	18-25
	12-26	Silty clay, silty clay loam, clay	CL, CH	A-7-6	0-1	0-3	95-100	90-100	85-100	75-95	46-63	25-36
	26-41	Silty clay, silty clay loam	CH, CL	A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	41-57	21-33
	41-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	37-50	19-29
224D2:												
Strawn----------	0-5	Silt loam	CL	A-7-6, A-6	0	0-5	93-100	90-100	85-100	59-95	29-43	12-18
	5-15	Clay loam, loam, silty clay loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-100	75-95	56-95	35-47	17-25
	15-21	Clay loam, loam, silty clay loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-100	75-95	56-95	35-47	17-25
	21-60	Loam	CL, SC	A-4, A-6	0-1	0-5	85-100	75-98	65-95	40-80	22-35	7-17
233B2:												
Birkbeck--------	0-9	Silt loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	31-42	13-18
	9-48	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	19-25
	48-55	Loam	CL	A-6	0	0	90-100	85-100	70-90	50-70	29-38	13-19
	55-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
233C2:												
Birkbeck--------	0-7	Silt loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	30-42	13-18
	7-46	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	19-25
	46-57	Loam	CL	A-6	0	0	90-100	85-100	70-90	50-70	29-38	13-19
	57-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
233D2:												
Birkbeck--------	0-7	Silt loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	31-42	13-18
	7-46	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	36-46	18-25
	46-53	Loam	CL	A-6	0	0	90-100	85-100	71-100	50-76	29-38	13-19
	53-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
236A:												
Sabina----------	0-8	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	29-43	12-18
	8-12	Silt loam	CL	A-6	0	0	100	100	95-100	95-100	27-37	12-17
	12-43	Silty clay, silty clay loam	CL, CH	A-7-6	0	0	100	100	95-100	95-100	45-55	25-31
	43-50	Clay loam, loam, silt loam, silty clay loam	CL	A-6, A-7-6	0-1	0-3	95-100	90-100	75-95	55-85	31-46	13-25
	50-80	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
241C2:												
Chatsworth------	0-6	Silty clay loam	CL, CH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	45-70	25-43
	6-31	Silty clay, clay, silty clay loam	CH, CL	A-7-6	0	0	100	95-100	95-100	90-100	43-67	25-44
	31-60	Silty clay, clay, silty clay loam	CH, CL	A-7-6	0	0	100	95-100	90-100	80-95	43-59	25-36
241C3:												
Chatsworth------	0-5	Silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	49-68	28-44
	5-16	Silty clay, clay, silty clay loam	CH, CL	A-7-6	0	0	100	95-100	95-100	90-100	43-67	25-44
	16-60	Silty clay, clay, silty clay loam	CH, CL	A-7-6	0	0	100	95-100	90-100	80-95	43-59	25-36
243A:												
St. Charles-----	0-9	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	29-43	12-18
	9-51	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-46	17-25
	51-60	Stratified sandy loam to clay loam	CL, SC	A-4, A-6, A-2-6, A-2-4	0	0	90-100	75-100	75-95	30-80	24-40	9-21

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
243B:												
St. Charles-----	0-8	Silt loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	29-43	12-18
	8-50	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-46	17-25
	50-60	Stratified sandy loam to silt loam to clay loam	CL, SC	A-6, A-2-6, A-2-4, A-4	0	0	90-100	75-100	65-99	30-80	24-40	9-21
279B2:												
Rozetta---------	0-7	Silt loam	CL	A-6	0	0	100	100	97-100	95-100	30-41	13-19
	7-44	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	35-47	17-25
	44-60	Silt loam	CL	A-6	0	0	100	100	95-100	94-100	29-38	13-19
290A:												
Warsaw----------	0-11	Loam	CL, ML	A-7-6, A-4, A-6	0	0	95-100	90-100	75-98	55-85	30-45	9-18
	11-28	Loam, clay loam	CL, SC	A-7-6, A-6	0	0-2	90-100	85-100	72-98	40-91	32-47	13-23
	28-32	Gravelly sandy clay loam, gravelly clay loam	SC	A-2-7, A-7-6, A-2-6, A-6	0-1	0-5	70-90	60-75	51-72	23-50	27-42	12-21
	32-80	Stratified gravelly loamy sand to very gravelly coarse sand	GW-GM, SW-SM, SM, GW	A-1-b, A-1-a	0-3	1-5	45-80	20-75	6-50	0-15	0-21	NP-4
322C2:												
Russell---------	0-7	Silt loam	CL	A-6	0	0	100	97-100	95-100	85-100	30-41	13-19
	7-27	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	19-25
	27-56	Clay loam	CL	A-7-6, A-6	0	0	90-100	85-100	75-95	55-85	37-44	19-23
	56-80	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
322D2:												
Russell---------	0-7	Silt loam	CL	A-6	0	0	100	97-100	95-100	85-100	30-41	13-19
	7-29	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	92-100	86-98	37-46	19-25
	29-47	Clay loam	CL	A-7-6, A-6	0	0	90-100	85-100	75-95	55-85	37-44	19-23
	47-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17

Table 19.--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	
327C2:												
Fox-------------	0-5	Silty clay loam	CL	A-7-6, A-6	0	0	90-100	80-100	72-99	58-85	39-47	19-22
	5-14	Silty clay loam	CL	A-7-6, A-6	0	0	90-100	80-100	75-95	65-90	37-46	19-25
	14-20	Clay loam	CL	A-7-6, A-6	0	0	85-100	80-95	65-91	50-80	37-46	19-25
	20-35	Very gravelly clay loam	SW-SC, GW-GC, SC, GC	A-2-6, A-2-7	0	0-1	30-70	15-50	12-50	8-35	37-46	19-25
	35-60	Very gravelly sand, very gravelly coarse sand	SP, GW, GW-GM, SP-SM	A-1-a, A-1-b	0-1	0-5	30-70	15-50	5-40	2-10	0-19	NP-2
330A:												
Peotone---------	0-13	Silty clay loam	MH	A-7-5	0	0	100	95-100	95-100	90-100	54-65	23-28
	13-50	Silty clay loam, silty clay	CL, CH	A-7-6	0	0-3	98-100	95-100	90-100	85-100	46-61	25-32
	50-60	Silty clay loam, silt loam, silty clay	CL, CH	A-6, A-7-6	0	0-5	95-100	95-100	90-100	75-100	35-52	17-30
356A:												
Elpaso----------	0-21	Silty clay loam	MH, CL, ML	A-7-6, A-7-5	0	0	100	100	95-100	90-100	45-60	18-24
	21-44	Silty clay loam, silt loam	CL, CH	A-6, A-7-6	0	0	100	100	95-100	90-100	34-53	16-29
	44-69	Clay loam, silt loam, silty clay loam, loam	CL	A-6, A-7-6	0	0	100	85-100	80-100	60-100	31-50	13-29
	69-80	Clay loam, silt loam, silty clay loam, loam	CL	A-6, A-7-6	0	0-5	95-100	85-100	75-100	60-98	26-42	10-21

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
369A:												
Waupecan--------	0-14	Silt loam	CL, ML	A-7-5, A-7-6, A-4, A-6	0	0	100	100	100	90-95	31-45	9-18
	14-34	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-95	36-47	17-25
	34-51	Clay loam, sandy clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-2-6, A-2-4, A-4	0	0	93-100	64-100	50-100	29-65	21-40	6-21
	51-60	Gravelly sand, gravelly sandy loam	SC-SM, SM, GW-GM, SP-SM, GW	A-1-a, A-1-b, A-2-4, A-3	0-3	3-14	48-90	10-75	10-75	2-15	0-23	NP-6
369B:												
Waupecan--------	0-11	Silt loam	CL, ML	A-4, A-6, A-7-5, A-7-6	0	0	100	100	92-100	90-97	31-45	9-18
	11-40	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	93-100	77-96	36-47	17-25
	40-43	Stratified loam to sandy loam to loamy sand	CL, SC-SM, SC, CL-ML	A-4, A-2-6, A-2-4, A-6	0	0	93-100	64-100	50-90	21-65	21-36	6-17
	43-60	Gravelly sand, very gravelly sandy loam	GW, SM, GW-GM, SC-SM, SP-SM	A-1-b, A-1-a, A-2-4, A-3	0-3	3-14	48-90	10-70	7-70	1-15	0-23	NP-6
375A:												
Rutland---------	0-14	Silty clay loam	CL, MH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	43-55	18-25
	14-36	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	90-100	46-59	25-33
	36-44	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	31-47	13-25
	44-52	Silty clay, clay	CH, CL	A-7-6	0	0	98-100	95-100	90-100	85-100	49-69	29-44
	52-60	Clay, silty clay	CH, CL	A-7-6	0	0-3	95-100	90-100	90-100	85-100	49-74	29-48

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
375B:												
Rutland---------	0-13	Silty clay loam	CL, MH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	43-54	18-25
	13-40	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	90-100	46-59	25-33
	40-50	Silty clay, clay	CH, CL	A-7-6	0	0	98-100	95-100	90-100	85-100	49-69	29-44
	50-60	Silty clay, clay	CH, CL	A-7-6	0	0-3	95-100	90-100	90-100	85-100	49-74	29-48
375B2:												
Rutland---------	0-9	Silty clay loam	CL, MH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	41-53	19-25
	9-37	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	46-59	25-33
	37-46	Silty clay, clay	CH, CL	A-7-6	0	0	98-100	95-100	90-100	85-100	49-69	29-44
	46-80	Silty clay, clay	CH, CL	A-7-6	0	0-3	95-100	90-100	90-100	85-100	49-74	29-48
379A:												
Dakota----------	0-14	Loam	CL, ML	A-4, A-6, A-7-5, A-7-6	0	0	95-100	85-100	60-95	50-75	28-47	9-18
	14-34	Loam, clay loam, sandy loam	CL, SC	A-6, A-7-6	0	0	95-100	85-100	60-100	35-80	28-45	12-22
	34-60	Sand, loamy sand	SM, SP, SP-SM	A-1-b, A-2-4, A-3	0-1	0-5	95-100	78-100	42-90	2-23	0-19	NP-2
383B:												
Newvienna-------	0-8	Silt loam	CL, ML	A-7-6, A-6	0	0	100	100	100	95-100	31-43	11-18
	8-55	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	36-47	17-25
	55-64	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	24-36	9-17
	64-80	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	24-36	9-17

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
387A:												
Ockley----------	0-9	Loam	CL, CL-ML, ML	A-4, A-7-6, A-6	0	0	95-100	95-100	85-95	61-82	22-43	6-18
	9-18	Silty clay loam, silt loam, loam	CL	A-6, A-7-6	0	0	95-100	95-100	85-95	65-90	32-45	15-24
	18-30	Clay loam, sandy clay loam	CL, SC	A-2-7, A-2-6, A-6, A-7-6	0	0-1	90-100	75-100	55-96	25-65	31-44	13-23
	30-50	Gravelly sandy loam, clay loam, sandy clay loam	CL, SC	A-2-7, A-2-6, A-6, A-7-6	0	0-1	85-95	65-80	51-80	23-55	29-44	12-23
	50-60	Very gravelly sand, extremely gravelly loamy sand	GW-GM, SP-SM, GW, SW-SM	A-1-a	0-1	1-3	48-75	15-30	10-30	1-11	0-20	NP-2
388B2:												
Wenona----------	0-9	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-100	33-45	13-18
	9-42	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	46-57	25-30
	42-52	Silty clay, clay	CH, CL	A-7-6	0	0	98-100	95-100	90-100	85-100	49-69	29-44
	52-60	Silty clay, clay	CH, CL	A-7-6	0	0-3	95-100	90-100	90-100	85-98	49-74	29-48
388C2:												
Wenona----------	0-6	Silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	41-57	19-28
	6-45	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	46-57	25-30
	45-54	Silty clay, clay	CH, CL	A-7-6	0	0	98-100	95-100	90-100	85-100	49-69	29-44
	54-60	Silty clay, clay	CH, CL	A-7-6	0	0-3	95-100	90-100	90-100	85-98	49-74	29-48

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
435A:												
Streator--------	0-13	Silty clay loam	CL, MH, CH	A-7-5, A-7-6	0	0	100	100	95-100	90-100	47-65	19-28
	13-42	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	90-100	46-59	25-33
	42-68	Clay, silty clay	CH, CL	A-7-6	0	0	98-100	95-100	90-100	85-98	49-69	29-44
	68-80	Silty clay, clay	CH, CL	A-7-6	0	0-3	95-100	90-100	90-100	85-98	49-69	29-44
440A:												
Jasper----------	0-18	Silt loam	CL, ML	A-4, A-6, A-7-5, A-7-6	0	0	100	100	90-100	70-90	28-45	7-17
	18-37	Clay loam, silty clay loam, loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	85-95	50-85	32-46	13-23
	37-44	Fine sandy loam, loam, sandy clay loam, sandy loam	SC, CL	A-2-4, A-2-6, A-4, A-6	0	0	100	92-100	70-85	30-60	22-36	7-17
	44-60	Stratified loamy sand to silt loam	ML, SC, SC-SM, SM, CL, CL-ML	A-6, A-2-6, A-2-4, A-4	0	0	95-100	85-100	60-85	20-75	16-32	2-13
440B:												
Jasper----------	0-14	Silt loam	CL, ML	A-4, A-6, A-7-5, A-7-6	0	0	100	100	90-100	70-90	28-45	7-17
	14-43	Clay loam, silty clay loam, loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	85-95	50-85	32-46	13-23
	43-52	Fine sandy loam, loam, sandy clay loam, sandy loam	SC, CL	A-2-4, A-2-6, A-4, A-6	0	0	100	92-100	70-85	30-60	22-36	7-17
	52-60	Stratified loamy sand to silt loam	ML, SC, SC-SM, SM, CL, CL-ML	A-2-6, A-6, A-2-4, A-4	0	0	95-100	85-100	60-87	20-75	16-32	2-13

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
440C2:												
Jasper----------	0-8	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-39	6-15
	8-43	Clay loam, silty clay loam, loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	86-100	50-85	32-46	13-23
	43-50	Fine sandy loam, loam, sandy clay loam, sandy loam	SC, CL	A-2-4, A-2-6, A-4, A-6	0	0	100	92-100	70-90	30-60	22-36	7-17
	50-60	Stratified loamy sand to silt loam	ML, SC, SC-SM, SM, CL, CL-ML	A-6, A-2-6, A-2-4, A-4	0	0	95-100	85-100	65-90	26-75	16-32	2-13
533.												
Urban land												
536.												
Dumps, mine												
541B2:												
Graymont--------	0-8	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-100	35-43	14-18
	8-24	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	90-100	35-49	17-25
	24-35	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0-5	90-100	85-99	80-95	71-90	32-50	15-29
	35-60	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0-5	90-100	80-98	72-95	65-90	34-45	16-24
541C2:												
Graymont--------	0-9	Silt loam	ML, CL	A-7-6, A-6	0	0	100	100	95-100	90-100	35-43	14-18
	9-30	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-49	17-25
	30-38	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0-5	90-100	85-99	80-95	70-90	32-50	15-29
	38-60	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0-5	90-100	80-98	80-95	65-90	34-45	16-24

