



United States  
Department of  
Agriculture



NRCS

Natural  
Resources  
Conservation  
Service

In cooperation with United  
States Department of  
Agriculture, Forest Service;  
Missouri Department of  
Natural Resources;  
Missouri Department of  
Conservation; Missouri  
Agricultural Experiment  
Station; and Bollinger  
County Soil and Water  
Conservation District

# Soil Survey of Bollinger County, Missouri





# How To Use This Soil Survey

## General Soil Map

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

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

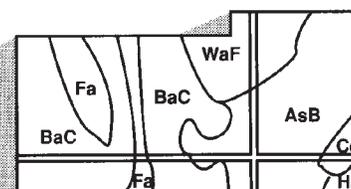
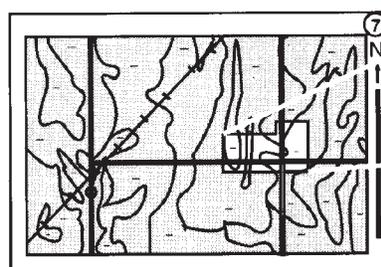
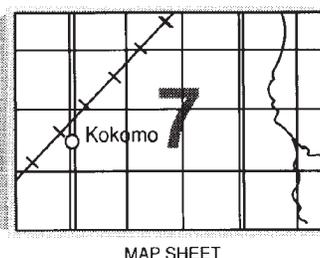
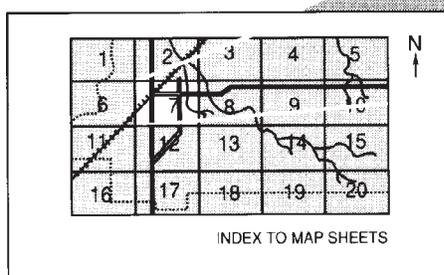
## Detailed Soil Maps

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

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

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

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



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

---

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

Major fieldwork for this soil survey was completed in 2001. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. This survey was made cooperatively by the Natural Resources Conservation Service and the United States Department of Agriculture, Forest Service; Missouri Department of Natural Resources; Missouri Department of Conservation; Missouri Agricultural Experiment Station; and Bollinger County Soil and Water Conservation District. The survey is part of the technical assistance furnished to the Bollinger County Soil and Water Conservation District.

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

The United States Department of Agriculture (USDA) prohibits discrimination in all of its programs on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA's TARGET Center at 202-720-2600 (voice or TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue SW, Washington, DC 20250-9410, or call 202-720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

**Cover: A typical landscape of the Wrengart-Alred-Hildebrecht association.**

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

# Contents

---

<b>How To Use This Soil Survey</b> .....	3
<b>Foreword</b> .....	9
General Nature of the County .....	11
Climate .....	11
Physiography, Relief, and Drainage .....	12
History and Development .....	12
Agriculture .....	12
How This Survey Was Made .....	12
<b>General Soil Map Units</b> .....	15
1. Wrengart-Alred-Hildebrecht Association .....	15
2. Clarksville-Captina-Scholten Association .....	15
3. Calhoun-Falaya-Forestdale Association .....	17
4. Tilk-Secesh-Cornwall Association .....	18
5. Haymond-Wakeland-Moniteau Association .....	19
6. Wrengart-Minnith Association .....	20
7. Memphis-Alred-Wrengart Association .....	21
<b>Detailed Soil Map Units</b> .....	23
60033—Wrengart silt loam, 5 to 9 percent slopes, eroded .....	24
60046—Minnith silt loam, 15 to 30 percent slopes .....	24
60053—Winfield silt loam, 3 to 8 percent slopes, eroded .....	24
60054—Minnith silt loam, 8 to 15 percent slopes .....	25
60055—Winfield silt loam, 2 to 5 percent slopes .....	25
66000—Moniteau silt loam, 0 to 3 percent slopes, occasionally flooded .....	25
66054—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded .....	25
66055—Haymond silt loam, 0 to 3 percent slopes, occasionally flooded .....	26
73055—Alred-Rueter complex, 15 to 35 percent slopes, very stony .....	26
73100—Wrengart silt loam, 2 to 5 percent slopes .....	27
73101—Wrengart silt loam, 5 to 9 percent slopes .....	27
73139—Poynor-Clarksville-Scholten complex, 8 to 15 percent slopes, stony .....	27
73140—Clarksville-Scholten complex, 15 to 45 percent slopes, very stony .....	28
73141—Firebaugh silt, 3 to 8 percent slopes .....	28
73145—Crider silt loam, 3 to 8 percent slopes, eroded .....	29
73146—Marquand silt loam, 3 to 8 percent slopes .....	29
73150—Caneyville-Bucklick complex, 8 to 15 percent slopes, rocky .....	29
73151—Caneyville-Gasconade-Bucklick complex, 15 to 25 percent slopes, rocky .....	30
73156—Alred-Gepp complex, 8 to 15 percent slopes, stony .....	30
73157—Captina silt loam, 3 to 8 percent slopes .....	31
73223—Coulstone-Bender complex, 15 to 50 percent slopes, very stony .....	31
73264—Alred-Wrengart complex, 14 to 35 percent slopes, very stony, rocky .....	32
73265—Captina-Scholten complex, 3 to 8 percent slopes .....	32
73266—Hildebrecht silt loam, 8 to 15 percent slopes, eroded .....	33
73267—Yelton-Scholten complex, 8 to 15 percent slopes .....	34
73269—Brussels-Gasconade-Rock outcrop complex, 30 to 90 percent slopes, very bouldery .....	34
73270—Wrengart silt loam, 9 to 14 percent slopes, eroded .....	35
73343—Captina silt loam, 3 to 8 percent slopes, eroded .....	35
73344—Captina silt loam, 8 to 15 percent slopes, eroded .....	35
73345—Hildebrecht silt loam, 5 to 9 percent slopes .....	36
73346—Hildebrecht silt loam, 5 to 9 percent slopes, eroded .....	37
74644—Deible silt loam, 1 to 3 percent slopes .....	37
74646—Cornwall silt loam, 3 to 8 percent slopes .....	37
74648—Aslinger silt loam, 3 to 8 percent slopes .....	37
74649—Aslinger-Waben complex, 3 to 15 percent slopes .....	38

74679—Higdon silt loam, 0 to 3 percent slopes, rarely flooded .....	38	77008—Hassler silt loam, 3 to 15 percent slopes, stony .....	46
74680—Moniteau silt loam, 0 to 3 percent slopes, rarely flooded .....	39	80000—Calhoun silt loam, 0 to 1 percent slopes .....	47
74685—Auxvasse silt loam, 2 to 5 percent slopes .....	39	80001—Oaklimeter silt loam, 0 to 1 percent slopes .....	47
75379—Kaintuck loam, 0 to 3 percent slopes, frequently flooded .....	39	82000—Dubbs silt loam, 0 to 1 percent slopes .....	47
75381—Bearthicket silt loam, 0 to 3 percent slopes, rarely flooded .....	39	82001—Amagon silt loam, 0 to 1 percent slopes, frequently ponded .....	47
75395—Jamesfin silt loam, 0 to 3 percent slopes, occasionally flooded .....	40	82002—Forestdale silty clay loam, 0 to 1 percent slopes, frequently ponded .....	48
75408—Secesh silt loam, 0 to 3 percent slopes, rarely flooded .....	40	82005—Malden loamy fine sand, 0 to 3 percent slopes .....	48
75409—Relfe sandy loam, 0 to 3 percent slopes, occasionally flooded .....	40	82006—Bosket fine sandy loam, 1 to 5 percent slopes .....	48
75411—Tilk very gravelly sandy loam, 0 to 3 percent slopes, rarely flooded .....	41	82007—Bosket loam, 0 to 3 percent slopes, occasionally flooded .....	49
75416—Gladden loam, 0 to 3 percent slopes, occasionally flooded .....	42	82009—Forestdale silty clay loam, 0 to 1 percent slopes .....	49
75417—Relfe-Sandbur complex, 0 to 3 percent slopes, frequently flooded .....	42	82010—Amagon silt loam, 0 to 1 percent slopes .....	49
75426—Gabriel silt loam, 0 to 3 percent slopes, rarely flooded .....	42	82011—Crowley silt loam, 0 to 1 percent slopes .....	49
75428—Tilk, occasionally flooded-Cornwall-Poynor complex, 3 to 15 percent slopes .....	43	86000—Dubbs silt loam, 0 to 3 percent slopes, occasionally flooded .....	50
75429—Tilk-Secesh complex, 0 to 3 percent slopes, occasionally flooded .....	43	86001—Calhoun silt loam, 0 to 1 percent slopes, occasionally flooded .....	51
75430—Wideman fine sandy loam, 0 to 3 percent slopes, occasionally flooded .....	44	86002—Falaya silt loam, 0 to 1 percent slopes, occasionally flooded .....	51
75451—Gladden silt loam, 0 to 3 percent slopes, occasionally flooded .....	44	86003—Amagon silt loam, 0 to 1 percent slopes, occasionally flooded .....	51
75467—Wilbur silt loam, 0 to 3 percent slopes, frequently flooded .....	44	86004—Forestdale silty clay loam, 0 to 1 percent slopes, occasionally flooded .....	52
75468—Elsah silt loam, 0 to 3 percent slopes, occasionally flooded .....	45	90000—Memphis silt loam, 3 to 8 percent slopes, eroded .....	52
77000—Killarney-Frenchmill complex, 15 to 45 percent slopes, rubbly .....	45	90001—Memphis silt loam, 8 to 15 percent slopes, severely eroded .....	52
77002—Delassus silt loam, 3 to 8 percent slopes .....	45	99001—Water .....	53
77005—Hassler-Syenite complex, 8 to 25 percent slopes, bouldery .....	46	99003—Miscellaneous water .....	53
		99007—Dam .....	53
		99015—Udorthents-Water complex .....	53
		<b>Use and Management of the Soils</b> .....	55
		Interpretive Ratings .....	55