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
567B:												
Elkhart---------	0-13	Silt loam	CL, ML	A-7-6, A-4, A-6	0	0	100	100	97-100	95-100	30-45	9-18
	13-30	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	33-49	15-25
	30-49	Silt loam, silty clay loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	25-40	9-21
	49-80	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	24-38	9-19
570A:												
Martinsville----	0-12	Silt loam	CL, ML	A-6, A-4	0	0	100	85-100	70-100	50-90	24-37	7-13
	12-38	Clay loam, loam, sandy clay loam	CL, SC	A-6, A-7-6	0	0	95-100	85-100	70-100	40-82	31-46	13-25
	38-62	Sandy loam, loam, sandy clay loam, clay loam	CL, SC, CL-ML, SC-SM	A-4, A-6, A-2-4, A-2-6	0	0	95-100	85-100	61-95	25-70	20-40	6-21
	62-80	Stratified sandy loam to silt loam	CL-ML, SM, SC-SM, SC, CL, ML	A-2-6, A-6, A-4, A-2-4	0	0	95-100	85-100	59-95	20-85	16-32	2-13
570B:												
Martinsville----	0-5	Sandy loam	SC, SC-SM, SM, CL, CL-ML, ML	A-4, A-6	0	0	100	90-100	59-94	37-64	21-37	4-13
	5-12	Clay loam, loam, sandy clay loam	CL, SC	A-6, A-7-6	0	0	95-100	85-100	70-100	40-82	31-46	13-25
	12-24	Clay loam, silty clay loam, sandy clay loam, loam	CL, SC	A-6, A-7-6	0	0	95-100	85-100	70-93	40-88	31-45	13-23
	24-57	Sandy loam, sandy clay loam, silt loam	SC, CL	A-4, A-6, A-2-4, A-2-6	0	0	95-100	85-100	59-93	31-80	25-36	9-17
	57-60	Stratified sandy loam to silt loam	CL, CL-ML, SC-SM, SM, SC, ML	A-2-4, A-4, A-6, A-2-6	0	0	95-100	85-100	56-93	20-80	16-32	2-13

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
570C2:												
Martinsville----	0-6	Loam	CL-ML, CL, ML	A-7-6, A-4, A-6	0	0	100	85-100	70-100	50-90	21-44	4-21
	6-15	Clay loam, loam, sandy clay loam	CL, SC	A-7-6, A-6	0	0	95-100	85-100	70-100	42-82	31-46	13-25
	15-53	Stratified sandy loam to loam	CL, SC, CL-ML, SC-SM	A-2-4, A-2-6, A-4, A-6	0	0	95-100	85-100	59-95	25-70	20-40	6-21
	53-60	Stratified sandy loam to silt loam	SM, CL-ML, SC-SM, SC, CL, ML	A-6, A-2-6, A-2-4, A-4	0	0	95-100	85-100	58-95	20-80	16-32	2-13
614A:												
Chenoa----------	0-14	Silty clay loam	CL, ML, MH, CH	A-7-6, A-7-5	0	0	100	100	97-100	93-100	44-55	18-25
	14-34	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	100	97-100	93-100	46-58	25-33
	34-49	Silty clay loam	CL	A-6, A-7-6	0	0	95-100	85-98	80-95	70-95	38-48	19-25
	49-60	Silty clay loam	CL	A-6, A-7-6	0	0-3	95-100	85-98	80-95	70-95	37-46	19-25
614B2:												
Chenoa----------	0-8	Silty clay loam	ML, CH, MH, CL	A-7-6, A-7-5	0	0	100	100	97-100	95-100	40-52	19-25
	8-28	Silty clay loam	CL, CH	A-7-6	0	0	100	100	97-100	95-100	46-54	25-29
	28-56	Silty clay loam	CL	A-6, A-7-6	0	0	95-100	85-98	80-95	70-95	38-48	19-25
	56-60	Silty clay loam	CL	A-6, A-7-6	0	0-3	95-100	85-98	80-95	70-95	37-46	19-25
618C2:												
Senachwine------	0-6	Silt loam	CL	A-6	0	0	95-100	95-100	90-98	77-90	30-41	13-19
	6-22	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-99	75-90	37-46	19-25
	22-36	Loam, clay loam	CL	A-6	0	0-2	90-100	85-99	70-95	50-75	29-38	13-19
	36-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
618D2:												
Senachwine------	0-6	Silt loam	CL	A-6	0	0	95-100	95-100	90-100	75-90	30-41	13-19
	6-15	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-99	75-90	37-46	19-25
	15-28	Clay loam	CL	A-6, A-7-6	0	0	90-100	85-99	75-95	55-85	37-46	19-25
	28-34	Loam, clay loam	CL	A-6	0	0-2	90-100	85-99	70-95	50-75	29-38	13-19
	34-80	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	60-95	40-80	22-35	7-17

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
622B2:												
Wyanet----------	0-8	Silt loam	CL, ML	A-6, A-7-6	0	0	95-100	90-100	80-100	65-85	32-44	13-18
	8-24	Clay loam, silty clay loam	CL	A-6, A-7-6	0	0	90-100	85-100	75-95	50-85	38-48	19-25
	24-32	Loam	CL, SC	A-6	0	0	90-100	85-100	70-95	42-75	29-38	13-19
	32-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
622C2:												
Wyanet----------	0-8	Silt loam	CL, ML	A-7-6, A-6	0	0	95-100	90-100	80-100	65-90	32-44	13-18
	8-26	Clay loam, silty clay loam	CL	A-6, A-7-6	0	0	90-100	85-100	75-99	50-90	38-48	19-25
	26-34	Loam	CL	A-6	0	0	90-100	85-100	75-97	50-80	29-38	13-19
	34-80	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	60-95	40-80	22-35	7-17
663A:												
Clare-----------	0-11	Silt loam	CL, ML	A-6, A-4, A-7-6	0	0	100	97-100	95-100	85-100	30-45	9-18
	11-16	Silt loam	CL	A-6, A-4	0	0	100	97-100	95-100	85-100	26-40	9-19
	16-30	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	19-25
	30-44	Clay loam	CL	A-6, A-7-6	0	0	90-100	85-98	75-95	54-83	37-44	19-23
	44-60	Stratified silt loam to loam	CL-ML, CL	A-4, A-6	0	0	93-100	75-98	65-98	50-85	20-32	6-13
679A:												
Blackberry------	0-11	Silt loam	ML, CL	A-6, A-7-5, A-7-6	0	0	100	100	95-100	90-100	33-47	11-18
	11-47	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-47	17-25
	47-62	Stratified loam to silt loam	CL	A-4, A-6	0	0	90-100	85-100	70-99	50-85	25-36	9-17
	62-70	Stratified silt loam to loam to sandy loam	CL-ML, CL, ML, SC-SM, SM, SC	A-4, A-6	0	0	95-100	80-100	60-99	36-80	16-32	2-13

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
679B:												
Blackberry------	0-16	Silt loam	ML, CL	A-6, A-7-6, A-7-5	0	0	100	100	95-100	90-100	33-47	10-18
	16-47	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-47	17-25
	47-62	Stratified loam to silt loam	CL	A-4, A-6	0	0	90-100	85-100	70-99	50-85	25-36	9-17
	62-70	Stratified silt loam to loam to sandy loam	CL-ML, CL, ML, SC-SM, SM, SC	A-4, A-6	0	0	95-100	80-100	60-99	40-80	16-32	2-13
689B:												
Coloma----------	0-9	Sand	SC-SM, SP-SM, SP, SM	A-2-4, A-3	0	0	100	100	51-80	2-15	0-26	NP-6
	9-50	Sand, loamy sand	SC-SM, SP-SM, SP, SM	A-2-4, A-3	0	0	100	100	51-75	2-30	0-23	NP-6
	50-80	Stratified sand to loamy sand	SM, SP, SC-SM, SP-SM	A-2-4, A-3, A-4	0	0	100	100	51-100	2-40	0-25	NP-7
689D:												
Coloma----------	0-3	Sand	SC-SM, SP-SM, SP, SM	A-2-4, A-3	0	0	100	100	51-75	2-15	0-26	NP-6
	3-45	Sand, loamy sand	SC-SM, SP-SM, SP, SM	A-2-4, A-3	0	0	100	100	51-75	2-30	0-23	NP-6
	45-80	Stratified sand to loamy sand	SM, SP, SC-SM, SP-SM	A-2-4, A-3, A-4	0	0	100	100	51-100	2-40	0-25	NP-7
705B:												
Buckhart--------	0-15	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	100	95-100	35-44	13-18
	15-67	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	100	95-100	35-47	17-25
	67-80	Silt loam	CL	A-6	0	0	100	100	100	95-100	27-38	12-19
712A:												
Spaulding-------	0-22	Silty clay loam	ML, MH, CL	A-7-6, A-7-5	0	0	100	100	95-100	95-100	45-57	18-24
	22-38	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	38-49	19-25
	38-44	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	33-47	15-25
	44-80	Silt loam	CL	A-6	0	0	100	100	95-100	95-100	29-38	13-19

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
715A:												
Arrowsmith------	0-12	Silt loam	CL, ML	A-4, A-6, A-7-6, A-7-5	0	0	100	100	97-100	95-100	32-47	9-18
	12-30	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	38-48	19-25
	30-39	Silt loam	CL	A-4, A-6	0	0	100	100	96-100	94-100	22-38	7-19
	39-60	Silt loam, silt	CL, CL-ML	A-4, A-6	0	0	100	100	96-100	95-100	18-30	4-12
721A:												
Drummer---------	0-14	Silty clay loam	CL, ML, MH	A-7-6, A-7-5	0	0	100	97-100	95-100	85-98	46-60	18-24
	14-41	Silty clay loam	CL	A-6, A-7-6	0	0	100	97-100	95-100	85-98	38-49	19-25
	41-47	Loam	CL	A-6	0	0	95-100	90-100	75-95	55-80	29-38	13-19
	47-60	Stratified loam to sandy loam	SC-SM, CL-ML, CL, SC	A-4, A-2-4, A-2-6, A-6	0	0	95-100	80-100	55-95	30-65	20-32	6-13
Elpaso----------	0-21	Silty clay loam	MH, CL, ML	A-7-6, A-7-5	0	0	100	100	95-100	95-99	46-60	18-24
	21-44	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-99	38-48	19-25
	44-69	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	95-100	85-100	75-99	60-90	26-42	10-21
	69-80	Silty clay loam, silt loam	CL	A-6, A-4	0	0	95-100	85-100	75-99	60-90	24-38	9-19
802B:												
Orthents, loamy	0-10	Clay loam	CL	A-6, A-7-6	0	0-5	95-100	90-100	80-95	50-85	38-49	19-25
	10-60	Clay loam, silty clay loam, loam	CL	A-6, A-7-6	0-1	0-5	95-100	85-100	75-95	50-90	32-43	15-21
802D:												
Orthents, loamy	0-10	Clay loam	CL	A-6, A-7-6	0	0-5	95-100	90-100	85-100	50-80	38-49	19-25
	10-60	Clay loam, silty clay loam, loam	CL	A-6, A-7-6	0-1	0-5	95-100	85-100	85-100	50-85	32-42	15-21
835G.												
Earthen dam												
865.												
Pits, gravel												

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
883F:												
Senachwine------	0-6	Loam	CL, ML, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	50-75	23-39	6-15
	6-21	Clay loam, silty clay loam	CL	A-6, A-7-6	0-1	0-3	90-98	85-98	71-95	50-80	37-46	19-25
	21-39	Clay loam	CL	A-6, A-7-6	0-1	0-3	90-98	85-98	71-95	50-80	37-46	19-25
	39-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
Hennepin--------	0-6	Loam	CL	A-6, A-7-6	0	0	95-100	90-100	73-100	50-85	31-45	13-21
	6-15	Loam, clay loam, silt loam	CL, SC	A-6	0	0-1	85-100	80-100	64-100	41-85	27-40	12-21
	15-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
883G:												
Senachwine------	0-6	Loam	ML, CL, CL-ML	A-4, A-6	0	0	95-100	90-100	76-95	52-75	23-39	6-15
	6-21	Clay loam, silty clay loam	CL	A-6, A-7-6	0-1	0-2	90-98	85-98	71-95	50-80	37-46	19-25
	21-39	Clay loam	CL	A-6, A-7-6	0-1	0-3	90-98	85-98	71-95	50-80	37-46	19-25
	39-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
Hennepin--------	0-6	Loam	CL	A-6, A-7-6	0	0	95-100	90-100	73-100	50-85	31-45	13-21
	6-11	Loam, clay loam, silt loam	CL, SC	A-6	0	0-1	85-100	80-100	64-100	41-85	27-40	12-21
	11-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
964F:												
Miami-----------	0-6	Loam	CL-ML, CL, ML	A-6, A-4, A-7-6	0	0-1	100	95-100	80-100	50-85	21-42	4-18
	6-11	Loam	CL, CL-ML	A-6, A-4	0	0-1	100	95-100	80-100	50-85	19-38	4-19
	11-28	Clay loam	CL	A-6, A-7-6	0	0-3	90-100	85-98	75-95	55-85	37-46	19-25
	28-47	Loam	CL-ML, SC, SC-SM, CL	A-4, A-6	0-1	0-3	90-100	85-98	75-95	45-75	20-32	6-13
	47-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
Hennepin--------	0-6	Silt loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-98	80-90	31-42	13-18
	6-19	Loam	CL, SC	A-6	0	0-1	90-100	80-100	70-96	41-77	29-38	13-19
	19-60	Loam	CL, SC	A-4, A-6	0-1	0-3	85-100	75-98	65-95	40-80	22-35	7-17
1100A:												
Palms-----------	0-41	Muck	PT	A-8	0	0	---	---	---	---	---	---
	41-60	Stratified sandy loam to silt loam	SM, ML, SC-SM, SC, CL, CL-ML	A-7-6, A-4, A-6	0	0	100	100	70-100	42-90	19-49	3-18

Table 19.--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	
1210L:												
Lena------------	0-24	Muck	PT	A-8	0	0	---	---	---	---	---	---
	24-60	Muck	PT	A-8	0	0	---	---	---	---	---	---
3092L:												
Sarpy-----------	0-10	Loamy fine sand	SC-SM, SM	A-2-4	0	0	100	100	76-97	16-35	0-24	NP-6
	10-60	Fine sand, loamy fine sand, sand, loamy sand	SP-SM, SM, SP	A-2-4, A-3	0	0	90-100	85-100	57-88	3-35	0-19	NP-2
3360L:												
Slacwater-------	0-6	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	100	90-100	84-100	29-43	9-18
	6-60	Silt loam, silty clay loam	CL, CL-ML	A-6, A-7-6, A-4	0	0	100	100	90-100	85-100	18-44	4-25
7070A:												
Beaucoup--------	0-16	Silty clay loam	CL, MH, ML	A-7-5, A-7-6	0	0	100	100	98-100	85-100	47-57	18-24
	16-47	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	100	85-100	39-49	19-25
	47-60	Stratified silty clay loam to very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	51-95	21-41	6-21
8073A:												
Ross------------	0-32	Loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	90-100	80-100	70-96	50-77	26-45	6-18
	32-39	Silt loam	CL	A-6	0	0	100	97-100	95-100	85-100	30-40	13-19
	39-60	Silt loam	CL	A-6	0	0	90-100	80-100	74-98	58-85	29-38	13-19
8074A:												
Radford---------	0-21	Silt loam	CL, ML	A-6, A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	35-47	10-18
	21-29	Stratified silt loam to silty clay loam	ML, CL	A-6, A-7-6	0	0	100	97-100	95-100	85-100	30-44	11-18
	29-60	Silty clay loam	ML, MH, CL	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	43-57	18-24
8077A:												
Huntsville------	0-10	Silt loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	32-45	11-18
	10-27	Silt loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	32-45	11-18
	27-52	Silt loam	CL, ML	A-6, A-7-6	0	0	100	97-100	95-100	85-100	30-44	11-18
	52-80	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	97-100	95-100	85-100	28-44	9-18

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8107A:												
Sawmill---------	0-26	Silty clay loam	MH, CL, ML	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	45-60	18-24
	26-53	Silty clay loam	MH, CL	A-7-6, A-7-5	0	0	100	97-100	85-100	80-95	41-60	19-24
	53-60	Silty clay loam, clay loam	CH, CL	A-6, A-7-6	0	0	100	97-100	85-100	80-95	39-51	19-25
8304A:												
Landes----------	0-20	Fine sandy loam	SC, SC-SM, SM, ML, CL-ML, CL	A-2-4, A-6, A-2-6, A-4	0	0	100	90-100	75-100	30-70	20-36	3-13
	20-26	Loam, very fine sandy loam, fine sandy loam	SC-SM, SM, CL-ML, SC, CL, ML	A-2-4, A-4, A-6, A-2-6	0	0	100	90-100	76-100	30-70	17-33	2-12
	26-80	Loamy sand, loamy fine sand, sand	SC, SC-SM, SM	A-2-4, A-4	0	0	100	85-100	62-100	13-50	16-27	2-10
8368L:												
Raveenwash------	0-6	Silt loam	ML, CL	A-4, A-6	0	0	100	90-100	80-100	60-90	23-35	7-13
	6-80	Stratified sand to silt loam	CL-ML, ML, SC, SM, CL, SC-SM	A-4, A-6	0	0	100	90-100	75-100	45-80	16-30	2-12
8400L:												
Calco-----------	0-36	Silty clay loam	CL, MH	A-7-5, A-7-6	0	0	100	100	95-100	85-100	48-60	19-24
	36-57	Silty clay loam	MH, CH, CL	A-7-6	0	0	100	100	95-100	85-100	45-55	21-25
	57-63	Silty clay loam	CH, CL	A-7-6	0	0	100	97-100	95-100	85-100	43-53	21-25
	63-80	Silty clay loam, loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	75-95	29-43	12-18
8402A:												
Colo------------	0-8	Silt loam	CL, ML	A-7-6, A-6, A-7-5	0	0	100	100	95-100	85-100	35-46	13-18
	8-44	Silty clay loam	MH, CH, CL	A-7-5, A-7-6	0	0	100	100	97-100	85-100	43-53	18-25
	44-64	Silty clay loam	CL	A-7-6	0	0	100	97-100	85-100	80-98	41-51	19-25
	64-80	Silty clay loam, clay loam	CH, CL	A-6, A-7-6	0	0	100	97-100	85-100	80-98	39-51	19-25

Table 19.--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	
8451A:												
Lawson----------	0-28	Silt loam	CL, ML	A-6, A-7-6, A-7-5	0	0	100	98-100	90-100	85-100	35-47	11-18
	28-60	Silt loam	CL	A-6	0	0	100	98-100	90-100	85-100	28-40	12-19