---

Rating Class Terms .....	55	Deible Series .....	105
Numerical Ratings .....	55	Delassus Series .....	106
Crops and Pasture .....	56	Dubbs Series .....	108
Prime Farmland .....	58	Elsah Series .....	109
Yields per Acre .....	60	Falaya Series .....	109
Land Capability Classification .....	60	Firebaugh Series .....	110
Pasture and Hayland Suitability Groups .....	61	Forestdale Series .....	111
Forest Productivity and Management .....	62	Frenchmill Series .....	112
Forest Productivity .....	64	Gabriel Series .....	113
Forest Management .....	64	Gasconade Series .....	114
Windbreaks and Environmental Plantings .....	66	Gepp Series .....	115
Recreation .....	66	Gladden Series .....	116
Wildlife Habitat .....	68	Hassler Series .....	117
Engineering .....	71	Haymond Series .....	118
Building Site Development .....	72	Higdon Series .....	119
Sanitary Facilities .....	73	Hildebrecht Series .....	120
Construction Materials and Excavating .....	75	Jamesfin Series .....	121
Water Management .....	76	Kaintuck Series .....	122
Waste Management .....	77	Killarney Series .....	123
<b>Soil Properties</b> .....	81	Malden Series .....	124
Engineering Index Properties .....	81	Marquand Series .....	125
Physical Properties .....	82	Memphis Series .....	126
Chemical Properties .....	83	Minnith Series .....	127
Water Features .....	84	Moniteau Series .....	128
Soil Features .....	85	Oaklimeter Series .....	129
<b>Classification of the Soils</b> .....	87	Poynor Series .....	130
Soil Series and Their Morphology .....	87	Relfe Series .....	131
Alred Series .....	87	Rueter Series .....	132
Amagon Series .....	88	Sandbur Series .....	133
Aslinger Series .....	90	Scholten Series .....	134
Auxvasse Series .....	91	Secesh Series .....	135
Bearthicket Series .....	92	Syenite Series .....	136
Bender Series .....	93	Tilk Series .....	137
Bosket Series .....	94	Waben Series .....	138
Brussels Series .....	95	Wakeland Series .....	139
Bucklick Series .....	96	Wideman Series .....	140
Calhoun Series .....	97	Wilbur Series .....	141
Caneyville Series .....	98	Winfield Series .....	141
Captina Series .....	99	Wrengart Series .....	142
Clarksville Series .....	100	Yelton Series .....	143
Cornwall Series .....	101	<b>Formation of the Soils</b> .....	145
Coulstone Series .....	102	Factors of Soil Formation .....	145
Crider Series .....	103	Parent Material .....	145
Crowley Series .....	104	Living Organisms .....	146

---

Climate .....	146	Table 9.—Windbreaks and Environmental Plantings .....	226
Topography .....	146	Table 10.—Recreational Site Development .....	236
Time .....	146	Table 11a.—Wildlife Habitat .....	249
<b>References</b> .....	149	Table 11b.—Wildlife Habitat .....	268
<b>Glossary</b> .....	151	Table 12.—Building Site Development .....	284
<b>Tables</b> .....	165	Table 13.—Sanitary Facilities .....	302
Table 1.—Temperature and Precipitation .....	166	Table 14.—Construction Materials and Excavating .....	322
Table 2.—Freeze Dates in Spring and Fall .....	167	Table 15.—Water Management .....	342
Table 3.—Growing Season .....	167	Table 16.—Waste Management .....	360
Table 4.—Acreage and Proportionate Extent of the Soils .....	168	Table 17.—Engineering Index Properties .....	380
Table 5.—Land Capability and Yields per Acre of Crops .....	170	Table 18.—Physical Properties of the Soils .....	395
Table 6.—Pasture and Hayland Groups and Yields per Acre of Hay and Pasture .....	175	Table 19.—Chemical Properties of the Soils .....	405
Table 7.—Forest Productivity .....	180	Table 20.—Water Features .....	416
Table 8a.—Forest Management .....	190	Table 21.—Soil Features .....	431
Table 8b.—Forest Management .....	208	Table 22.—Classification of the Soils .....	436

# Foreword

---

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

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

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

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

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

Roger A. Hansen  
State Conservationist  
Natural Resources Conservation Service



# Soil Survey of Bollinger County, Missouri

By Donald Holbrook and J. Daniel Childress, Natural Resources Conservation Service

Fieldwork by Donald Holbrook, Kenneth Benham, Curtis Marshall, E. Rex Butler, Burton L. Brown, Kenneth L. Gregg, and Dave Skaer, Natural Resources Conservation Service, and Rod Taylor, Kevin Godsey, Michael L. Chalfant, Gorman Bennett, and Patrick Evans, Missouri Department of Natural Resources

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the United States Department of Agriculture, Forest Service; the Missouri Department of Natural Resources; the Missouri Department of Conservation; the Missouri Agricultural Experiment Station; and the Bollinger County Soil and Water Conservation District

BOLLINGER COUNTY is located in the southeastern part of Missouri, about 90 miles south of St. Louis and 25 miles west of the Mississippi River (fig. 1). It is bordered on the east by Cape Girardeau County, on the south by Stoddard County, on the west by Wayne and Madison Counties, and on the north by Perry County. The total area of the county is 397,235 acres, or about 620 square miles. Marble Hill is the county seat. The population of the county was 12,029 in 2000.

## General Nature of the County

This section gives general information concerning the county. It describes climate; physiography, relief, and drainage; history and development; and agriculture.

## Climate

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

In winter, the average temperature is 34.3 degrees F and the average daily minimum temperature is 23.3 degrees. The lowest temperature on record, which occurred at Marble Hill on February 2, 1951, was -27



Figure 1.—Location of Bollinger County in Missouri.

degrees. In summer, the average daily temperature is 75.4 degrees, and the average daily maximum temperature is 88 degrees. The highest temperature, which occurred at Marble Hill on July 18, 1954, was 108 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the

average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is about 46.80 inches. Of this total, about 24.29 inches, or 52 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 6.30 inches at Marble Hill on March 28, 1977. Thunderstorms occur on about 60 days each year, and most occur between May and August.

The average seasonal snowfall is 13.4 inches. The greatest snow depth at any one time during the period of record was 14 inches recorded on February 26, 1979. On an average, 6 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 12 inches recorded on February 16, 1993.

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

## Physiography, Relief, and Drainage

Bollinger County has two distinct physiographic regions within its borders. The Salem Plateau, which covers most of the county, is an extensive land region made of Ordovician age rocks that surrounds the St. Francois Mountains. In Bollinger County, these rocks are mostly cherty dolostone with some thin interbedded sandstone. A thin loess deposit covers the broader ridgetops. The plateau is highly dissected by numerous streams forming interconnecting ridges and steep hillslopes.

The Mississippi River alluvial delta area is in the southern part of Bollinger County. This area is primarily lowlands produced by the Mississippi River during a previous era. It is level and made up of terraces and intra-terrace flatlands.

The major river valleys drain to the southeast. The Whitewater River and the Little Whitewater River are in the northern part of the county. Crooked Creek, along which the town of Marble Hill is located, is in the middle part, and the Castor River is in the southwestern part of the county.

## History and Development

Bollinger County was formed in 1851 from portions of Cape Girardeau, Madison, Stoddard, and Wayne Counties. It was named for George Frederick Bollinger, who came to this area in 1797 from North Carolina. He received a 640-acre land grant from Don Louis Lorimier, the Spanish commandant at Cape Girardeau. In return for the land, Bollinger agreed to develop the land and bring more settlers from the east. He returned to North Carolina and, in 1800, brought 20 families (including six of his brothers and their families) back to settle along the banks of the Whitewater River.

Bollinger also became involved in the political arena. Bollinger was a member of the first territorial assembly, which met in 1812 in St. Louis. When Missouri became a state, Bollinger became a senator. He was one of the original senators to meet at the First Missouri State Capitol in St. Charles and he was elected to serve as president pro tem of the Senate in 1828. Bollinger also had a hand in national politics when he was a member of the electoral college that elected President Andrew Jackson to his second term (1832 to 1837).

## Agriculture

Clearing of the forests began in the early 1800s with the first European settlements in the river valleys and on the broader ridges. Several decades ago, significant acreages of corn and wheat were grown in the county. At the present time, very few acres in the county are devoted to annual crops. The cleared land is used to produce grass or grass and legume mixtures for pasture and hay. Nearly all of the pasture and hay is consumed by beef cattle. Many of the farmers in the county supplement their incomes with off-farm employment. Nearly 70 percent of the county is used for timber production. The harvesting of saw logs, primarily oak, is an important segment of the local economy. Most of the logs are processed locally into ties and pallet lumber.

## How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists

observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

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

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind

and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

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

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

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



# General Soil Map Units

---

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

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

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

## 1. Wrengart-Alred-Hildebrecht Association

### **Composition**

*Extent of the association in the survey area:* 44 percent

*Extent of the components in the association (fig. 2):*

Wrengart and similar soils—47 percent  
Alred and similar soils—32 percent  
Hildebrecht and similar soils—10 percent  
Soils of minor extent—11 percent

### **Soils of Minor Extent**

- Rueter and Gepp, very deep fine-loamy soils, and very deep clayey-skeletal soils

### **Landscape**

Wrengart—summits, backslopes, and footslopes  
Alred—shoulders and backslopes  
Hildebrecht—summits and shoulders

### **Parent Material**

Wrengart—fine-silty loess over gravelly residuum derived from cherty limestone  
Alred—gravelly colluvium derived from cherty dolostone over clayey residuum derived from dolostone  
Hildebrecht—loess over residuum derived from dolostone

### **Slope Range**

Wrengart—2 to 35 percent  
Alred—8 to 35 percent  
Hildebrecht—5 to 15 percent

### **Major Land Uses**

- Woodland, pasture and hayland, and cropland

## 2. Clarksville-Captina-Scholten Association

### **Composition**

*Extent of the association in the survey area:* 29 percent

*Extent of the components in the association (fig. 3):*

Clarksville and similar soils—32 percent  
Captina and similar soils—32 percent  
Scholten and similar soils—23 percent  
Soils of minor extent—13 percent

### **Soils of Minor Extent**

- Alred, Poynor, very deep fine-loamy soils, very deep clayey-skeletal soils, Rueter, Tilk, and Cornwall

### **Landscape**

Clarksville—narrow, rounded summits and backslopes  
Captina—moderately wide, rounded summits and shoulders  
Scholten—narrow, rounded summits and backslopes

### **Parent Material**

Clarksville—gravelly colluvium derived from cherty dolostone  
Captina—loess over loamy material derived from dolostone

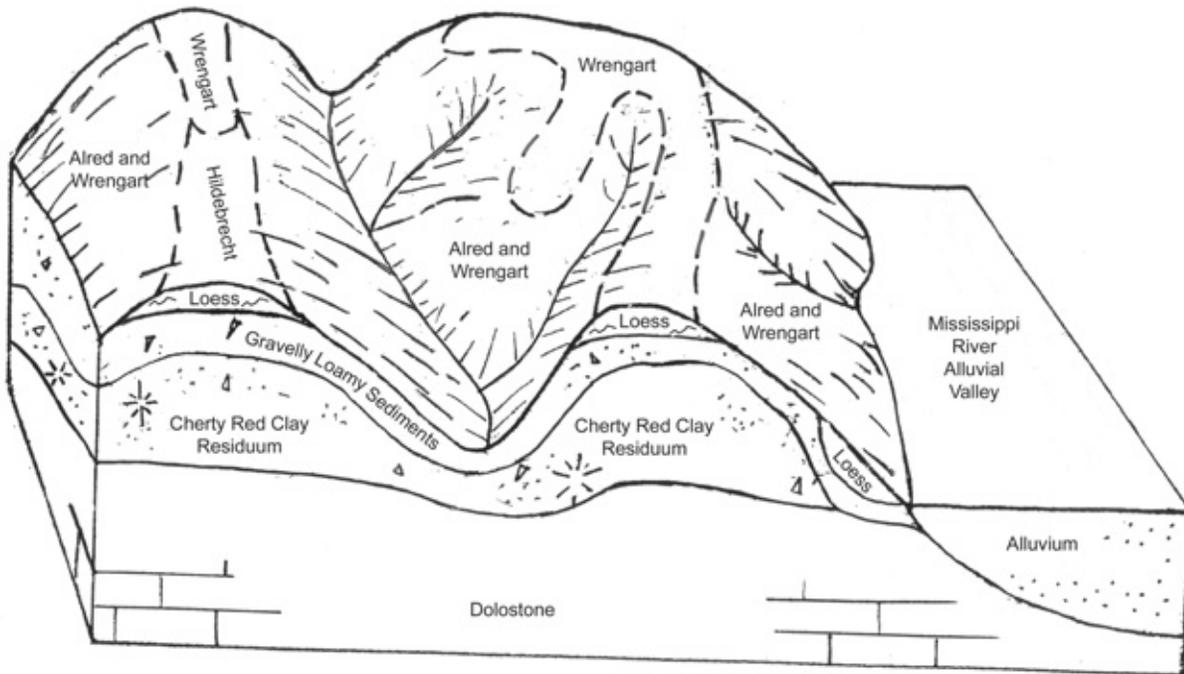


Figure 2.—Typical pattern of soils and parent material in the Wrengart-Alred-Hildebrecht association.

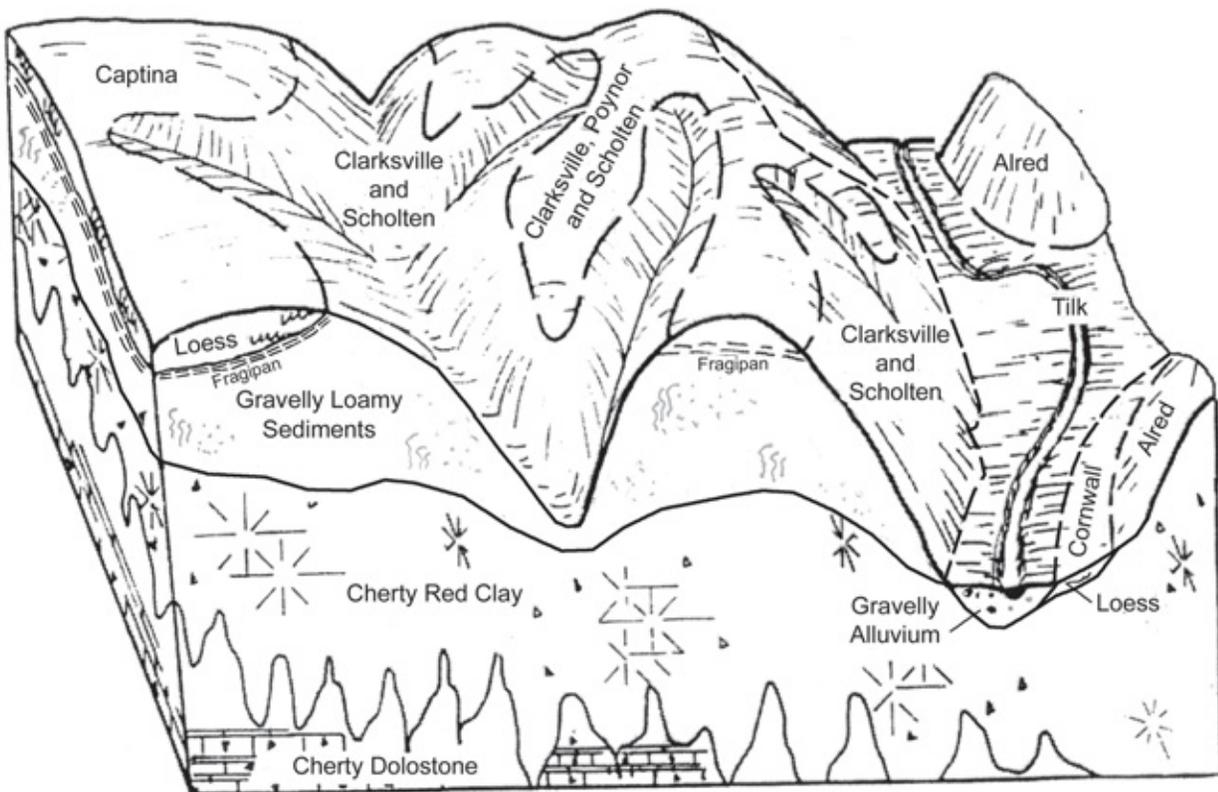


Figure 3.—Typical pattern of soils and parent material in the Clarksville-Captina-Scholten association.