Table 20.--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	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
17A:														
Keomah--------------	0-11	0-7	67-84	16-26	1.35-1.45	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	11-18	0-7	67-84	16-26	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.49	.49			
	18-33	0-7	51-65	35-42	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.1-0.5	.37	.37			
	33-51	0-7	58-73	27-35	1.35-1.45	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	51-89	0-7	66-85	15-27	1.40-1.60	0.2-2	0.19-0.22	0.0-2.9	0.0-0.2	.49	.49			
17B2:														
Keomah--------------	0-6	0-7	67-84	16-26	1.30-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-36	0-7	51-65	35-42	1.30-1.45	0.06-0.6	0.18-0.20	6.0-8.9	0.0-0.5	.37	.37			
	36-47	0-7	66-85	15-27	1.40-1.60	0.2-2	0.19-0.22	0.0-2.9	0.0-0.5	.43	.43			
	47-60	0-7	66-85	15-27	1.40-1.60	0.2-2	0.19-0.22	0.0-2.9	0.0-0.2	.49	.49			
25G:														
Hennepin------------	0-4	15-55	20-65	20-27	1.20-1.40	0.6-2	0.14-0.17	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-16	15-55	20-67	18-30	1.30-1.60	0.6-2	0.11-0.15	0.0-2.9	0.0-0.5	.32	.32			
	16-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
27C2:														
Miami---------------	0-7	15-20	53-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-11	15-20	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.32	.32			
	11-23	20-40	25-53	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.24	.28			
	23-36	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	36-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
27D2:														
Miami---------------	0-4	15-20	53-65	20-27	1.35-1.55	0.6-2	0.14-0.17	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	4-12	15-20	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.2-0.5	.32	.32			
	12-28	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	0.2-0.5	.24	.28			
	28-33	20-40	25-53	27-35	1.50-1.70	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.24	.28			
	33-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
43A:														
Ipava---------------	0-10	2-7	66-83	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	10-18	2-7	58-71	27-35	1.20-1.40	0.6-2	0.18-0.21	3.0-5.9	1.5-3.5	.37	.37			
	18-31	2-7	48-63	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-1.5	.37	.37			
	31-50	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	50-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
43B:														
Ipava---------------	0-17	0-7	66-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	17-58	0-7	50-65	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	58-60	0-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
60C2:														
La Rose-------------	0-7	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.17	0.0-2.9	1.5-3.5	.32	.37	5	6	48
	7-19	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.28			
	19-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
60C3:														
La Rose-------------	0-6	15-20	45-53	27-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.5-1.0	.32	.32	4	6	48
	6-10	19-40	25-53	26-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	10-24	20-40	25-53	26-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	24-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
61A:														
Atterberry----------	0-9	2-7	68-78	15-27	1.25-1.45	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-17	2-7	69-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	17-48	2-7	60-73	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	48-60	2-7	66-80	15-27	1.30-1.50	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.49	.49			
67A:														
Harpster------------	0-18	3-15	50-70	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	4.5-6.5	.24	.24	5	4L	86
	18-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	1.5-3.0	.37	.37			
	41-56	3-27	58-82	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.5-1.0	.49	.49			
	56-60	30-50	28-55	15-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.1-0.5	.37	.37			
68A:														
Sable---------------	0-23	1-7	58-72	27-35	1.15-1.35	0.6-2	0.17-0.22	3.0-5.9	4.5-6.0	.24	.24	5	6	48
	23-38	1-7	58-72	27-35	1.35-1.45	0.6-2	0.13-0.21	3.0-5.9	0.5-1.5	.37	.37			
	38-47	1-7	66-75	24-27	1.30-1.50	0.6-2	0.13-0.23	0.0-2.9	0.1-0.5	.49	.49			
	47-60	1-7	66-79	20-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.55	.55			
86B:														
Osco----------------	0-14	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-55	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.49	.49			
91A:														
Swygert-------------	0-12	2-15	50-71	27-35	1.30-1.50	0.2-0.6	0.19-0.22	3.0-5.9	3.0-5.0	.20	.20	4	6	48
	12-26	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	26-51	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	51-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
91B2:														
Swygert-------------	0-7	2-15	47-68	30-38	1.35-1.55	0.2-0.6	0.18-0.21	3.0-5.9	2.0-4.0	.24	.24	4	6	48
	7-30	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	30-48	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	48-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
125A:														
Selma---------------	0-6	20-45	28-60	20-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.24	.24	5	6	48
	6-13	20-45	20-53	27-35	1.40-1.60	0.6-2	0.17-0.19	3.0-5.9	3.0-5.0	.17	.17			
	13-44	15-62	6-67	18-32	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-2.0	.32	.32			
	44-80	30-90	0-63	7-18	1.60-1.90	2-6	0.07-0.19	0.0-2.9	0.0-1.0	.24	.24			
131A:														
Alvin---------------	0-8	70-85	5-20	5-10	1.45-1.65	6-20	0.09-0.12	0.0-2.9	0.5-1.0	.02	.02	5	2	134
	8-26	48-70	12-30	15-22	1.40-1.65	2-6	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	26-60	65-95	0-32	3-10	1.45-1.65	2-6	0.05-0.09	0.0-2.9	0.0-0.3	.05	.05			
131B:														
Alvin---------------	0-10	55-70	15-35	10-15	1.45-1.65	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	10-16	50-70	15-40	10-15	1.45-1.65	2-6	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			
	16-47	45-70	12-40	15-18	1.40-1.65	2-6	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	47-80	65-95	0-32	3-10	1.45-1.65	2-6	0.05-0.09	0.0-2.9	0.0-0.3	.05	.05			
131C:														
Alvin---------------	0-9	55-70	15-35	10-15	1.45-1.65	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	9-19	45-70	15-40	10-15	1.45-1.65	2-6	0.14-0.19	0.0-2.9	0.0-0.5	.32	.32			
	19-32	45-70	12-40	15-18	1.40-1.65	2-6	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	32-60	65-95	0-32	3-10	1.45-1.65	2-6	0.08-0.12	0.0-2.9	0.0-0.3	.05	.05			
131D:														
Alvin---------------	0-5	55-70	15-35	10-15	1.45-1.65	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	5-14	55-70	15-35	10-15	1.45-1.65	2-6	0.12-0.14	0.0-2.9	0.0-0.5	.32	.32			
	14-33	45-70	12-40	15-20	1.40-1.65	2-6	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	33-80	65-95	0-32	3-10	1.45-1.65	2-6	0.05-0.09	0.0-2.9	0.0-0.3	.05	.05			
131F:														
Alvin---------------	0-6	55-70	15-35	10-15	1.45-1.65	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.20	.20	5	3	86
	6-13	55-70	15-35	10-15	1.45-1.65	2-6	0.12-0.14	0.0-2.9	0.0-0.5	.24	.24			
	13-40	45-70	12-40	15-20	1.40-1.65	2-6	0.12-0.18	0.0-2.9	0.0-0.5	.24	.24			
	40-80	65-95	0-32	3-10	1.45-1.65	2-6	0.05-0.09	0.0-2.9	0.0-0.3	.15	.15			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
134A:														
Camden--------------	0-7	2-7	66-83	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-12	2-7	66-83	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	0.1-0.5	.49	.49			
	12-26	2-7	58-71	22-35	1.40-1.60	0.6-2	0.14-0.24	3.0-5.9	0.1-0.5	.37	.37			
	26-53	30-50	28-50	18-30	1.45-1.65	0.6-2	0.11-0.22	3.0-5.9	0.0-0.5	.32	.32			
	53-60	65-80	14-25	5-20	1.40-1.70	0.6-6	0.12-0.22	0.0-2.9	0.0-0.5	.28	.28			
134B:														
Camden--------------	0-9	2-7	66-83	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-15	2-7	66-83	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	0.1-0.5	.49	.49			
	15-34	2-7	58-71	22-35	1.40-1.60	0.6-2	0.14-0.24	3.0-5.9	0.1-0.5	.37	.37			
	34-40	30-50	28-50	18-30	1.45-1.65	0.6-2	0.11-0.22	3.0-5.9	0.0-0.5	.32	.32			
	40-60	65-85	1-25	5-20	1.40-1.70	0.6-6	0.12-0.22	0.0-2.9	0.0-0.5	.28	.28			
134C2:														
Camden--------------	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	30-50	28-48	22-30	1.45-1.65	0.6-2	0.11-0.14	3.0-5.9	0.0-0.5	.32	.32			
	43-80	65-80	5-25	5-25	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.3	.28	.28			
145B:														
Saybrook------------	0-15	2-15	58-82	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	15-32	2-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.43	.43			
	32-36	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.32			
	36-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
145B2:														
Saybrook------------	0-8	2-15	58-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	8-28	2-15	55-72	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	28-31	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	31-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
145C2:														
Saybrook------------	0-9	2-15	58-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-30	2-15	55-72	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.43	.43			
	30-36	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.32			
	36-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
148B:														
Proctor-------------	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-28	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	28-33	30-70	0-50	18-30	1.30-1.55	0.6-2	0.13-0.16	3.0-5.9	0.2-1.0	.32	.32			
	33-60	30-85	0-50	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
152A:														
Drummer	0-14	3-15	50-70	27-35	1.20-1.40	0.6-2	0.15-0.21	3.0-5.9	4.5-7.0	.24	.24	5	6	48
	14-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.13-0.19	3.0-5.9	0.8-2.0	.37	.37			
	41-47	25-45	28-50	20-27	1.45-1.65	0.6-2	0.10-0.16	0.0-2.9	0.2-0.5	.32	.32			
	47-60	45-65	25-45	10-20	1.55-1.75	0.6-2	0.08-0.14	0.0-2.9	0.1-0.3	.24	.24			
154A:														
Flanagan	0-18	2-7	66-78	20-27	1.25-1.45	0.6-2	0.16-0.22	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	18-38	2-7	53-63	35-40	1.30-1.50	0.2-0.6	0.11-0.17	6.0-8.9	0.5-1.8	.37	.37			
	38-45	3-15	50-72	25-35	1.30-1.50	0.6-2	0.13-0.19	3.0-5.9	0.1-0.5	.37	.37			
	45-49	15-30	45-65	20-27	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	0.1-0.5	.37	.37			
	49-80	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
154B:														
Flanagan	0-10	2-7	66-78	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	10-17	2-7	58-71	27-35	1.20-1.40	0.6-2	0.18-0.21	3.0-5.9	1.5-3.5	.37	.37			
	17-42	2-7	51-63	27-42	1.25-1.45	0.2-0.6	0.11-0.17	6.0-8.9	0.0-1.0	.37	.37			
	42-53	15-20	45-58	27-35	1.45-1.70	0.6-2	0.13-0.19	3.0-5.9	0.0-0.2	.37	.37			
	53-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
171B:														
Catlin	0-11	1-7	66-81	18-27	1.30-1.40	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.37	.37	5	6	48
	11-16	1-7	58-72	27-35	1.25-1.40	0.6-2	0.17-0.20	3.0-5.9	1.5-3.5	.37	.37			
	16-41	2-8	58-70	27-35	1.35-1.45	0.6-2	0.14-0.20	3.0-5.9	0.5-1.5	.37	.37			
	41-45	20-40	25-53	27-35	1.45-1.55	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.28	.28			
	45-80	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
171B2:														
Catlin	0-8	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	8-41	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	41-47	25-40	33-50	15-27	1.50-1.70	0.6-2	0.14-0.18	0.0-2.9	0.1-0.5	.32	.32			
	47-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
171C2:														
Catlin	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-40	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	40-50	3-15	58-72	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	50-55	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.28	.32			
	55-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
194C2:														
Morley	0-7	5-20	45-60	27-35	1.40-1.60	0.2-0.6	0.18-0.22	3.0-5.9	1.0-2.0	.28	.28	5	6	48
	7-10	5-21	45-60	27-40	1.55-1.70	0.2-0.6	0.11-0.15	3.0-5.9	0.5-1.0	.37	.37			
	10-26	5-21	45-60	27-50	1.60-1.80	0.06-0.6	0.07-0.12	6.0-8.9	0.2-0.5	.37	.37			
	26-36	5-21	45-60	27-50	1.60-1.80	0.06-0.6	0.07-0.12	6.0-8.9	0.2-0.5	.37	.37			
	36-60	5-22	40-60	27-40	1.60-1.80	0.06-0.6	0.07-0.12	3.0-5.9	0.2-0.5	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
198A:														
Elburn--------------	0-16	2-7	66-76	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-49	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	49-58	30-55	30-55	15-20	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	0.1-0.5	.37	.37			
	58-62	60-80	10-25	5-15	1.50-1.70	2-6	0.06-0.10	0.0-2.9	0.1-0.5	.24	.24			
199A:														
Plano---------------	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-60	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	60-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			
199B:														
Plano---------------	0-15	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	15-45	0-10	55-80	20-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.37	.37			
	45-55	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	55-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			
223B2:														
Varna---------------	0-7	5-20	45-60	27-35	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.24	.24	4	6	48
	7-26	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	6.0-8.9	0.5-1.5	.37	.37			
	26-38	5-20	35-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	6.0-8.9	0.2-1.0	.37	.37			
	38-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
223C2:														
Varna---------------	0-8	5-20	45-60	27-35	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.28	.28	4	6	48
	8-23	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	6.0-8.9	0.5-1.5	.37	.37			
	23-43	5-20	35-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	6.0-8.9	0.2-1.0	.37	.37			
	43-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
223D:														
Varna---------------	0-12	5-20	45-60	27-35	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.20	.20	4	6	48
	12-26	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	6.0-8.9	0.5-1.5	.37	.37			
	26-41	5-20	35-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	6.0-8.9	0.2-1.0	.37	.37			
	41-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.43	.43			
224D2:														
Strawn--------------	0-5	8-40	45-65	18-27	1.15-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-15	10-35	40-55	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	15-21	10-35	40-55	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	21-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
233B2:														
Birkbeck------------	0-9	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	1.0-2.5	.49	.49	5	6	48
	9-48	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.43	.43			
	48-55	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	55-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
233C2:														
Birkbeck------------	0-7	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.5-2.5	.43	.43	5	6	48
	7-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	46-57	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	57-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
233D2:														
Birkbeck------------	0-7	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	1.0-2.5	.43	.43	5	6	48
	7-46	2-7	58-71	26-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	46-53	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
	53-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
236A:														
Sabina--------------	0-8	2-10	63-78	18-27	1.25-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-12	2-10	65-80	18-25	1.35-1.55	0.2-0.6	0.20-0.22	0.0-2.9	0.1-1.0	.55	.55			
	12-43	2-10	48-63	35-42	1.35-1.55	0.2-0.6	0.15-0.19	6.0-8.9	0.1-1.0	.37	.37			
	43-50	15-35	30-65	20-35	1.50-1.75	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.32	.32			
	50-80	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
241C2:														
Chatsworth----------	0-6	1-10	30-60	35-60	1.35-1.60	0.02-0.06	0.09-0.16	3.0-5.9	1.0-2.0	.28	.28	2	4	86
	6-31	1-10	30-64	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	31-60	5-15	35-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
241C3:														
Chatsworth----------	0-5	0-10	30-60	40-60	1.35-1.60	0.02-0.06	0.09-0.16	3.0-5.9	0.5-1.0	.32	.32	3	4	86
	5-16	0-10	30-65	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	16-60	5-15	35-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
243A:														
St. Charles---------	0-9	0-10	63-80	18-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-51	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	51-60	30-60	33-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
243B:														
St. Charles---------	0-8	0-10	63-80	18-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-50	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	30-60	25-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
279B2:														
Rozetta-------------	0-7	0-7	66-80	20-27	1.20-1.40	0.6-2	0.17-0.21	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-44	0-7	58-73	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.3-0.8	.37	.37			
	44-60	0-7	66-80	20-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
290A:														
Warsaw--------------	0-11	23-40	33-50	15-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.5-4.0	.24	.24	4	6	48
	11-28	25-50	20-50	20-32	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	28-32	35-70	0-47	18-30	1.40-1.65	0.6-2	0.10-0.16	0.0-2.9	0.2-1.5	.28	.32			
	32-80	80-98	0-18	2-8	1.50-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
322C2:														
Russell-------------	0-7	3-15	58-77	20-27	1.40-1.60	0.6-2	0.15-0.21	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-27	3-15	50-70	27-35	1.35-1.55	0.6-2	0.13-0.19	3.0-5.9	0.1-0.5	.43	.43			
	27-56	20-40	27-53	27-33	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.28			
	56-80	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
322D2:														
Russell-------------	0-7	3-15	58-77	20-27	1.40-1.60	0.6-2	0.15-0.21	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-29	3-15	50-70	27-35	1.35-1.55	0.6-2	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	29-47	20-40	27-53	27-33	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	47-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
327C2:														
Fox-----------------	0-5	15-28	45-58	27-31	1.35-1.55	0.6-2	0.14-0.17	3.0-5.9	1.0-2.5	.28	.28	4	6	48
	5-14	15-20	45-58	27-35	1.55-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.32	.32			
	14-20	20-45	20-53	27-35	1.55-1.65	0.6-2	0.10-0.14	3.0-5.9	0.1-0.5	.32	.32			
	20-35	20-45	20-53	27-35	1.55-1.75	0.6-2	0.10-0.13	3.0-5.9	0.0-0.5	.28	.32			
	35-60	90-97	3-10	0-5	1.40-1.60	6-20	0.02-0.05	0.0-2.9	0.0-0.5	.02	.05			
330A:														
Peotone-------------	0-13	0-10	50-67	33-40	1.20-1.40	0.2-0.6	0.21-0.23	6.0-8.9	5.0-7.0	.24	.24	5	4	86
	13-50	0-10	45-65	35-45	1.30-1.60	0.2-0.6	0.11-0.20	6.0-8.9	0.5-3.0	.37	.37			
	50-60	0-20	38-75	25-42	1.40-1.65	0.2-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.43	.43			
356A:														
Elpaso--------------	0-21	1-10	55-72	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	6	48
	21-44	1-10	50-75	24-40	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	0.2-2.0	.37	.37			
	44-69	2-30	30-78	20-40	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	69-80	2-30	40-83	15-30	1.60-1.85	0.2-0.6	0.05-0.15	3.0-5.9	0.0-0.5	.43	.43			
369A:														
Waupecan------------	0-14	5-15	68-80	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	4	6	48
	14-34	5-15	50-70	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	34-51	35-75	5-50	10-30	1.55-1.75	0.6-6	0.08-0.18	0.0-2.9	0.2-0.5	.28	.32			
	51-60	84-99	0-15	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
369B:														
Waupecan------------	0-11	5-15	58-70	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	4	6	48
	11-40	5-15	50-60	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	40-43	40-75	10-35	10-25	1.55-1.75	2-6	0.08-0.18	0.0-2.9	0.2-0.5	.17	.24			
	43-60	85-97	0-12	3-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.2-0.5	.02	.05			
375A:														
Rutland-------------	0-14	0-10	55-73	27-35	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	3.0-5.0	.28	.28	4	6	48
	14-36	0-10	45-65	35-45	1.30-1.55	0.2-0.6	0.18-0.20	6.0-8.9	0.2-2.0	.37	.37			
	36-44	0-15	50-80	20-35	1.35-1.55	0.2-0.6	0.18-0.22	3.0-5.9	0.2-1.0	.37	.37			
	44-52	1-15	25-59	40-60	1.45-1.70	0.06-0.6	0.08-0.12	6.0-8.9	0.0-0.5	.32	.32			
	52-60	1-15	20-59	40-65	1.65-1.85	0.02-0.06	0.03-0.07	6.0-8.9	0.0-0.5	.37	.37			
375B:														
Rutland-------------	0-13	0-10	55-73	27-35	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	3.0-4.5	.28	.28	4	6	48
	13-40	0-10	45-65	35-45	1.30-1.55	0.2-0.6	0.16-0.18	6.0-8.9	0.2-2.0	.37	.37			
	40-50	1-15	25-59	40-60	1.45-1.70	0.06-0.6	0.08-0.12	6.0-8.9	0.0-0.5	.32	.32			
	50-60	1-15	20-59	40-65	1.65-1.85	0.02-0.06	0.03-0.07	6.0-8.9	0.0-0.5	.37	.37			
375B2:														
Rutland-------------	0-9	0-10	55-73	27-35	1.20-1.40	0.6-2	0.20-0.22	3.0-5.9	2.0-4.0	.37	.37	4	6	48
	9-37	0-10	45-65	35-45	1.30-1.55	0.2-0.6	0.18-0.20	6.0-8.9	0.2-2.0	.37	.37			
	37-46	1-15	25-59	40-60	1.45-1.70	0.06-0.6	0.08-0.12	6.0-8.9	0.0-0.5	.32	.32			
	46-80	1-15	20-59	40-65	1.65-1.85	0.02-0.06	0.03-0.07	6.0-8.9	0.0-0.5	.37	.37			
379A:														
Dakota--------------	0-14	30-50	23-50	14-27	1.40-1.50	0.6-2	0.20-0.22	0.0-2.9	2.0-5.0	.24	.24	4	6	48
	14-34	25-60	15-50	18-32	1.30-1.55	0.6-2	0.14-0.19	0.0-2.9	0.5-2.0	.32	.32			
	34-60	85-98	1-10	1-5	1.55-1.65	6-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.05			
383B:														
Newvienna-----------	0-8	0-7	66-80	18-27	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-55	0-7	58-73	25-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	55-64	0-7	68-80	15-25	1.35-1.45	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	64-80	0-7	68-80	15-25	1.35-1.45	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.49	.49			
387A:														
Ockley--------------	0-9	23-37	36-50	11-27	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	0.5-3.0	.32	.32	4	6	48
	9-18	9-30	36-57	22-34	1.45-1.60	0.6-2	0.17-0.22	3.0-5.9	0.0-0.5	.32	.32			
	18-30	40-70	10-30	20-32	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	30-50	40-70	10-30	18-32	1.40-1.55	0.6-2	0.06-0.18	3.0-5.9	0.0-0.5	.32	.32			
	50-60	70-98	1-29	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
388B2:														
Wenona--------------	0-9	1-10	63-79	20-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-42	1-10	50-64	35-42	1.30-1.55	0.2-0.6	0.18-0.20	6.0-8.9	0.2-2.0	.37	.37			
	42-52	1-15	25-59	40-60	1.45-1.70	0.06-0.6	0.08-0.12	6.0-8.9	0.0-0.5	.32	.32			
	52-60	2-15	25-58	40-65	1.65-1.85	0.02-0.06	0.05-0.08	6.0-8.9	0.0-0.5	.37	.37			
388C2:														
Wenona--------------	0-6	1-10	60-72	27-39	1.20-1.40	0.6-2	0.20-0.22	3.0-5.9	2.0-4.0	.37	.37	5	6	48
	6-45	1-10	50-64	35-42	1.30-1.55	0.2-0.6	0.18-0.20	6.0-8.9	0.2-2.0	.37	.37			
	45-54	1-15	25-59	40-60	1.45-1.70	0.06-0.6	0.08-0.12	6.0-8.9	0.0-0.5	.32	.32			
	54-60	2-15	25-58	40-65	1.65-1.85	0.02-0.06	0.05-0.08	6.0-8.9	0.0-0.5	.37	.37			
435A:														
Streator------------	0-13	1-10	50-72	27-40	1.20-1.40	0.6-2	0.22-0.24	6.0-8.9	4.0-7.0	.24	.24	5	4	86
	13-42	1-10	45-64	35-45	1.30-1.55	0.2-0.6	0.18-0.20	6.0-8.9	0.5-2.0	.37	.37			
	42-68	2-15	25-58	40-60	1.45-1.70	0.06-0.6	0.08-0.12	6.0-8.9	0.0-0.5	.32	.32			
	68-80	2-15	25-58	40-60	1.65-1.85	0.02-0.06	0.03-0.07	6.0-8.9	0.0-0.5	.37	.37			
440A:														
Jasper--------------	0-18	10-30	50-75	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	5	5	56
	18-37	15-55	20-65	20-32	1.35-1.50	0.6-2	0.17-0.19	3.0-5.9	0.5-1.5	.32	.32			
	37-44	45-65	10-43	12-25	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	44-60	25-80	10-65	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
440B:														
Jasper--------------	0-14	10-30	50-75	12-25	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	5	5	56
	14-43	15-55	20-65	20-32	1.35-1.50	0.6-2	0.17-0.19	3.0-5.9	0.5-1.5	.32	.32			
	43-52	45-65	10-43	12-25	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	52-60	25-80	10-65	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
440C2:														
Jasper--------------	0-8	18-35	43-60	10-22	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	5	5	56
	8-43	15-55	20-65	20-32	1.35-1.50	0.6-2	0.17-0.19	3.0-5.9	0.5-1.5	.32	.32			
	43-50	45-65	10-43	12-25	1.40-1.60	0.6-2	0.14-0.16	0.0-2.9	0.0-0.5	.28	.28			
	50-60	25-80	10-65	5-20	1.50-1.70	0.6-6	0.10-0.21	0.0-2.9	0.0-0.5	.24	.24			
533.														
Urban land														
536.														
Dumps, mine														