Scholten—gravelly colluvium derived from cherty limestone

**Slope Range**

Clarksville—8 to 45 percent  
 Captina—3 to 15 percent  
 Scholten—3 to 45 percent

**Major Land Uses**

- Woodland, pasture, and hayland

**3. Calhoun-Falaya-Forestdale Association**

**Composition**

Extent of the association in the survey area: 11 percent

Extent of the components in the association (fig. 4):  
 Calhoun and similar soils—58 percent

Falaya and similar soils—11 percent  
 Forestdale and similar soils—11 percent  
 Soils of minor extent—20 percent

**Soils of Minor Extent**

- Bosket, Dubbs, Malden, and Oaklimeter soils, and areas of water

**Landscape**

Calhoun—low terraces  
 Falaya—natural levees and low terraces  
 Forestdale—low terraces

**Parent Material**

Calhoun—silty alluvium or loess  
 Falaya—silty alluvium from loess  
 Forestdale—clayey and silty alluvium

**Slope Range**

Calhoun—0 to 1 percent

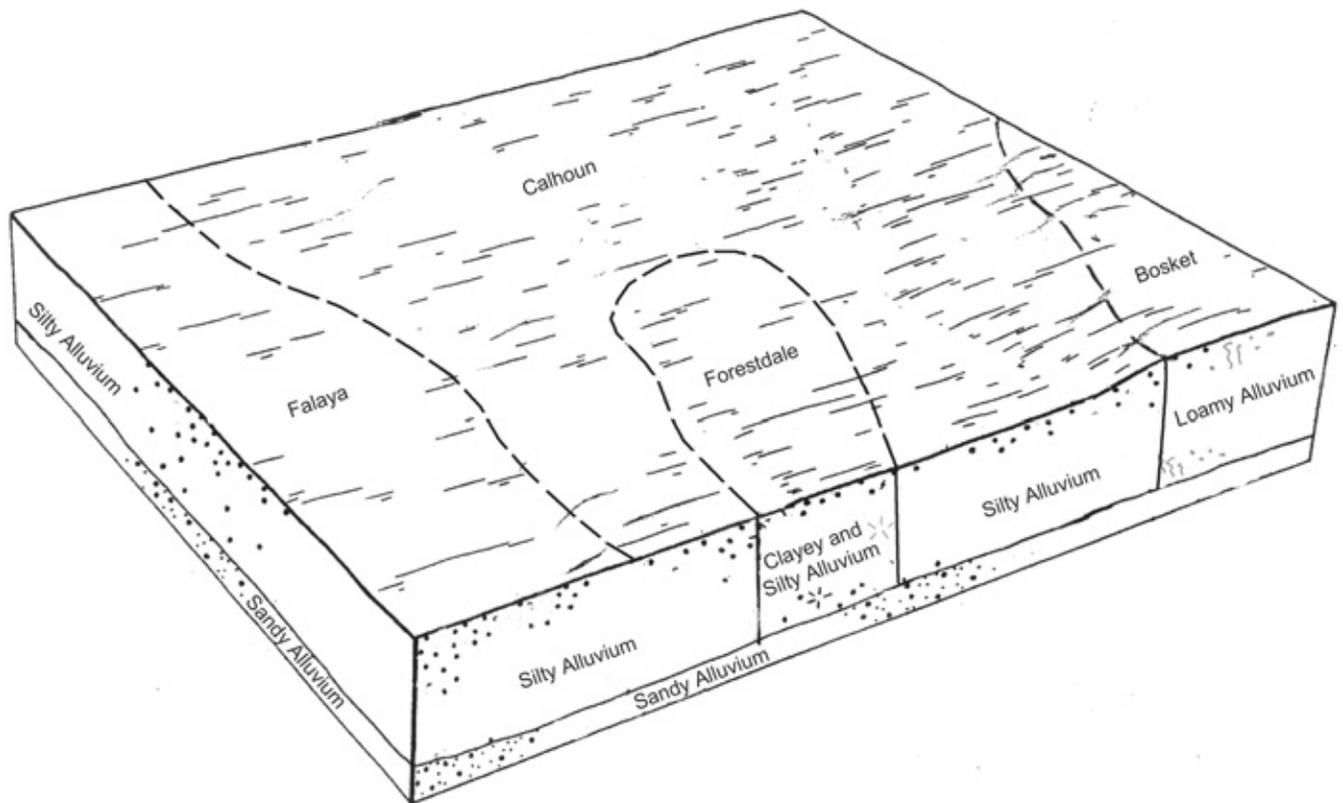


Figure 4.—Typical pattern of soils and parent material in the Calhoun-Falaya-Forestdale association.

Falaya—0 to 1 percent  
 Forestdale—0 to 1 percent

**Major Land Uses**

- Cropland

**4. Tilk-Secesh-Cornwall Association**

**Composition**

Extent of the association in the survey area: 7 percent

Extent of the components in the association (fig. 5):  
 Tilk and similar soils—49 percent

Secesh and similar soils—19 percent  
 Cornwall and similar soils—18 percent  
 Soils of minor extent—14 percent

**Soils of Minor Extent**

- Bearthicket, Gladden, Higdon, Marquand, and Poynor

**Landscape**

Tilk—low stream terraces and flood plains  
 Secesh—low stream terraces  
 Cornwall—footslopes and high stream terraces

**Parent Material**

Tilk—loamy and sandy alluvium that has a high content of rock fragments

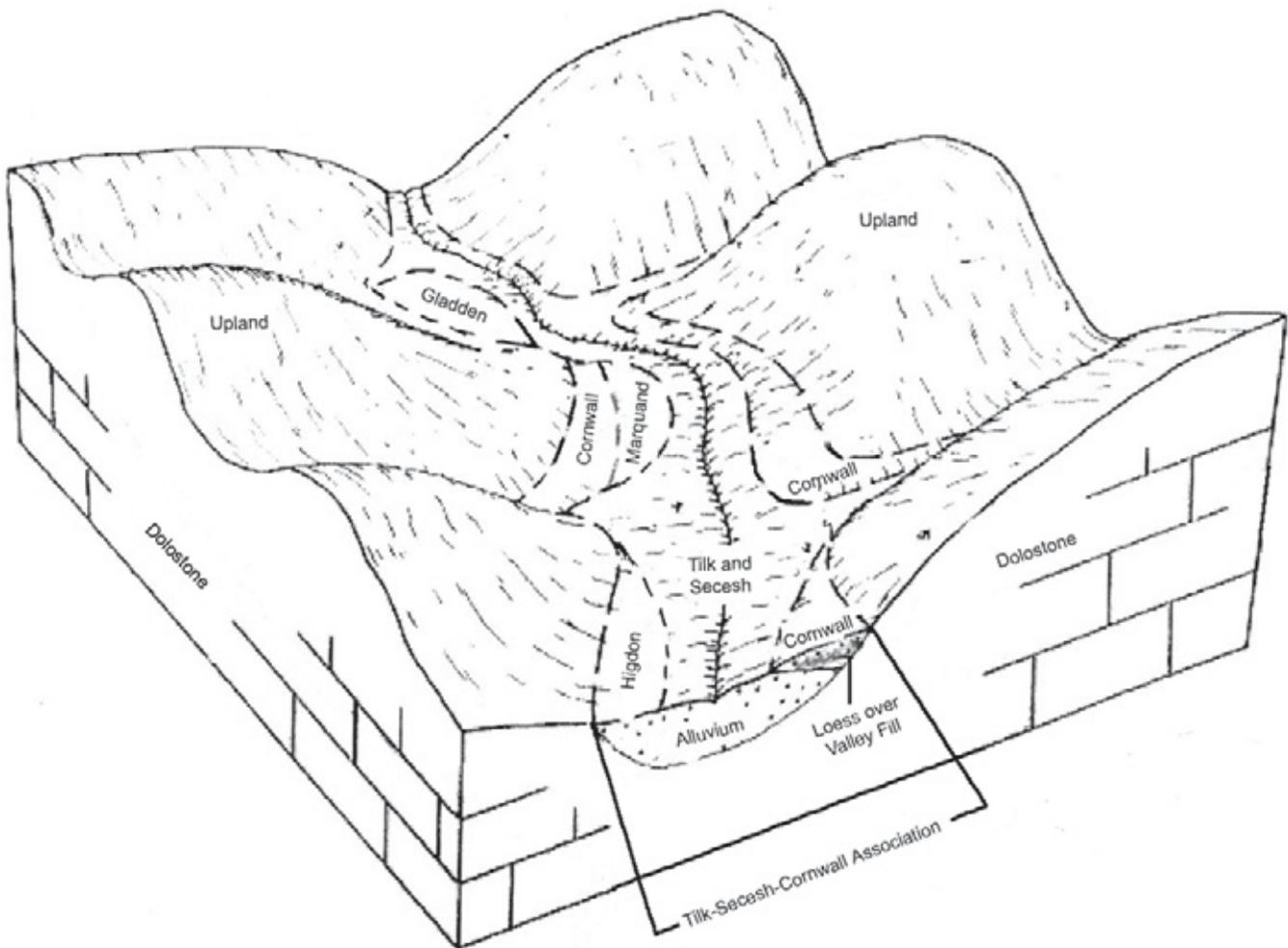


Figure 5.—Typical pattern of soils and parent material in the Tilk-Secesh-Cornwall association.

Secesh—about 2 feet of loamy material over gravelly residuum or alluvium  
 Cornwall—loess over valley fill materials

**Slope Range**

Tilk—0 to 3 percent  
 Secesh—0 to 3 percent  
 Cornwall—3 to 8 percent

**Major Land Uses**

- Pasture, hayland, and cropland

**5. Haymond-Wakeland-Moniteau Association**

**Composition**

Extent of the association in the survey area: 6 percent

Extent of the components in the association (fig. 6):  
 Haymond and similar soils—24 percent  
 Wakeland and similar soils—13 percent  
 Moniteau and similar soils—13 percent  
 Soils of minor extent—50 percent

**Soils of Minor Extent**

- Sandbur, Secesh, and Wideman

**Landscape**

Haymond—flood plains  
 Wakeland—flood plains  
 Moniteau—flood plains and stream terraces

**Parent Material**

Haymond—silty alluvium  
 Wakeland—silty alluvium  
 Moniteau—silty alluvium

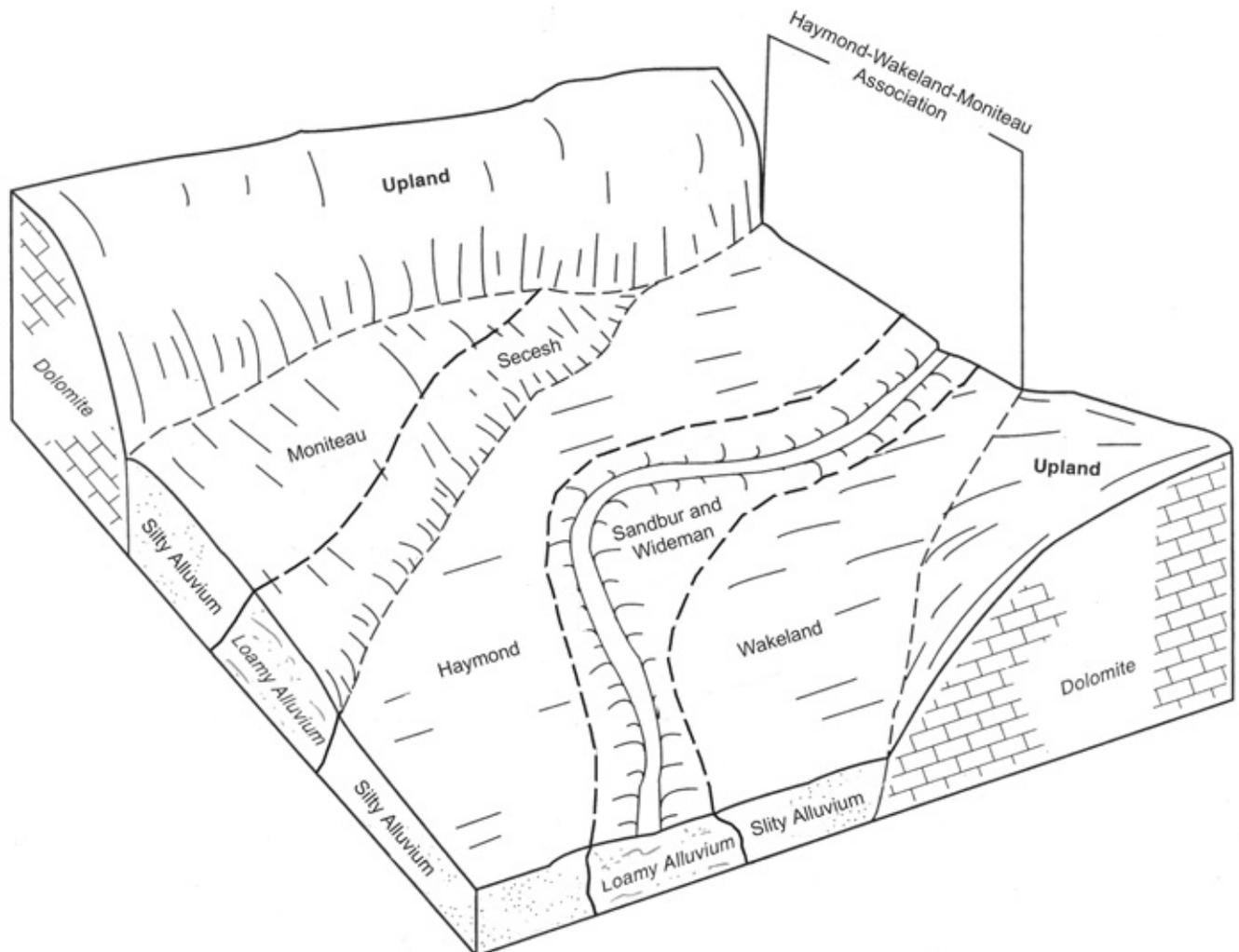


Figure 6.—Typical pattern of soils and parent material in the Haymond-Wakeland-Moniteau association.

### **Slope Range**

Haymond—0 to 3 percent  
 Wakeland—0 to 3 percent  
 Moniteau—0 to 3 percent

### **Major Land Uses**

- Pasture and hayland

## **6. Wrengart-Minnith Association**

### **Composition**

*Extent of the association in the survey area:* 2 percent

*Extent of the components in the association (fig. 7):*

Wrengart and similar soils—63 percent  
 Minnith and similar soils—27 percent  
 Soils of minor extent—10 percent

### **Soils of Minor Extent**

- Alred, Elsah, and Haymond

### **Landscape**

Wrengart—summits, backslopes, and footslopes  
 Minnith—shoulders, backslopes, and footslopes

### **Parent Material**

Wrengart—fine-silty loess over gravelly residuum derived from cherty limestone  
 Minnith—loess and loamy residuum from sandstone