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
541B2:														
Graymont------------	0-8	0-10	63-78	22-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-24	0-10	55-75	25-35	1.25-1.45	0.6-2	0.16-0.20	3.0-5.9	0.0-2.0	.37	.37			
	24-35	10-20	40-68	22-40	1.50-1.75	0.06-0.6	0.14-0.18	3.0-5.9	0.0-0.5	.32	.32			
	35-60	10-20	46-66	24-34	1.50-1.75	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.37	.37			
541C2:														
Graymont------------	0-9	0-10	63-78	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	9-30	0-10	55-75	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	30-38	10-20	40-68	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.32	.32			
	38-60	10-20	50-66	24-34	1.60-1.80	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.5	.37	.37			
567B:														
Elkhart-------------	0-13	1-7	66-84	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	13-30	1-7	58-77	22-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-2.0	.37	.37			
	30-49	1-7	63-84	15-30	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	0.1-0.5	.43	.43			
	49-80	1-7	66-84	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
570A:														
Martinsville--------	0-12	20-38	50-68	12-20	1.30-1.60	0.6-2	0.18-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	12-38	25-60	15-45	20-35	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	38-62	35-75	10-45	10-30	1.40-1.65	0.6-2	0.10-0.19	0.0-2.9	0.0-0.5	.28	.28			
	62-80	15-80	10-70	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
570B:														
Martinsville--------	0-5	44-60	30-48	8-20	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	5-12	25-60	15-45	20-35	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.37	.37			
	12-24	12-60	7-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	24-57	20-65	10-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	57-60	20-80	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
570C2:														
Martinsville--------	0-6	10-45	35-70	8-31	1.30-1.60	0.6-2	0.18-0.24	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	6-15	25-55	15-45	20-35	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	15-53	35-75	10-45	10-30	1.40-1.65	0.6-2	0.10-0.19	0.0-2.9	0.0-0.5	.28	.28			
	53-60	15-80	10-70	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
614A:														
Chenoa--------------	0-14	1-8	57-72	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-5.0	.28	.28	4	6	48
	14-34	1-8	47-64	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-1.5	.37	.37			
	34-49	5-20	45-63	27-35	1.50-1.70	0.2-0.6	0.10-0.12	3.0-5.9	0.5-1.5	.28	.32			
	49-60	5-20	45-63	27-35	1.60-1.80	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.3	.32	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
614B2:														
Chenoa---------------	0-8	1-7	58-72	27-35	1.30-1.50	0.6-2	0.16-0.19	3.0-5.9	1.5-3.5	.37	.37	4	6	48
	8-28	1-7	53-64	35-40	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-1.5	.43	.43			
	28-56	5-20	45-63	27-35	1.50-1.70	0.2-0.6	0.10-0.12	3.0-5.9	0.5-1.5	.28	.32			
	56-60	5-20	45-63	27-35	1.60-1.80	0.06-0.2	0.05-0.10	3.0-5.9	0.0-0.3	.32	.43			
618C2:														
Senachwine----------	0-6	15-20	53-65	20-27	1.35-1.55	0.6-2	0.18-0.20	0.0-2.9	0.5-2.0	.32	.32	5	6	48
	6-22	15-21	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.32	.32			
	22-36	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	36-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
618D2:														
Senachwine----------	0-6	15-20	53-65	20-27	1.35-1.55	0.6-2	0.18-0.20	0.0-2.9	0.5-2.0	.32	.32	5	6	48
	6-15	15-21	45-58	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.32	.37			
	15-28	20-40	25-53	27-35	1.45-1.65	0.6-2	0.14-0.17	3.0-5.9	0.1-0.5	.28	.32			
	28-34	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	34-80	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
622B2:														
Wyanet--------------	0-8	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.22	0.0-2.9	1.5-3.5	.28	.28	5	6	48
	8-24	15-40	25-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	24-32	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
	32-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
622C2:														
Wyanet--------------	0-8	15-30	50-65	20-27	1.40-1.60	0.6-2	0.14-0.22	0.0-2.9	1.5-3.5	.28	.28	5	6	48
	8-26	15-40	25-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.37			
	26-34	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	34-80	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
663A:														
Clare---------------	0-11	3-15	58-82	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	11-16	3-15	58-82	15-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	0.5-1.5	.37	.37			
	16-30	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.32	.32			
	30-44	20-40	28-53	27-32	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.24	.28			
	44-60	25-40	40-55	10-20	1.60-1.80	0.6-2	0.14-0.17	0.0-2.9	0.0-0.5	.32	.49			
679A:														
Blackberry----------	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-47	0-10	55-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	47-62	30-50	35-55	15-25	1.40-1.60	0.6-2	0.11-0.22	0.0-2.9	0.1-0.5	.32	.32			
	62-70	30-60	20-55	5-20	1.50-1.70	0.6-2	0.13-0.17	0.0-2.9	0.1-0.5	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
679B:														
Blackberry----------	0-16	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	16-47	1-10	55-74	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	47-62	20-50	35-55	15-25	1.40-1.60	0.6-2	0.11-0.22	0.0-2.9	0.1-0.5	.32	.32			
	62-70	30-60	20-55	5-20	1.50-1.70	0.6-2	0.13-0.17	0.0-2.9	0.1-0.5	.37	.37			
689B:														
Coloma--------------	0-9	85-100	0-15	0-10	1.35-1.65	6-20	0.05-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	220
	9-50	75-100	0-25	0-10	1.35-1.65	6-20	0.05-0.12	0.0-2.9	0.0-0.5	.15	.15			
	50-80	70-95	2-28	2-12	1.50-1.65	2-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
689D:														
Coloma--------------	0-3	85-100	0-15	0-10	1.35-1.65	6-20	0.05-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	220
	3-45	85-100	0-15	0-10	1.35-1.65	6-20	0.05-0.12	0.0-2.9	0.0-0.5	.15	.15			
	45-80	70-95	2-28	2-12	1.50-1.65	2-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
705B:														
Buckhart------------	0-15	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	15-67	0-7	58-75	25-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	67-80	0-7	66-82	18-27	1.35-1.45	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
712A:														
Spaulding-----------	0-22	1-7	58-72	27-35	1.05-1.25	0.6-2	0.21-0.24	3.0-5.9	4.0-6.0	.24	.24	5	4L	86
	22-38	1-7	58-72	27-35	1.20-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	38-44	1-7	66-75	22-35	1.25-1.55	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.37	.37			
	44-80	1-7	66-79	20-27	1.30-1.55	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
715A:														
Arrowsmith----------	0-12	1-7	66-84	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	12-30	1-7	58-72	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	30-39	1-7	66-87	12-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.43	.43			
	39-60	1-7	75-91	8-18	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.55	.55			
721A:														
Drummer-------------	0-14	3-15	50-70	27-35	1.20-1.40	0.6-2	0.15-0.21	3.0-5.9	4.5-7.0	.24	.24	5	6	48
	14-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.13-0.19	3.0-5.9	0.5-2.0	.37	.37			
	41-47	25-45	28-50	20-27	1.45-1.65	0.6-2	0.10-0.16	0.0-2.9	0.2-0.5	.32	.32			
	47-60	45-65	25-45	10-20	1.55-1.75	0.6-2	0.08-0.14	0.0-2.9	0.0-0.5	.28	.28			
Elpaso--------------	0-21	2-7	58-71	27-35	1.15-1.35	0.6-2	0.16-0.22	3.0-5.9	4.5-7.0	.24	.24	5	6	48
	21-44	2-7	58-71	27-35	1.20-1.40	0.6-2	0.14-0.20	3.0-5.9	0.5-1.5	.37	.37			
	44-69	15-30	50-70	15-30	1.35-1.60	0.6-2	0.12-0.18	3.0-5.9	0.1-0.5	.37	.37			
	69-80	15-30	50-70	15-27	1.45-1.65	0.2-0.6	0.13-0.19	0.0-2.9	0.0-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
802B:														
Orthents, loamy-----	0-10	20-45	20-53	27-35	1.50-1.70	0.2-0.6	0.16-0.20	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	10-60	15-50	20-63	22-30	1.40-1.75	0.06-2	0.12-0.16	3.0-5.9	0.0-1.0	.43	.43			
802D:														
Orthents, loamy-----	0-10	20-45	20-53	27-35	1.50-1.70	0.2-0.6	0.09-0.15	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	10-60	15-50	20-63	22-30	1.40-1.75	0.06-2	0.09-0.15	3.0-5.9	0.0-0.5	.43	.43			
835G.														
Earthen dam														
865.														
Pits, gravel														
883F:														
Senachwine----------	0-6	33-45	38-56	11-22	1.20-1.65	0.6-2	0.17-0.26	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	6-21	20-45	20-53	27-35	1.40-1.70	0.6-2	0.07-0.21	3.0-5.9	0.0-0.5	.32	.32			
	21-39	20-45	20-53	27-35	1.40-1.70	0.6-2	0.07-0.21	3.0-5.9	0.0-0.5	.32	.32			
	39-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
Hennepin------------	0-6	15-55	15-65	20-30	1.20-1.40	0.6-2	0.14-0.17	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	6-15	15-55	20-67	18-30	1.30-1.60	0.2-0.6	0.11-0.15	0.0-2.9	0.0-0.5	.32	.32			
	15-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
883G:														
Senachwine----------	0-6	33-45	33-56	11-22	1.20-1.65	0.6-2	0.17-0.26	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	6-21	20-45	20-53	27-35	1.40-1.70	0.6-2	0.07-0.21	3.0-5.9	0.0-0.5	.32	.32			
	21-39	20-45	20-53	27-35	1.40-1.70	0.6-2	0.07-0.21	3.0-5.9	0.0-0.5	.32	.32			
	39-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
Hennepin------------	0-6	15-55	15-65	20-30	1.20-1.40	0.6-2	0.14-0.17	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	6-11	15-55	20-67	18-30	1.30-1.60	0.2-0.6	0.11-0.15	0.0-2.9	0.0-0.5	.32	.32			
	11-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
964F:														
Miami---------------	0-6	26-52	28-50	8-27	1.40-1.60	0.6-2	0.13-0.17	0.0-2.9	1.0-2.5	.28	.28	5	5	56
	6-11	26-52	28-50	8-27	1.40-1.60	0.6-2	0.10-0.15	0.0-2.9	0.1-0.8	.32	.32			
	11-28	20-40	25-53	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	28-47	30-50	30-50	10-20	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.5	.43	.43			
	47-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			
Hennepin------------	0-6	15-20	53-65	20-27	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	1.0-2.5	.37	.37	3	6	48
	6-19	30-50	28-50	20-27	1.55-1.75	0.6-2	0.11-0.15	0.0-2.9	0.1-0.5	.32	.32			
	19-60	26-50	35-50	12-25	1.65-1.85	0.2-0.6	0.08-0.14	0.0-2.9	0.1-0.3	.37	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
1100A:														
Palms---------------	0-41	---	---	---	0.25-0.45	0.2-6	0.35-0.45	---	75-99	---	---	2	2	134
	41-60	15-55	35-70	7-27	1.45-1.75	0.2-2	0.14-0.22	0.0-2.9	0.5-6.0	.32	.32			
1210L:														
Lena----------------	0-24	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---	3	2	134
	24-60	---	---	---	0.15-0.45	2-6	0.35-0.45	---	65-99	---	---			
3092L:														
Sarpy---------------	0-10	70-90	0-28	2-10	1.20-1.50	6-20	0.05-0.09	0.0-2.9	0.5-1.0	.02	.02	5	2	134
	10-60	70-95	0-28	2-5	1.20-1.50	6-20	0.05-0.09	0.0-2.9	0.0-0.5	.02	.02			
3360L:														
Slacwater-----------	0-6	3-15	58-70	15-27	1.35-1.65	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.37	.37	5	4L	86
	6-60	3-15	58-80	8-35	1.35-1.55	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.49	.49			
7070A:														
Beaucoup------------	0-16	1-15	55-70	27-35	1.15-1.35	0.2-0.6	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	6	48
	16-47	1-15	55-70	27-35	1.30-1.50	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.32	.32			
	47-60	5-50	35-70	10-30	1.35-1.55	0.2-0.6	0.18-0.22	0.0-2.9	0.5-1.0	.32	.32			
8073A:														
Ross----------------	0-32	30-50	28-50	10-27	1.25-1.45	0.6-2	0.14-0.18	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	32-39	3-15	58-70	20-27	1.40-1.60	0.6-2	0.10-0.17	0.0-2.9	0.5-1.5	.32	.32			
	39-60	15-30	50-65	20-27	1.50-1.70	0.6-2	0.09-0.14	0.0-2.9	0.0-0.5	.32	.49			
8074A:														
Radford-------------	0-21	3-15	58-79	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	3.5-5.0	.32	.32	5	6	48
	21-29	3-15	58-79	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	1.5-3.5	.49	.49			
	29-60	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	3.0-6.0	.28	.28			
8077A:														
Huntsville----------	0-10	2-15	58-80	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	10-27	2-15	58-80	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.28	.28			
	27-52	2-15	58-80	18-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.28	.28			
	52-80	2-15	58-82	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.28	.28			
8107A:														
Sawmill-------------	0-26	2-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
	26-53	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	2.0-7.0	.32	.32			
	53-60	5-21	44-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.28	.28			
8304A:														
Landes--------------	0-20	50-70	10-43	7-20	1.40-1.60	2-6	0.11-0.15	0.0-2.9	1.0-2.5	.20	.20	4	3	86
	20-26	50-70	12-45	5-18	1.60-1.70	2-6	0.10-0.15	0.0-2.9	0.5-2.0	.24	.24			
	26-80	70-90	0-25	5-15	1.60-1.80	6-20	0.03-0.07	0.0-2.9	0.0-0.5	.02	.02			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8368L:														
Raveenwash----------	0-6	20-38	50-68	12-20	1.15-1.40	0.6-6	0.20-0.24	0.0-2.9	0.5-2.0	.43	.43	5	4L	86
	6-80	30-60	29-60	5-18	1.50-1.70	2-20	0.12-0.19	0.0-2.9	0.0-0.5	.49	.49			
8400L:														
Calco---------------	0-36	2-15	57-70	28-35	1.25-1.30	0.6-2	0.21-0.23	3.0-5.9	5.0-7.0	.28	.28	5	4L	86
	36-57	2-15	55-68	30-35	1.25-1.30	0.6-2	0.21-0.23	3.0-5.9	3.0-5.0	.32	.32			
	57-63	2-15	55-68	30-35	1.25-1.30	0.6-2	0.21-0.23	3.0-5.9	2.0-4.0	.32	.32			
	63-80	5-25	48-72	18-27	1.30-1.45	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32			
8402A:														
Colo----------------	0-8	2-15	59-78	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.32	.32	5	6	48
	8-44	2-15	55-68	27-35	1.25-1.35	0.6-2	0.18-0.20	3.0-5.9	3.0-4.0	.28	.28			
	44-64	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	2.0-3.0	.32	.32			
	64-80	5-21	44-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.28	.28			
8451A:														
Lawson--------------	0-28	3-15	58-79	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.32	.32	5	6	48
	28-60	3-15	58-79	18-27	1.30-1.50	0.6-2	0.18-0.23	0.0-2.9	0.5-1.5	.32	.32			