### **Slope Range**

Wrengart—2 to 35 percent  
 Minnith—8 to 30 percent

### **Major Land Uses**

- Woodland, pasture and hayland, and cropland

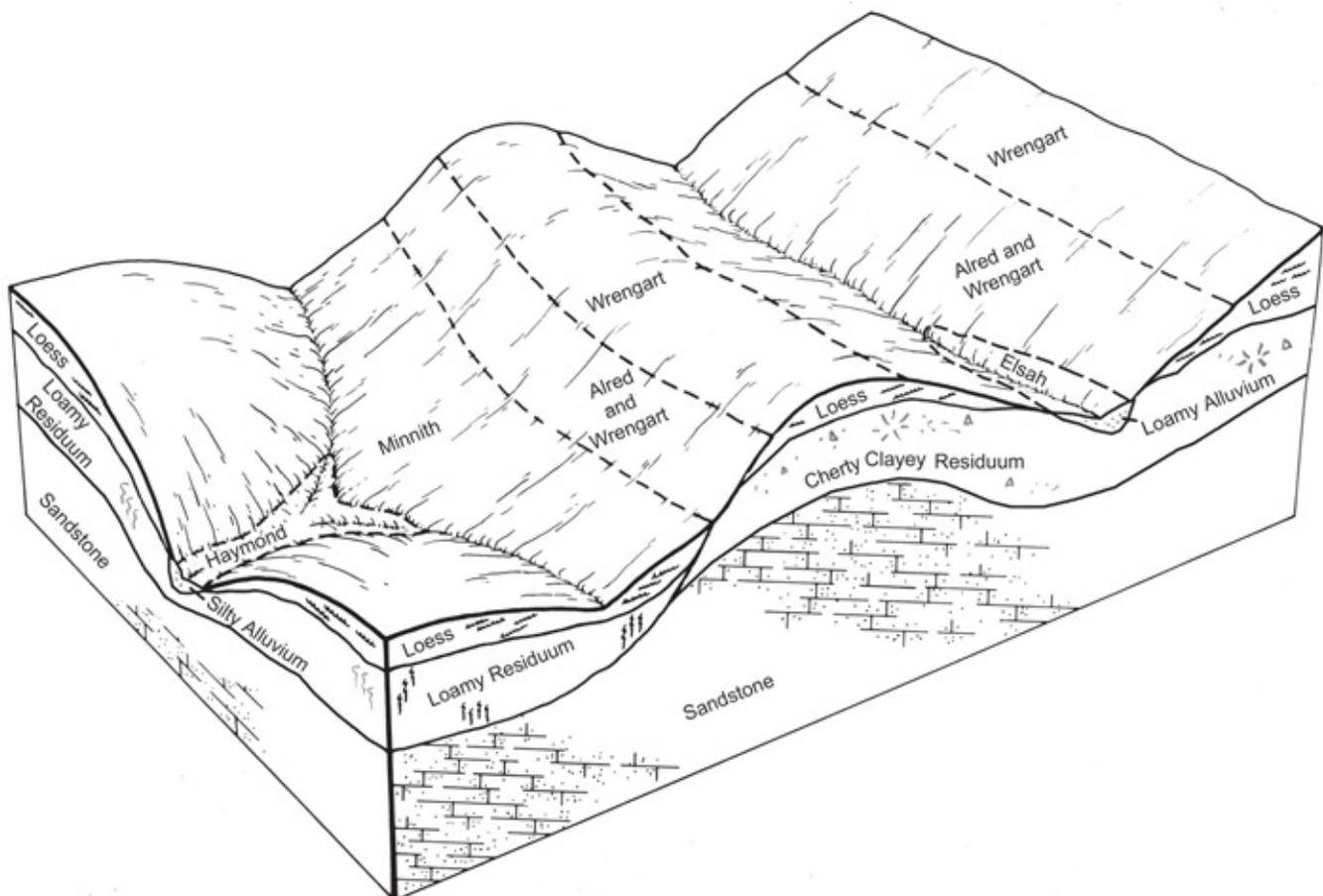


Figure 7.—Typical pattern of soils and parent material in the Wrengart-Minnith association.

## 7. Memphis-Alred-Wrengart Association

### Composition

Extent of the association in the survey area: 1 percent

Extent of the components in the association (fig. 8):

Memphis and similar soils—57 percent

Alred and similar soils—28 percent

Wrengart and similar soils—6 percent

Soils of minor extent—9 percent

### Soils of Minor Extent

- Brussels, Gasconade, Rueter, and Gepp

### Landscape

Memphis—summits and shoulders

Alred—backslopes

Wrengart—summits, backslopes, and footslopes

### Parent Material

Memphis—loess

Alred—gravelly colluvium derived from cherty dolostone over clayey residuum derived from dolostone

Wrengart—fine-silty loess over gravelly residuum derived from cherty limestone

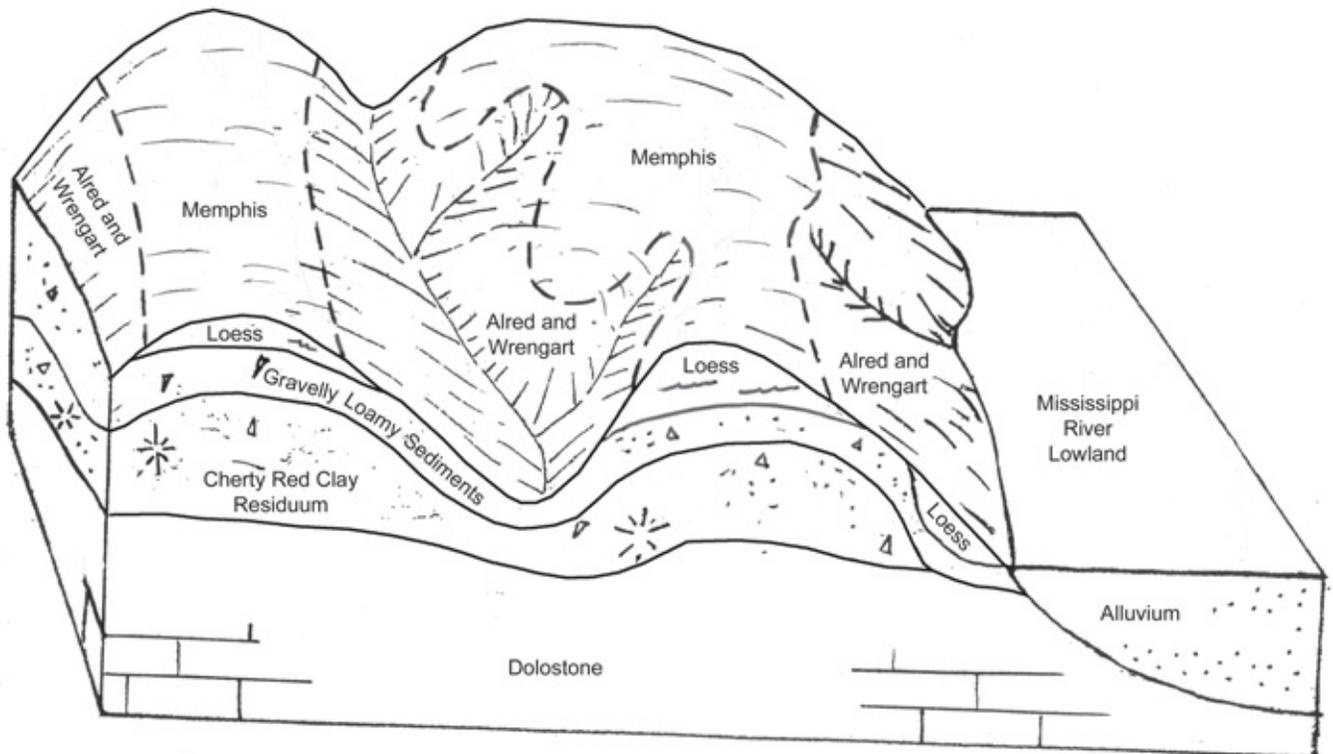


Figure 8.—Typical pattern of soils and parent material in the Memphis-Alred-Wrengart association.

### Slope Range

Memphis—3 to 15 percent

Alred—8 to 35 percent

Wrengart—2 to 35 percent

### Major Land Uses

- Woodland, pasture and hayland, and cropland



## Detailed Soil Map Units

---

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

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

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

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

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

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Captina silt loam, 3 to 8 percent slopes, is a phase of the Captina series.

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

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

terms used in describing the soils or miscellaneous areas.

### **60033—Wrengart silt loam, 5 to 9 percent slopes, eroded**

#### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Shoulders and backslopes

*Parent material:* Fine-silty loess over gravelly residuum derived from cherty limestone

#### **Composition**

Wrengart and similar soils—85 percent

Minor components—15 percent

- Winfield
- Hildebrecht

#### **Typical Profile**

Ap—0 to 5 inches; silt loam

BE—5 to 11 inches; silt loam

Bt—11 to 34 inches; silty clay loam

2Btx—34 to 57 inches; silty clay loam

3Bt—57 to 62 inches; extremely gravelly silt loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 24 to 42 inches

### **60046—Minnith silt loam, 15 to 30 percent slopes**

#### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Fine-silty loess over loamy residuum derived from sandstone

#### **Composition**

Minnith and similar soils—80 percent

Minor components—20 percent

- Shallow, loamy soils
- Rock outcrop

- Moderately deep, fine-loamy soils
- Very deep, well drained, fine-loamy soils

#### **Typical Profile**

Ap—0 to 5 inches; silt loam

Bt1—5 to 35 inches; silt clay loam

2Bt2—35 to 80 inches; loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 36 to 72 inches

### **60053—Winfield silt loam, 3 to 8 percent slopes, eroded**

#### **Setting**

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Loess

#### **Composition**

Winfield and similar soils—85 percent

Minor components—15 percent

- Very deep, well drained, fine-silty soils
- Wrengart
- Hildebrecht

#### **Typical Profile**

Ap—0 to 6 inches; silt loam

Bt1—6 to 20 inches; silt loam

Bt2—20 to 26 inches; silty clay loam

Bt3—26 to 52 inches; silt loam

Bt4—52 to 60 inches; silt loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Very high (more than 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* 20 to 30 inches

## 60054—Minnith silt loam, 8 to 15 percent slopes

### Setting

*Landform:* Hillslopes

*Position on the landform:* Summits, shoulders, and backslopes

*Parent material:* Fine-silty loess over loamy residuum derived from sandstone

### Composition

Minnith and similar soils—85 percent

Minor components—15 percent

- Moderately deep, loamy soils
- Very deep, loamy soils

### Typical Profile

Ap—0 to 5 inches; silt loam

Bt1—5 to 35 inches; silty clay loam

2Bt2—35 to 80 inches; loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 36 to 72 inches

## 60055—Winfield silt loam, 2 to 5 percent slopes

### Setting

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Loess

### Composition

Winfield and similar soils—92 percent

Minor components—8 percent

- Wrengart

### Typical Profile

Ap—0 to 9 inches; silt loam

BE—9 to 13 inches; silt loam

Bt—13 to 62 inches; silty clay loam

C—62 to 80 inches; silt loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 24 to 42 inches

## 66000—Moniteau silt loam, 0 to 3 percent slopes, occasionally flooded

### Setting

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Silty alluvium

### Composition

Moniteau and similar soils—90 percent

Minor components—10 percent

- Wakeland
- Wilbur

### Typical Profile

Ap—0 to 10 inches; silt loam

E—10 to 18 inches; silt loam

Btg1—18 to 34 inches; silt loam

Btg2—34 to 75 inches; silt loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* Very high (more than 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* 0 to 12 inches

## 66054—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded

### Setting

*Landform:* River valleys

*Position on the landform:* Low flood plains

*Parent material:* Silty alluvium

### Composition

Wakeland and similar soils—85 percent

Minor components—15 percent

- Haymond
- Wideman
- Kaintuck

### **Typical Profile**

A—0 to 6 inches; silt loam  
 Bw—6 to 24 inches; silt loam  
 Bg—24 to 58 inches; silt loam  
 Ab—58 to 80 inches; silt loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Somewhat poorly drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Very high (more than 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* Frequent (more than a 50 percent chance in any year)  
*Depth to water table:* 15 to 24 inches

## **66055—Haymond silt loam, 0 to 3 percent slopes, occasionally flooded**

### **Setting**

*Landform:* River valleys  
*Position on the landform:* High flood plains  
*Parent material:* Silty alluvium

### **Composition**

Haymond and similar soils—90 percent  
 Minor components—10 percent

- Sandbur
- Wakeland
- Relfe

### **Typical Profile**

A—0 to 5 inches; silt loam  
 Bw1—5 to 51 inches; silt loam  
 Bw2—51 to 80 inches; silt loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Very high (more than 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* More than 6 feet

## **73055—Alred-Rueter complex, 15 to 35 percent slopes, very stony**

### **Setting**

*Landform:* Hillslopes  
*Position on the landform:* Backslopes  
*Parent material:* Colluvium over residuum derived from cherty dolostone

### **Composition**

Alred and similar soils—45 percent  
 Rueter and similar soils—35 percent  
 Minor components—20 percent

- Gepp
- Very deep, fine-loamy soils
- Very deep, clayey-skeletal or clayey soils
- Coulstone
- Bender

### **Typical Profile**

#### **Alred**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 7 inches; very gravelly silt loam  
 E—7 to 11 inches; gravelly silt loam  
 Bt1—11 to 30 inches; very gravelly silt loam  
 2Bt2—30 to 79 inches; cobbly clay

#### **Rueter**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 4 inches; very gravelly silt loam  
 E—4 to 17 inches; gravelly silt loam  
 Bt1—17 to 32 inches; very gravelly silt loam  
 2Bt2—32 to 43 inches; very gravelly silty clay  
 3Bt3—43 to 71 inches; very cobbly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Alred—well drained; Rueter—somewhat excessively drained  
*Permeability:* Alred—moderate (0.6 inch to 2 inches per hour) over slow (0.06 to 0.2 inch per hour); Rueter—moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Low  
*Shrink-swell potential:* Moderate (3 to 6 percent)  
*Flooding:* None  
*Depth to water table:* More than 6 feet

## 73100—Wrengart silt loam, 2 to 5 percent slopes

### Setting

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Fine-silty loess over clayey residuum derived from dolostone

### Composition

Wrengart and similar soils—90 percent

Minor components—10 percent

- Winfield
- Hildebrecht

### Typical Profile

Ap—0 to 8 inches; silt loam

Bt—8 to 36 inches; silty clay loam

2Btx—36 to 61 inches; silt loam

3Bt—61 to 80 inches; gravelly silt clay

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 24 to 42 inches

## 73101—Wrengart silt loam, 5 to 9 percent slopes

### Setting

*Landform:* Ridges and hillslopes

*Position on the landform:* Summits and backslopes

*Parent material:* Fine-silty loess over clayey residuum derived from dolostone

### Composition

Wrengart and similar soils—90 percent

Minor components—10 percent

- Winfield
- Hildebrecht

### Typical Profile

Ap—0 to 8 inches; silt loam

Bt—8 to 36 inches; silty clay loam

2Btx—36 to 61 inches; silt loam

3Bt—61 to 80 inches; gravelly silty clay

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 24 to 42 inches

## 73139—Poynor-Clarksville-Scholten complex, 8 to 15 percent slopes, stony

### Setting

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Poynor—gravelly colluvium over clayey residuum from cherty dolostone; Clarksville—gravelly colluvium derived from cherty dolostone; Scholten—gravelly colluvium derived from cherty dolostone

### Composition

Poynor and similar soils—35 percent

Clarksville and similar soils—32 percent

Scholten and similar soils—15 percent

Minor components—18 percent

- Very deep, fine-loamy soils
- Yelton
- Very deep, clayey-skeletal or clayey soils
- Bender

### Typical Profile

#### Poynor

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; gravelly silt loam

E—4 to 13 inches; very gravelly silt loam

Bt1—13 to 24 inches; extremely gravelly silt loam

2Bt2—24 to 80 inches; clay

#### Clarksville

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; gravelly silt loam

E—5 to 8 inches; gravelly silt loam

Bt1—8 to 18 inches; very gravelly loam

2Bt2—18 to 42 inches; very gravelly loam

3Bt3—42 to 65 inches; clay

#### Scholten

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; gravelly silt loam

E—3 to 8 inches; gravelly silt loam

Bt—8 to 17 inches; very gravelly silty clay loam  
 2Btx—17 to 41 inches; very gravelly silt loam  
 3Bt—41 to 80 inches; gravelly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poynor—well drained; Clarksville—somewhat excessively drained; Scholten—moderately well drained

*Permeability:* Poynor—moderate (0.6 inch to 2 inches per hour); Clarksville—moderate (0.6 inch to 2 inches per hour); Scholten—moderate (0.6 inch to 2 inches per hour) over very slow (less than 0.06 inch per hour)

*Available water capacity:* Poynor—low (3 to 6 inches); Clarksville—low (3 to 6 inches); Scholten—very low (0 to 3 inches)

*Shrink-swell potential:* Poynor—moderate (3 to 6 percent); Clarksville—low (0 to 3 percent); Scholten—moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* Poynor—more than 6 feet; Clarksville—more than 6 feet; Scholten—12 to 29 inches

## **73140—Clarksville-Scholten complex, 15 to 45 percent slopes, very stony**

### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Gravelly colluvium derived from cherty dolostone

### **Composition**

Clarksville and similar soils—50 percent

Scholten and similar soils—30 percent

Minor components—20 percent

- Tilk
- Very deep, fine-loamy soils
- Poynor

### **Typical Profile**

#### **Clarksville**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 6 inches; gravelly silt loam  
 E—6 to 13 inches; gravelly silt loam  
 Bt1—13 to 21 inches; very gravelly silt loam  
 2Bt2—21 to 43 inches; extremely gravelly clay loam  
 3Bt3—43 to 66 inches; very gravelly clay

#### **Scholten**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 6 inches; very gravelly silt loam  
 E—6 to 13 inches; very gravelly silt loam  
 Bt—13 to 34 inches; extremely gravelly clay loam  
 2Btx—34 to 58 inches; very gravelly loam  
 3Bt—58 to 80 inches; very gravelly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Clarksville—somewhat excessively drained; Scholten—moderately well drained

*Permeability:* Clarksville—moderate (0.6 inch to 2 inches per hour); Scholten—moderate (0.6 inch to 2 inches per hour) over very slow (less than 0.06 inch per hour)

*Available water capacity:* Low (3 to 6 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* Clarksville—more than 6 feet; Scholten—14 to 35 inches

## **73141—Firebaugh silt, 3 to 8 percent slopes**

### **Setting**

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Loess over loamy and clayey residuum derived from cherty dolostone

### **Composition**

Firebaugh and similar soils—90 percent

Minor components—10 percent

- Scholten
- Clarksville

### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 4 inches; silt  
 E—4 to 8 inches; silt  
 Bt—8 to 21 inches; silty clay loam  
 2Btx—21 to 36 inches; very gravelly silt loam  
 3Bt—36 to 71 inches; extremely cobbly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour) over slow (0.06 to 0.2 inch per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 18 to 26 inches

### **73145—Crider silt loam, 3 to 8 percent slopes, eroded**

#### **Setting**

*Landform:* Basins

*Position on the landform:* Summits

*Parent material:* Loess over clayey residuum derived from dolostone

#### **Composition**

Crider and similar soils—90 percent

Minor components—10 percent

- Very deep, fine soils
- Hildebrecht
- Caneyville
- Rock outcrop

#### **Typical Profile**

Ap—0 to 8 inches; silt loam

Bt1—8 to 32 inches; silty clay loam

2Bt2—32 to 74 inches; silty clay loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* More than 6 feet

### **73146—Marquand silt loam, 3 to 8 percent slopes**

#### **Setting**

*Landform:* Hillslopes and basin floors

*Position on the landform:* Footslopes

*Parent material:* Silty and loamy slope alluvium derived from limestone and dolostone

#### **Composition**

Marquand and similar soils—90 percent

Minor components—10 percent

- Cornwall
- Bearthicket
- Higdon

#### **Typical Profile**

Ap—0 to 5 inches; silt loam

E—5 to 8 inches; silt loam

Bt1—8 to 22 inches; silty clay loam

2Bt2—22 to 43 inches; silty clay loam

3Bt3—43 to 80 inches; silty clay loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* 24 to 30 inches