Table 21.--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	Calcium carbonate
	In	meq/100 g	meq/100 g	pH	Pct
17A:					
Keomah	0-11	10-26	---	5.6-7.3	0
	11-18	9.0-24	---	5.1-7.3	0
	18-33	28-41	---	5.1-6.5	0
	33-51	16-29	---	5.1-6.5	0
	51-89	8.0-18	---	6.1-7.3	0
17B2:					
Keomah	0-6	15-20	---	5.1-7.3	0
	6-36	23-31	---	5.1-7.0	0
	36-47	8.0-18	---	6.6-7.8	0-5
	47-60	8.0-18	---	6.6-7.8	0-15
25G:					
Hennepin	0-4	14-22	---	6.1-7.8	0-20
	4-16	11-19	---	6.1-8.4	10-30
	16-60	6.3-13	---	7.4-8.4	15-40
27C2:					
Miami	0-7	14-27	---	6.1-7.3	0
	7-11	12-24	---	5.6-7.3	0
	11-23	11-22	---	5.6-7.3	0
	23-36	9.0-19	---	5.6-7.8	0-5
	36-60	6.3-13	---	7.4-8.4	15-40
27D2:					
Miami	0-4	14-27	---	6.1-7.3	0
	4-12	12-24	---	5.6-7.3	0
	12-28	12-24	---	5.6-7.3	0
	28-33	12-24	---	6.6-7.8	0-10
	33-60	6.3-13	---	7.4-8.4	15-40
43A:					
Ipava	0-10	13-23	---	5.6-7.3	0
	10-18	22-29	---	5.6-7.3	0
	18-31	27-35	---	5.6-7.3	0
	31-50	20-27	---	6.6-7.8	0-5
	50-60	11-21	---	7.4-8.4	0-15
43B:					
Ipava	0-17	20-27	---	5.6-7.3	0
	17-58	22-27	---	5.6-7.8	0-5
	58-60	11-21	---	6.1-8.4	0-15
60C2:					
La Rose	0-7	10-22	---	6.1-7.3	0
	7-19	11-22	---	6.6-7.8	0-5
	19-60	6.3-13	---	7.4-8.4	15-40
60C3:					
La Rose	0-6	17-23	---	6.1-7.3	0
	6-10	11-22	---	6.6-7.3	0
	10-24	11-22	---	6.6-7.8	0-15
	24-60	6.3-13	---	7.4-8.4	15-40

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
61A:					
Atterberry	0-9	11-28	---	6.1-7.3	0
	9-17	9.0-24	---	5.6-6.5	0
	17-48	16-29	---	5.1-6.0	0
	48-60	9.0-23	---	5.6-7.8	0-8
67A:					
Harpster	0-18	23-27	---	7.9-8.4	15-40
	18-41	22-26	---	7.4-8.4	5-40
	41-56	12-20	---	7.9-8.4	5-40
	56-60	12-20	---	7.9-8.4	10-40
68A:					
Sable	0-23	23-29	---	5.6-6.5	0
	23-38	21-28	---	6.1-7.3	0
	38-47	18-21	---	6.6-7.8	0-5
	47-60	14-21	---	7.4-8.4	0-15
86B:					
Osco	0-14	17-22	---	5.1-7.3	0
	14-55	---	11-18	5.1-6.5	0
	55-60	14-23	---	5.6-7.8	0-15
91A:					
Swygert	0-12	20-31	---	5.6-7.3	0
	12-26	20-31	---	5.6-7.3	0
	26-51	10-25	---	7.4-8.4	2-20
	51-60	9.0-20	---	7.9-8.4	15-30
91B2:					
Swygert	0-7	20-31	---	5.6-7.3	0
	7-30	20-31	---	5.6-7.3	0
	30-48	10-25	---	7.4-8.4	2-20
	48-60	9.0-20	---	7.9-8.4	15-30
125A:					
Selma	0-6	20-28	---	6.1-7.8	0
	6-13	22-31	---	6.1-7.8	0
	13-44	11-23	---	6.1-8.4	0-20
	44-80	7.0-20	---	6.6-8.4	0-20
131A:					
Alvin	0-8	4.0-8.0	---	4.5-7.3	0
	8-26	9.0-14	---	4.5-7.3	0
	26-60	2.0-5.0	---	5.1-7.3	0
131B:					
Alvin	0-10	8.6-13	---	5.0-7.3	0
	10-16	7.6-12	---	5.0-7.3	0
	16-47	11-15	---	5.0-7.3	0
	47-80	2.6-8.5	---	5.1-7.3	0
131C:					
Alvin	0-9	7.0-11	---	5.0-7.3	0
	9-19	6.0-10	---	5.0-7.3	0
	19-32	9.0-12	---	5.0-7.3	0
	32-60	2.0-7.0	---	5.1-7.3	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
131D:					
Alvin----------------	0-5	7.0-11	---	5.0-7.3	0
	5-14	6.0-10	---	5.0-7.3	0
	14-33	9.0-12	---	5.0-7.3	0
	33-80	2.0-7.0	---	5.1-7.3	0
131F:					
Alvin----------------	0-6	7.0-11	---	5.0-7.3	0
	6-13	6.0-10	---	5.0-7.3	0
	13-40	9.0-12	---	5.0-7.3	0
	40-80	2.0-7.0	---	5.1-7.3	0
134A:					
Camden---------------	0-7	10-20	---	5.1-7.3	0
	7-12	10-20	---	5.1-7.3	0
	12-26	13-22	---	5.1-7.3	0
	26-53	10-19	---	5.1-7.3	0
	53-60	3.0-12	---	5.1-8.4	0-5
134B:					
Camden---------------	0-9	10-20	---	5.1-7.3	0
	9-15	10-20	---	5.1-7.3	0
	15-34	13-22	---	5.1-7.3	0
	34-40	10-19	---	5.1-7.3	0
	40-60	3.0-12	---	5.1-8.4	0-25
134C2:					
Camden---------------	0-7	12-22	---	5.1-7.3	0
	7-34	19-27	---	5.1-7.3	0
	34-43	15-23	---	5.1-7.3	0
	43-80	4.1-12	---	6.1-7.8	0-25
145B:					
Saybrook-------------	0-15	14-30	---	5.6-7.3	0
	15-32	18-27	---	5.6-7.3	0
	32-36	11-22	---	6.6-7.8	0-5
	36-60	6.3-13	---	7.4-8.4	15-40
145B2:					
Saybrook-------------	0-8	14-28	---	5.6-7.3	0
	8-28	17-23	---	5.1-7.3	0
	28-31	11-22	---	6.6-7.8	0-5
	31-60	6.3-13	---	7.4-8.4	15-40
145C2:					
Saybrook-------------	0-9	14-28	---	5.6-7.3	0
	9-30	17-23	---	5.1-7.3	0
	30-36	11-22	---	6.6-7.8	0-5
	36-60	6.3-13	---	7.4-8.4	15-40
148B:					
Proctor--------------	0-11	17-24	---	5.1-7.8	0
	11-28	16-25	---	5.6-7.3	0
	28-33	11-21	---	5.6-7.3	0
	33-60	3.0-13	---	5.6-7.8	0-10
152A:					
Drummer--------------	0-14	23-30	---	5.6-7.3	0
	14-41	22-28	---	5.6-7.3	0
	41-47	10-14	---	6.6-7.8	0-5
	47-60	5.2-11	---	7.4-8.4	0-15

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
154A:					
Flanagan-------------	0-18	17-23	---	5.6-7.3	0
	18-38	27-32	---	5.6-7.3	0
	38-45	19-27	---	5.6-7.3	0
	45-49	10-14	---	6.1-7.8	0-10
	49-80	6.3-13	---	7.4-8.4	15-40
154B:					
Flanagan-------------	0-10	20-26	---	5.6-7.3	0
	10-17	25-38	---	5.6-7.3	0
	17-42	21-26	---	5.6-7.3	0
	42-53	12-18	---	6.1-8.4	0-26
	53-60	6.3-13	---	7.4-8.4	15-40
171B:					
Catlin---------------	0-11	16-23	---	6.1-7.3	0
	11-16	22-29	---	5.6-7.3	0
	16-41	21-28	---	5.6-7.3	0
	41-45	14-18	---	7.4-8.4	0-5
	45-80	6.3-13	---	7.4-8.4	15-40
171B2:					
Catlin---------------	0-8	14-28	---	6.1-7.3	0
	8-41	17-31	---	6.1-7.3	0
	41-47	12-21	---	7.4-7.8	0-5
	47-60	6.3-13	---	7.4-8.4	15-40
171C2:					
Catlin---------------	0-9	14-28	---	6.1-7.3	0
	9-40	17-31	---	5.6-6.5	0
	40-50	16-27	---	6.1-7.3	0
	50-55	11-22	---	6.6-7.8	0-5
	55-60	6.3-13	---	7.4-8.4	15-40
194C2:					
Morley---------------	0-7	18-27	---	5.1-7.3	0
	7-10	18-30	---	5.6-7.3	0
	10-26	16-30	---	5.6-7.3	0
	26-36	16-30	---	7.4-7.8	0-25
	36-60	16-24	---	7.4-8.4	0-30
198A:					
Elburn---------------	0-16	19-23	---	6.1-7.3	0
	16-49	20-28	---	5.6-7.8	0
	49-58	7.8-11	---	6.6-7.8	0-5
	58-62	2.6-8.0	---	6.6-7.8	0-15
199A:					
Plano----------------	0-14	16-23	---	6.1-7.3	0
	14-49	16-27	---	5.1-7.3	0
	49-60	7.8-17	---	5.6-7.8	0
	60-80	2.6-11	---	5.6-8.4	0-20
199B:					
Plano----------------	0-15	16-23	---	6.1-7.3	0
	15-45	16-27	---	5.1-7.3	0
	45-55	7.8-17	---	5.6-7.8	0
	55-80	2.6-11	---	5.6-8.4	0-20

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
223B2:					
Varna----------------	0-7	14-20	---	5.6-7.3	0
	7-26	18-28	---	5.6-7.3	0
	26-38	15-25	---	7.4-8.4	0-15
	38-60	13-21	---	7.9-8.4	5-30
223C2:					
Varna----------------	0-8	14-20	---	5.6-7.3	0
	8-23	18-28	---	5.6-7.3	0
	23-43	15-25	---	7.4-8.4	0-15
	43-60	13-21	---	7.9-8.4	5-30
223D:					
Varna----------------	0-12	14-20	---	5.6-7.3	0
	12-26	18-28	---	5.6-7.3	0
	26-41	15-25	---	7.4-8.4	0-15
	41-60	13-21	---	7.9-8.4	5-30
224D2:					
Strawn---------------	0-5	13-22	---	6.1-7.3	0
	5-15	16-23	---	5.6-7.3	0
	15-21	16-23	---	7.4-8.4	5-14
	21-60	6.3-13	---	7.4-8.4	15-40
233B2:					
Birkbeck-------------	0-9	13-24	---	5.6-7.3	0
	9-48	16-29	---	5.6-7.3	0
	48-55	9.0-19	---	6.6-7.8	0-5
	55-60	6.3-13	---	7.4-8.4	15-40
233C2:					
Birkbeck-------------	0-7	13-24	---	5.6-7.3	0
	7-46	20-27	13-18	4.5-7.3	0
	46-57	9.0-19	---	6.1-7.8	0-5
	57-60	6.3-13	---	7.4-8.4	15-40
233D2:					
Birkbeck-------------	0-7	13-24	---	5.6-7.3	0
	7-46	15-22	---	4.5-7.8	0
	46-53	9.0-19	---	6.1-8.4	0-5
	53-60	6.3-13	---	7.4-8.4	15-40
236A:					
Sabina---------------	0-8	17-23	---	5.6-7.3	0
	8-12	14-20	---	5.1-7.3	0
	12-43	25-32	---	4.5-7.3	0
	43-50	15-27	---	6.6-7.8	0-5
	50-80	6.3-13	---	7.4-8.4	15-40
241C2:					
Chatsworth-----------	0-6	13-28	---	6.1-8.4	0-20
	6-31	21-31	---	6.6-8.4	0-25
	31-60	21-31	---	7.4-8.4	5-30
241C3:					
Chatsworth-----------	0-5	25-32	---	6.1-8.4	0-20
	5-16	21-31	---	6.6-8.4	0-25
	16-60	21-31	---	7.4-8.4	5-30

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
243A:					
St. Charles----------	0-9	14-22	---	5.1-7.8	0
	9-51	15-22	---	4.5-7.3	0
	51-60	9.0-19	---	5.1-7.3	0
243B:					
St. Charles----------	0-8	17-23	---	5.1-7.8	0
	8-50	17-27	---	4.5-7.3	0
	50-60	7.6-16	---	5.1-7.3	0
279B2:					
Rozetta--------------	0-7	16-22	---	5.6-6.5	0
	7-44	19-27	---	5.1-7.3	0
	44-60	14-21	---	5.6-7.8	0-15
290A:					
Warsaw---------------	0-11	14-23	---	5.6-7.3	0
	11-28	11-22	---	5.1-6.5	0
	28-32	9.0-22	---	6.1-8.4	0-10
	32-80	1.0-7.0	---	7.9-8.4	10-30
322C2:					
Russell--------------	0-7	16-22	---	5.6-6.5	0
	7-27	20-27	13-17	4.5-5.5	0
	27-56	14-17	---	5.6-7.3	0-5
	56-80	6.3-13	---	7.4-8.4	15-40
322D2:					
Russell--------------	0-7	13-24	---	5.6-6.5	0
	7-29	20-27	---	4.5-6.5	0
	29-47	11-22	---	5.6-7.3	0-5
	47-60	6.3-13	---	7.4-8.4	15-40
327C2:					
Fox------------------	0-5	22-26	---	5.1-6.5	0
	5-14	12-24	---	5.1-6.5	0
	14-20	9.0-24	---	5.1-6.5	0
	20-35	12-14	---	5.6-7.8	0-5
	35-60	0.0-2.0	---	7.4-8.4	5-25
330A:					
Peotone--------------	0-13	30-38	---	5.6-7.8	0
	13-50	22-33	---	6.1-7.8	0
	50-60	15-26	---	6.6-8.4	0-15
356A:					
Elpaso---------------	0-21	26-35	---	5.6-7.3	0
	21-44	14-25	---	6.1-7.8	0-5
	44-69	12-25	---	6.6-7.8	0-15
	69-80	9.0-20	---	7.4-8.4	5-30
369A:					
Waupecan-------------	0-14	13-23	---	6.1-7.3	0
	14-34	16-23	---	5.6-7.3	0
	34-51	5.3-16	---	5.6-7.3	0
	51-60	0.0-8.0	---	7.4-8.4	0-30
369B:					
Waupecan-------------	0-11	13-23	---	6.1-7.8	0
	11-40	16-23	---	5.6-7.3	0
	40-43	6.0-16	---	5.6-7.3	0
	43-60	2.0-8.0	---	6.6-8.4	0-20

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
375A:					
Rutland	0-14	22-28	---	5.1-7.3	0
	14-36	21-31	---	5.1-7.8	0-5
	36-44	12-22	---	6.1-7.8	0-10
	44-52	22-32	---	6.6-8.4	0-15
	52-60	20-34	---	7.4-8.4	5-30
375B:					
Rutland	0-13	22-28	---	5.1-7.3	0
	13-40	21-31	---	5.1-7.8	0-5
	40-50	22-32	---	6.6-8.4	0-15
	50-60	20-34	---	7.4-8.4	5-30
375B2:					
Rutland	0-9	20-26	---	5.1-7.3	0
	9-37	21-31	---	5.1-7.8	0-5
	37-46	22-32	---	6.6-8.4	0-15
	46-80	20-34	---	7.4-8.4	5-30
379A:					
Dakota	0-14	12-23	---	5.1-7.3	0
	14-34	15-26	---	5.1-6.5	0
	34-60	1.0-4.6	---	5.1-6.5	0
383B:					
Newvienna	0-8	16-23	---	5.1-7.3	0
	8-55	20-27	---	5.1-6.5	0
	55-64	11-20	---	5.1-7.3	0
	64-80	11-20	---	7.4-7.8	5-15
387A:					
Ockley	0-9	5.9-15	---	5.6-6.5	0
	9-18	11-18	---	5.6-6.5	0
	18-30	10-17	---	5.6-6.5	0
	30-50	9.1-17	---	5.6-7.3	0
	50-60	0.5-2.7	---	7.4-8.4	10-40
388B2:					
Wenona	0-9	17-23	---	5.1-7.3	0
	9-42	26-33	---	5.1-7.8	0-5
	42-52	26-42	---	6.6-8.4	0-15
	52-60	26-45	---	7.4-8.4	5-30
388C2:					
Wenona	0-6	22-32	---	5.1-7.3	0
	6-45	26-33	---	5.1-7.8	0-5
	45-54	26-42	---	6.6-8.4	0-15
	54-60	26-45	---	7.4-8.4	5-30
435A:					
Streator	0-13	23-33	---	6.1-7.3	0
	13-42	27-35	---	6.1-7.8	0-5
	42-68	26-43	---	6.6-8.4	0-15
	68-80	26-43	---	7.4-8.4	5-30
440A:					
Jasper	0-18	13-25	---	5.1-7.3	0
	18-37	13-22	---	5.1-7.3	0
	37-44	7.0-16	---	5.6-7.8	0-5
	44-60	3.0-13	---	6.1-8.4	0-25

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
440B:					
Jasper---------------	0-14	13-25	---	5.1-7.3	0
	14-43	13-22	---	5.1-7.3	0
	43-52	7.0-16	---	5.6-7.8	0-5
	52-60	3.0-13	---	6.1-8.4	0-25
440C2:					
Jasper---------------	0-8	10-24	---	5.1-7.3	0
	8-43	13-22	---	5.1-7.3	0
	43-50	7.0-16	---	5.6-7.8	0-5
	50-60	3.0-13	---	6.1-8.4	0-25
533.					
Urban land					
536.					
Dumps, mine					
541B2:					
Graymont-------------	0-8	19-24	---	6.1-7.3	0
	8-24	15-25	---	6.1-7.3	0
	24-35	13-25	---	6.6-7.8	0-10
	35-60	14-22	---	7.4-8.4	5-30
541C2:					
Graymont-------------	0-9	19-24	---	6.1-7.3	0
	9-30	15-25	---	6.1-7.3	0
	30-38	12-23	---	6.6-7.8	0-10
	38-60	13-20	---	7.4-8.4	5-30
567B:					
Elkhart--------------	0-13	14-30	---	5.6-7.3	0
	13-30	17-31	---	6.1-7.8	0-5
	30-49	10-25	---	7.4-8.4	0-25
	49-80	9.0-23	---	7.9-8.4	15-40
570A:					
Martinsville---------	0-12	6.5-11	---	5.6-7.3	0
	12-38	10-18	---	5.6-7.3	0
	38-62	2.0-12	---	5.6-7.3	0
	62-80	1.0-10	---	6.0-7.3	0
570B:					
Martinsville---------	0-5	4.3-11	---	5.1-7.3	0
	5-12	8.0-17	---	5.1-7.3	0
	12-24	10-19	---	5.1-7.3	0
	24-57	7.8-13	---	5.1-7.6	0
	57-60	2.6-11	---	5.6-8.0	0-25
570C2:					
Martinsville---------	0-6	5.0-16	---	5.1-7.3	0
	6-15	8.0-17	---	5.1-7.3	0
	15-53	5.1-16	---	5.6-7.3	0
	53-60	2.6-11	---	6.0-7.8	0-10
614A:					
Chenoa---------------	0-14	15-23	---	6.1-7.3	0
	14-34	15-23	---	6.1-7.3	0
	34-49	11-16	---	7.4-8.4	0-15
	49-60	7.6-13	---	7.9-8.4	15-40

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
614B2:					
Chenoa	0-8	14-22	---	6.1-7.3	0
	8-28	15-24	---	5.6-7.3	0
	28-56	11-16	---	7.4-8.4	0-15
	56-60	7.6-13	---	7.9-8.4	15-40
618C2:					
Senachwine	0-6	11-15	---	5.6-7.3	0
	6-22	14-18	---	5.6-7.3	0
	22-36	10-14	---	7.2-7.8	0-5
	36-60	6.3-13	---	7.4-8.4	15-40
618D2:					
Senachwine	0-6	11-15	---	5.6-7.3	0
	6-15	14-18	---	5.6-7.3	0
	15-28	14-18	---	5.1-7.3	0
	28-34	10-14	---	5.1-7.3	0-5
	34-80	6.3-13	---	7.4-8.4	15-40
622B2:					
Wyanet	0-8	10-22	---	5.6-7.3	0
	8-24	12-24	---	5.6-7.3	0
	24-32	9.0-19	---	7.4-8.4	0-5
	32-60	6.3-13	---	7.4-8.4	15-40
622C2:					
Wyanet	0-8	11-15	---	5.6-7.3	0
	8-26	14-19	---	5.6-7.3	0
	26-34	10-14	---	7.4-8.4	0-5
	34-80	6.3-13	---	7.4-8.4	15-40
663A:					
Clare	0-11	14-30	---	6.1-7.3	0
	11-16	10-25	---	5.6-6.5	0
	16-30	18-27	---	5.6-6.5	0
	30-44	11-22	---	6.1-7.3	0-5
	44-60	4.0-13	---	7.4-8.4	0-15
679A:					
Blackberry	0-11	17-26	---	6.1-7.3	0
	11-47	15-23	---	5.1-7.3	0
	47-62	9.0-22	---	5.6-8.4	0-10
	62-70	3.0-19	---	5.6-8.4	0-20
679B:					
Blackberry	0-16	17-26	---	6.1-7.3	0
	16-47	15-23	---	5.1-7.3	0
	47-62	9.0-22	---	5.6-8.4	0-10
	62-70	3.0-19	---	5.6-8.4	0-20
689B:					
Coloma	0-9	1.0-12	---	4.5-7.3	0
	9-50	0.1-9.0	---	4.5-7.3	0
	50-80	0.4-11	---	4.5-7.3	0
689D:					
Coloma	0-3	1.0-12	---	4.5-7.3	0
	3-45	0.1-9.0	---	4.5-7.3	0
	45-80	0.4-11	---	4.5-7.3	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
705B:					
Buckhart	0-15	18-25	---	5.6-7.3	0
	15-67	15-23	---	5.6-7.8	0
	67-80	12-18	---	6.6-7.8	0-15
712A:					
Spaulding	0-22	24-33	---	7.4-8.4	15-40
	22-38	17-25	---	7.4-8.4	5-35
	38-44	14-23	---	7.4-8.4	5-35
	44-80	12-17	---	7.4-8.4	10-40
715A:					
Arrowsmith	0-12	16-32	---	6.1-7.3	0
	12-30	17-31	---	6.1-7.8	0-10
	30-39	9.0-22	---	7.4-8.4	5-30
	39-60	5.0-20	---	7.9-8.4	15-35
721A:					
Drummer	0-14	23-30	---	5.6-7.3	0
	14-41	21-28	---	6.1-7.3	0
	41-47	10-14	---	6.6-7.8	0-5
	47-60	5.1-11	---	7.4-8.4	0-15
Elpaso	0-21	23-30	---	5.6-7.3	0
	21-44	21-28	---	6.1-7.3	0
	44-69	12-23	---	6.6-7.8	0-15
	69-80	11-21	---	6.6-8.4	15-25
802B:					
Orthents, loamy	0-10	9.6-13	---	5.6-7.8	0-10
	10-60	7.3-11	---	5.6-7.8	0-15
802D:					
Orthents, loamy	0-10	18-25	---	5.6-7.8	0-10
	10-60	11-19	---	5.6-7.8	0-15
835G.					
Earthen dam					
865.					
Pits, gravel					
883F:					
Senachwine	0-6	7.0-17	---	5.6-7.3	0
	6-21	9.0-20	---	5.1-7.3	0
	21-39	9.0-20	---	7.4-7.8	10-30
	39-60	6.3-13	---	7.4-8.4	15-40
Hennepin	0-6	14-22	---	6.1-7.8	0-20
	6-15	11-19	---	6.1-8.4	10-30
	15-60	6.3-13	---	7.4-8.4	15-40
883G:					
Senachwine	0-6	7.0-17	---	5.6-7.3	0
	6-21	9.0-20	---	5.1-7.3	0
	21-39	9.0-20	---	7.4-7.8	10-30
	39-60	6.3-13	---	7.4-8.4	15-40
Hennepin	0-6	14-22	---	6.1-7.8	0-20
	6-11	11-19	---	6.1-8.4	10-30
	11-60	6.3-13	---	7.4-8.4	15-40

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
964F:					
Miami	0-6	7.0-27	---	6.1-7.3	0
	6-11	4.0-19	---	5.6-7.3	0
	11-28	11-22	---	5.6-7.3	0-5
	28-47	4.0-13	---	7.4-8.4	15-40
	47-60	6.3-13	---	7.4-8.4	15-40
Hennepin	0-6	14-27	---	6.6-7.8	0-20
	6-19	9.0-19	---	7.4-8.4	10-30
	19-60	6.3-13	---	7.4-8.4	15-40
1100A:					
Palms	0-41	143-189	---	6.1-8.4	0
	41-60	5.2-22	---	7.4-8.4	10-40
1210L:					
Lena	0-24	124-222	---	6.6-8.4	5-40
	24-60	136-222	---	7.9-8.4	10-40
3092L:					
Sarpy	0-10	2.0-8.0	---	6.6-7.8	0-2
	10-60	2.0-8.0	---	6.6-7.8	0-2
3360L:					
Slacwater	0-6	10-20	---	7.4-8.4	1-10
	6-60	5.0-22	---	7.4-8.4	5-30
7070A:					
Beaucoup	0-16	26-33	---	5.6-7.8	0
	16-47	16-25	---	5.6-7.8	0-5
	47-60	9.0-20	---	6.1-8.4	0-15
8073A:					
Ross	0-32	12-26	---	6.6-7.8	0
	32-39	6.0-18	---	6.6-7.8	0-5
	39-60	4.0-16	---	7.4-8.4	0-15
8074A:					
Radford	0-21	14-30	---	5.6-6.5	0
	21-29	10-26	---	6.1-7.3	0
	29-60	23-36	---	6.1-7.3	0
8077A:					
Huntsville	0-10	14-30	---	6.1-7.8	0
	10-27	14-30	---	6.1-7.8	0
	27-52	12-28	---	6.1-7.8	0
	52-80	9.0-23	---	6.1-7.8	0-5
8107A:					
Sawmill	0-26	23-36	---	6.1-7.8	0
	26-53	18-34	---	6.1-7.8	0-5
	53-60	18-34	---	6.1-8.4	0-30
8304A:					
Landes	0-20	6.0-16	---	5.6-8.4	0
	20-26	4.6-16	---	5.6-8.4	0-10
	26-80	4.1-12	---	5.6-8.4	0-20
8368L:					
Raveenwash	0-6	10-17	---	7.4-8.4	5-20
	6-80	4.1-15	---	7.4-8.4	5-30

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
8400L:					
Calco----------------	0-36	24-30	---	7.4-8.4	5-30
	36-57	25-29	---	7.4-8.4	5-30
	57-63	25-29	---	7.4-8.4	5-30
	63-80	15-23	---	7.4-8.4	5-30
8402A:					
Colo-----------------	0-8	17-22	---	5.6-7.3	0
	8-44	23-29	---	5.6-7.3	0
	44-64	22-29	---	6.1-7.3	0
	64-80	22-29	---	6.1-7.3	0
8451A:					
Lawson---------------	0-28	16-32	---	6.1-7.3	0
	28-60	10-25	---	6.1-7.3	0

Table 22.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind
		Ft						Ft	Ft	
17A:										
Keomah----------------	C	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
17B2:										
Keomah----------------	C	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
25G:										
Hennepin--------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
27C2:										
Miami-----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.1-3.6	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
27D2:										
Miami-----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.1-3.6	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
43A:										
Ipava-----------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
43B:										
Ipava-----------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
60C2:										
La Rose---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
60C3:										
La Rose---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
61A:										
Atterberry------------	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
67A:										
Harpster--------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
68A:										
Sable-----------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
86B:										
Osco------------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
91A:										
Swygert---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.9-5.1	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind
		Ft						Ft	Ft	
91B2:										
Swygert	C	---	---	None	---	None	Jan-May	1.0-2.0	2.9-5.1	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
125A:										
Selma	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
131A:										
Alvin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
131B:										
Alvin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
131C:										
Alvin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
131D:										
Alvin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
131F:										
Alvin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
134A:										
Camden	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
134B:										
Camden	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
134C2:										
Camden	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
145B:										
Saybrook	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.1-3.5	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
145B2:										
Saybrook	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.1-3.5	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
145C2:										
Saybrook	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.1-3.5	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
148B:										
Proctor	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
152A:										
Drummer	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
154A:										
Flanagan	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
154B:										
Flanagan	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind
		Ft						Ft	Ft	
171B:										
Catlin----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.7-5.4	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
171B2:										
Catlin----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.7-5.4	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
171C2:										
Catlin----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.7-5.4	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
194C2:										
Morley----------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.7-5.4	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
198A:										
Elburn----------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
199A:										
Plano-----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
199B:										
Plano-----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
223B2:										
Varna-----------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.2-5.5	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
223C2:										
Varna-----------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.2-5.5	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
223D:										
Varna-----------------	C	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
224D2:										
Strawn----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
233B2:										
Birkbeck--------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.3-5.8	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
233C2:										
Birkbeck--------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.3-5.8	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
233D2:										
Birkbeck--------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.3-5.8	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind
		Ft						Ft	Ft	
236A:										
Sabina----------------	C	---	---	None	---	None	Jan-May	0.5-2.0	3.7-6.0	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
241C2:										
Chatsworth------------	D	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.2-4.0	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
241C3:										
Chatsworth------------	D	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.2-4.0	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
243A:										
St. Charles-----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
243B:										
St. Charles-----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
279B2:										
Rozetta---------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
290A:										
Warsaw----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
322C2:										
Russell---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
322D2:										
Russell---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
327C2:										
Fox-------------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
330A:										
Peotone---------------	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jul-Dec	>6.0	>6.0	---
356A:										
Elpaso----------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
369A:										
Waupecan--------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
369B:										
Waupecan--------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
375A:										
Rutland---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	3.3-5.5	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
375B:										
Rutland---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	3.3-5.5	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind
		Ft						Ft	Ft	
375B2:										
Rutland	C	---	---	None	---	None	Jan-May	1.0-2.0	3.3-5.5	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
379A:										
Dakota	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
383B:										
Newvienna	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-4.0	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
387A:										
Ockley	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
388B2:										
Wenona	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.3-5.5	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
388C2:										
Wenona	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	3.3-5.5	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
435A:										
Streator	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---
440A:										
Jasper	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
440B:										
Jasper	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
440C2:										
Jasper	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
533.										
Urban land										
536.										
Dumps, mine										
541B2:										
Graymont	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
541C2:										
Graymont	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
567B:										
Elkhart	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind
		Ft						Ft	Ft	
570A:										
Martinsville----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
570B:										
Martinsville----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
570C2:										
Martinsville----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
614A:										
Chenoa----------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.1-4.3	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
614B2:										
Chenoa----------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.1-3.7	Perched
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
618C2:										
Senachwine------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
618D2:										
Senachwine------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
622B2:										
Wyanet----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
622C2:										
Wyanet----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
663A:										
Clare-----------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
679A:										
Blackberry------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
679B:										
Blackberry------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
689B:										
Coloma----------------	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
689D:										
Coloma----------------	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
705B:										
Buckhart--------------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
712A:										
Spaulding-------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	None	Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind
		Ft						Ft	Ft	
715A:										
Arrowsmith	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
721A:										
Drummer	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
Elpaso	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jun-Dec	>6.0	>6.0	---
802B:										
Orthents, loamy	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	3.3-6.0	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
802D:										
Orthents, loamy	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	3.3-6.0	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
835G. Earthen dam										
865. Pits, gravel										
883F:										
Senachwine	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Hennepin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
883G:										
Senachwine	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Hennepin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
964F:										
Miami	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	None	---	None	Feb-Apr	2.0-3.5	2.1-3.6	Perched
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
Hennepin	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
1100A:										
Palms	A/D	0.0-1.0	Long	Occasional	---	None	Jan-Dec	0.0-1.0	>6.0	Apparent
1210L:										
Lena	A/D	0.0-1.0	Long	Occasional	Long	Frequent	Jan-Jun	0.0-1.0	>6.0	Apparent
		0.0-1.0	Long	Occasional	---	None	Jul-Oct	0.0-1.0	>6.0	Apparent
		0.0-1.0	Long	Occasional	Long	Frequent	Nov-Dec	0.0-1.0	>6.0	Apparent
3092L:										
Sarpy	A	---	---	None	Long	Frequent	Jan-Jun	>6.0	>6.0	---
		---	---	None	---	None	Jul-Oct	>6.0	>6.0	---
		---	---	None	Long	Frequent	Nov-Dec	>6.0	>6.0	---
3360L:										
Slacwater	D	0.0-0.5	Long	Frequent	Long	Frequent	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	None	---	None	Jul-Oct	>6.0	>6.0	---
		0.0-0.5	Long	Frequent	Long	Frequent	Nov-Dec	0.0-1.0	>6.0	Apparent

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind
		Ft						Ft	Ft	
7070A:										
Beaucoup--------------	B/D	0.0-0.5	Brief	Frequent	---	Rare	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	Rare	Jun	>6.0	>6.0	---
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	Rare	Nov-Dec	>6.0	>6.0	---
8073A:										
Ross------------------	B	---	---	None	Brief	Occasional	Jan-Jun	>6.0	>6.0	---
		---	---	None	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	None	Brief	Occasional	Nov-Dec	>6.0	>6.0	---
8074A:										
Radford---------------	B	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	Brief	Occasional	Jun	>6.0	>6.0	---
		---	---	None	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	None	Brief	Occasional	Nov-Dec	>6.0	>6.0	---
8077A:										
Huntsville------------	B	---	---	None	Brief	Occasional	Jan	>6.0	>6.0	---
		---	---	None	Brief	Occasional	Feb-Apr	3.5-6.5	>6.0	Apparent
		---	---	None	Brief	Occasional	May-Jun	>6.0	>6.0	---
		---	---	None	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	None	Brief	Occasional	Nov-Dec	>6.0	>6.0	---
8107A:										
Sawmill---------------	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	Brief	Occasional	Jun	>6.0	>6.0	---
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	Brief	Occasional	Nov-Dec	>6.0	>6.0	---
8304A:										
Landes----------------	B	---	---	None	Brief	Occasional	Jan-Jun	>6.0	>6.0	---
		---	---	None	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	None	Brief	Occasional	Nov-Dec	>6.0	>6.0	---
8368L:										
Raveenwash------------	A	---	---	None	Long	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	Long	Occasional	Jun	>6.0	>6.0	---
		---	---	None	---	None	Jul-Oct	>6.0	>6.0	---
		---	---	None	Long	Occasional	Nov-Dec	>6.0	>6.0	---
8400L:										
Calco-----------------	B/D	0.0-0.5	Brief	Frequent	Long	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	Long	Occasional	Jun	>6.0	>6.0	---
		---	---	None	---	None	Jul-Oct	>6.0	>6.0	---
		---	---	None	Long	Occasional	Nov-Dec	>6.0	>6.0	---
8402A:										
Colo------------------	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	None	Brief	Occasional	Jun	>6.0	>6.0	---
		---	---	None	---	None	Jul-Oct	>6.0	>6.0	---
		---	---	None	Brief	Occasional	Nov-Dec	>6.0	>6.0	---
8451A:										
Lawson----------------	B	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	None	Brief	Occasional	Jun	>6.0	>6.0	---
		---	---	None	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	None	Brief	Occasional	Nov-Dec	>6.0	>6.0	---

Table 23.--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				
17A:						
Keomah	---	---	---	High	High	Moderate
17B2:						
Keomah	---	---	---	High	High	Moderate
25G:						
Hennepin	---	---	---	Moderate	Low	Low
27C2:						
Miami	Dense material	24-40	Noncemented	Moderate	High	Moderate
27D2:						
Miami	Dense material	24-40	Noncemented	Moderate	High	Moderate
43A:						
Ipava	---	---	---	High	High	Moderate
43B:						
Ipava	---	---	---	High	High	Moderate
60C2:						
La Rose	---	---	---	Moderate	Moderate	Low
60C3:						
La Rose	---	---	---	Moderate	Moderate	Low
61A:						
Atterberry	---	---	---	High	High	Moderate
67A:						
Harpster	---	---	---	High	High	Low
68A:						
Sable	---	---	---	High	High	Low
86B:						
Osco	---	---	---	High	Moderate	Moderate
91A:						
Swygert	Dense material	35-55	Noncemented	Moderate	High	Low
91B2:						
Swygert	Dense material	35-55	Noncemented	Moderate	High	Low
125A:						
Selma	---	---	---	High	High	Low
131A:						
Alvin	---	---	---	Moderate	Low	High
131B:						
Alvin	---	---	---	Moderate	Low	High
131C:						
Alvin	---	---	---	Moderate	Low	High

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In				
131D:						
Alvin	---	---	---	Moderate	Low	High
131F:						
Alvin	---	---	---	Moderate	Low	High
134A:						
Camden	---	---	---	High	Moderate	Moderate
134B:						
Camden	---	---	---	High	Moderate	Moderate
134C2:						
Camden	---	---	---	High	Moderate	Moderate
145B:						
Saybrook	---	---	---	High	High	Moderate
145B2:						
Saybrook	---	---	---	High	High	Moderate
145C2:						
Saybrook	---	---	---	High	High	Moderate
148B:						
Proctor	---	---	---	High	Moderate	Moderate
152A:						
Drummer	---	---	---	High	High	Moderate
154A:						
Flanagan	---	---	---	High	High	Moderate
154B:						
Flanagan	---	---	---	High	High	Moderate
171B:						
Catlin	---	---	---	High	High	Moderate
171B2:						
Catlin	---	---	---	High	High	Moderate
171C2:						
Catlin	---	---	---	High	High	Moderate
194C2:						
Morley	---	---	---	Moderate	High	Moderate
198A:						
Elburn	---	---	---	High	High	Moderate
199A:						
Plano	---	---	---	High	Moderate	Moderate
199B:						
Plano	---	---	---	High	Moderate	Moderate
223B2:						
Varna	Dense material	24-60	Noncemented	Moderate	High	Moderate
223C2:						
Varna	Dense material	24-60	Noncemented	Moderate	High	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In				
223D:						
Varna	Dense material	24-60	Noncemented	Moderate	Moderate	Moderate
224D2:						
Strawn	---	---	---	Moderate	Moderate	Low
233B2:						
Birkbeck	---	---	---	High	High	Moderate
233C2:						
Birkbeck	---	---	---	High	High	High
233D2:						
Birkbeck	---	---	---	High	High	High
236A:						
Sabina	---	---	---	High	High	High
241C2:						
Chatsworth	Dense material	24-36	Noncemented	Moderate	High	Low
241C3:						
Chatsworth	Dense material	10-24	Noncemented	Moderate	High	Low
243A:						
St. Charles	---	---	---	High	Moderate	High
243B:						
St. Charles	---	---	---	High	Moderate	High
279B2:						
Rozetta	---	---	---	High	High	Moderate
290A:						
Warsaw	Strongly contrasting textural stratification	24-40	Noncemented	Moderate	Moderate	Moderate
322C2:						
Russell	Dense material	40-60	Noncemented	High	Moderate	Moderate
322D2:						
Russell	Dense material	40-60	Noncemented	High	Moderate	Moderate
327C2:						
Fox	Strongly contrasting textural stratification	20-40	Noncemented	Moderate	Moderate	Moderate
330A:						
Peotone	---	---	---	High	High	Low
356A:						
Elpaso	---	---	---	High	High	Low
369A:						
Waupecan	---	---	---	High	Moderate	Moderate
369B:						
Waupecan	---	---	---	High	Moderate	Moderate

Table 23.--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				
375A:						
Rutland----------------	Dense material	40-60	Noncemented	Moderate	High	Moderate
375B:						
Rutland----------------	Dense material	40-60	Noncemented	Moderate	High	Moderate
375B2:						
Rutland----------------	Dense material	40-60	Noncemented	Moderate	High	Moderate
379A:						
Dakota-----------------	Strongly contrasting textural stratification	20-40	Noncemented	Moderate	Low	Moderate
383B:						
Newvienna--------------	---	---	---	High	High	Moderate
387A:						
Ockley-----------------	Strongly contrasting textural stratification	40-60	Noncemented	Moderate	Moderate	Moderate
388B2:						
Wenona-----------------	Dense material	40-65	Noncemented	Moderate	High	Moderate
388C2:						
Wenona-----------------	Dense material	40-65	Noncemented	Moderate	High	Moderate
435A:						
Streator---------------	---	---	---	High	High	Low
440A:						
Jasper-----------------	---	---	---	Moderate	Moderate	Moderate
440B:						
Jasper-----------------	---	---	---	Moderate	Moderate	Moderate
440C2:						
Jasper-----------------	---	---	---	Moderate	Moderate	Moderate
533.						
Urban land						
536.						
Dumps, mine						
541B2:						
Graymont---------------	---	---	---	High	High	Low
541C2:						
Graymont---------------	---	---	---	High	High	Low
567B:						
Elkhart----------------	---	---	---	High	High	Low
570A:						
Martinsville-----------	---	---	---	Moderate	Moderate	Moderate
570B:						
Martinsville-----------	---	---	---	Moderate	Moderate	Moderate

Table 23.--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				
570C2:						
Martinsville	---	---	---	Moderate	Moderate	Moderate
614A:						
Chenoa	Dense material	25-45	Noncemented	Moderate	High	Low
614B2:						
Chenoa	Dense material	25-45	Noncemented	Moderate	High	Low
618C2:						
Senachwine	---	---	---	Moderate	Moderate	Moderate
618D2:						
Senachwine	---	---	---	Moderate	Moderate	Moderate
622B2:						
Wyanet	---	---	---	Moderate	Moderate	Moderate
622C2:						
Wyanet	---	---	---	Moderate	Moderate	Moderate
663A:						
Clare	---	---	---	High	High	Moderate
679A:						
Blackberry	---	---	---	High	High	Moderate
679B:						
Blackberry	---	---	---	High	High	Moderate
689B:						
Coloma	---	---	---	Low	Low	High
689D:						
Coloma	---	---	---	Low	Low	High
705B:						
Buckhart	---	---	---	High	High	Moderate
712A:						
Spaulding	---	---	---	High	High	Low
715A:						
Arrowsmith	---	---	---	High	High	Low
721A:						
Drummer	---	---	---	High	High	Low
Elpaso	---	---	---	High	High	Low
802B:						
Orthents, loamy	---	---	---	Moderate	High	Moderate
802D:						
Orthents, loamy	---	---	---	Moderate	High	Moderate
835G.						
Earthen dam						
865.						
Pits, gravel						

Table 23.--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				
883F:						
Senachwine	---	---	---	Moderate	Moderate	Low
Hennepin	---	---	---	Moderate	Low	Low
883G:						
Senachwine	---	---	---	Moderate	Moderate	Low
Hennepin	---	---	---	Moderate	Low	Low
964F:						
Miami	Dense material	24-40	Noncemented	Moderate	High	Moderate
Hennepin	---	---	---	Moderate	Low	Low
1100A:						
Palms	---	---	---	High	Moderate	Moderate
1210L:						
Lena	---	---	---	High	Moderate	Low
3092L:						
Sarpy	---	---	---	Low	Low	Low
3360L:						
Slacwater	---	---	---	High	High	Low
7070A:						
Beaucoup	---	---	---	High	High	Moderate
8073A:						
Ross	---	---	---	Moderate	Low	Low
8074A:						
Radford	---	---	---	High	High	Low
8077A:						
Huntsville	---	---	---	High	Low	Low
8107A:						
Sawmill	---	---	---	High	High	Low
8304A:						
Landes	---	---	---	Moderate	Low	Moderate
8368L:						
Raveenwash	---	---	---	Moderate	Moderate	Low
8400L:						
Calco	---	---	---	High	High	Low
8402A:						
Colo	---	---	---	High	High	Moderate
8451A:						
Lawson	---	---	---	High	High	Low

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