### **73150—Caneyville-Bucklick complex, 8 to 15 percent slopes, rocky**

#### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Caneyville—clayey residuum derived from dolostone; Bucklick—loess over clayey residuum derived from dolostone

#### **Composition**

Caneyville and similar soils—50 percent

Bucklick and similar soils—35 percent

Minor components—15 percent

- Gasconade
- Gepp
- Crider
- Rock outcrop

#### **Typical Profile**

##### **Caneyville**

Ap—0 to 8 inches; silt loam

Bt1—8 to 18 inches; clay

Bt2—18 to 30 inches; clay

R—30 inches; bedrock

##### **Bucklick**

Ap—0 to 3 inches; silt loam

Bt1—3 to 16 inches; silty clay

2Bt2—16 to 45 inches; clay

2R—45 inches; bedrock

#### **Soil Properties and Qualities**

*Depth to bedrock:* Caneyville—moderately deep (20 to 40 inches); Bucklick—deep (40 to 60 inches)

*Drainage class:* Well drained  
*Permeability:* Caneyville—slow (0.06 to 0.2 inch per hour); Bucklick—moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Caneyville—moderate (3 to 6 percent); Bucklick—high (6 to 9 percent)  
*Flooding:* None  
*Depth to water table:* More than 6 feet

### **73151—Caneyville-Gasconade-Bucklick complex, 15 to 25 percent slopes, rocky**

#### **Setting**

*Landform:* Hillslopes  
*Position on the landform:* Backslopes  
*Parent material:* Caneyville—clayey residuum derived from dolostone; Gasconade—residuum derived from dolostone; Bucklick—loess over clayey residuum derived from dolostone

#### **Composition**

Caneyville and similar soils—40 percent  
 Gasconade and similar soils—30 percent  
 Bucklick and similar soils—25 percent  
 Minor components—5 percent

- Rock outcrop

#### **Typical Profile**

##### **Caneyville**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 4 inches; silt loam  
 Bt1—4 to 11 inches; silty clay  
 Bt2—11 to 31 inches; silty clay  
 R—31 inches; bedrock

##### **Gasconade**

A—0 to 3 inches; silty clay  
 Bw—3 to 16 inches; very cobbly silty clay loam  
 R—16 inches; bedrock

##### **Bucklick**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 6 inches; silt loam  
 Bt1—6 to 31 inches; silty clay  
 2Bt2—31 to 47 inches; clay  
 2R—47 inches; bedrock

#### **Soil Properties and Qualities**

*Depth to bedrock:* Caneyville—moderately deep (20 to 40 inches); Gasconade—very shallow and shallow (4 to 20 inches); Bucklick—deep (40 to 60 inches)

*Drainage class:* Caneyville—well drained; Gasconade—somewhat excessively drained; Bucklick—well drained  
*Permeability:* Caneyville—slow (0.06 inch to 0.2 inches per hour); Gasconade—moderately slow (0.2 to 0.6 inch per hour); Bucklick—moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Caneyville—low (3 to 6 inches); Gasconade—very low (0 to 3 inches); Bucklick—low (3 to 6 inches)  
*Shrink-swell potential:* Caneyville—moderate (3 to 6 percent); Gasconade—moderate (3 to 6 percent); Bucklick—high (6 to 9 percent)  
*Flooding:* None  
*Depth to water table:* More than 6 feet

### **73156—Alred-Gepp complex, 8 to 15 percent slopes, stony**

#### **Setting**

*Landform:* Hillslopes  
*Position on the landform:* Summits and shoulders  
*Parent material:* Alred—gravelly colluvium over clayey residuum derived from dolostone; Gepp—clayey residuum derived from dolostone

#### **Composition**

Alred and similar soils—55 percent  
 Gepp and similar soils—20 percent  
 Minor components—25 percent

- Clarksville
- Very deep, clayey-skeletal soils
- Gasconade
- Moderately deep, loamy-skeletal soils

#### **Typical Profile**

##### **Alred**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 6 inches; very gravelly silt loam  
 E—6 to 11 inches; gravelly silt loam  
 Bt1—11 to 31 inches; very gravelly silt loam  
 2Bt2—31 to 79 inches; clay

##### **Gepp**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 6 inches; very gravelly silt loam  
 Bt1—6 to 12 inches; clay  
 Bt2—12 to 67 inches; clay

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Alred—moderate (0.6 inch to 2 inches)

per hour) over slow (0.06 to 0.2 inch per hour);  
 Gepp—moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Moderate (3 to 6 percent)  
*Flooding:* None  
*Depth to water table:* More than 6 feet

### **73157—Captina silt loam, 3 to 8 percent slopes**

#### ***Setting (fig. 9)***

*Landform:* Ridges  
*Position on the landform:* Summits  
*Parent material:* Loess over loamy colluvium and residuum derived from dolostone

#### ***Composition***

Captina and similar soils—90 percent  
 Minor components—10 percent

- Scholten
- Clarksville
- Very deep, fine-silty soils

#### ***Typical Profile***

Ap—0 to 5 inches; silt loam  
 Bt—5 to 25 inches; silty clay loam  
 2Btx—25 to 31 inches; extremely gravelly silt loam  
 3Bt—31 to 78 inches; gravelly clay

#### ***Soil Properties and Qualities***

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Moderately well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour) over slow (0.06 to 0.2 inch per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Moderate (3 to 6 percent)  
*Flooding:* None  
*Depth to water table:* 18 to 36 inches

### **73223—Coulstone-Bender complex, 15 to 50 percent slopes, very stony**

#### ***Setting***

*Landform:* Hillslopes



Figure 9.—Mixed hardwoods in an area of Captina silt loam, 3 to 8 percent slopes.

*Position on the landform:* Backslopes

*Parent material:* Coulstone—gravelly colluvium derived from sandstone; Bender—residuum from sandstone

### **Composition**

Coulstone and similar soils—40 percent

Bender and similar soils—25 percent

Minor components—35 percent

- Clarksville
- Scholten
- Rock outcrop

### **Typical Profile**

#### **Coulstone**

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 6 inches; extremely cobbly sandy loam

Bt1—6 to 29 inches; extremely cobbly sandy loam

2Bt2—29 to 42 inches; extremely stony sandy loam

3Bt3—42 to 80 inches; extremely stony clay loam

#### **Bender**

Oe—0 to 1 inch; moderately decomposed plant material

A—1 to 5 inches; extremely cobbly sandy loam

Bt1—5 to 21 inches; extremely cobbly sandy loam

Bt2—21 to 31 inches; extremely stony sandy loam

2R—31 to 80 inches; bedrock

### **Soil Properties and Qualities**

*Depth to bedrock:* Coulstone—very deep (more than 60 inches); Bender—moderately deep (20 to 40 inches)

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderately rapid (2 to 6 inches per hour)

*Available water capacity:* Very low (0 to 3 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* More than 6 feet

## **73264—Alred-Wrengart complex, 14 to 35 percent slopes, very stony, rocky**

*Setting (fig. 10)*

*Landform:* Hillslopes

*Position on the landform:* Alred—backslopes;  
Wrengart—footslopes

*Parent material:* Alred—cherty colluvium over clayey residuum derived from cherty dolostone;  
Wrengart—loess over residuum derived from cherty dolostone

### **Composition**

Alred and similar soils—55 percent

Wrengart and similar soils—15 percent

Minor components—30 percent

- Rueter
- Very deep, clayey-skeletal soils
- Scholten
- Very deep, fine-loamy soils
- Gepp
- Rock outcrop

### **Typical Profile**

#### **Alred**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inch; gravelly silt loam

E—3 to 8 inches; gravelly silt loam

Bt1—8 to 22 inches; very gravelly silty clay loam

2Bt2—22 to 80 inches; gravelly clay

#### **Wrengart**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 10 inches; silt loam

Bt—10 to 30 inches; silt loam

Btx—30 to 53 inches; silty clay loam

2Bt—53 to 80 inches; very gravelly silty clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Alred—well drained; Wrengart—moderately well drained

*Permeability:* Alred—moderate (0.6 inch to 2 inches per hour) over slow (0.06 to 0.2 inch per hour);  
Wrengart—moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* Alred—moderate (6 to 9 inches); Wrengart—high (9 to 12 inches)

*Shrink-swell potential:* Alred—moderate (3 to 6 percent); Wrengart—low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* Alred—more than 6 feet;  
Wrengart—30 to 38 inches

## **73265—Captina-Scholten complex, 3 to 8 percent slopes**

*Setting*

*Landform:* Ridges

*Position on the landform:* Captina—summits;  
Scholten—shoulders

*Parent material:* Captina—loess over loamy colluvium and residuum derived from dolostone; Scholten—colluvium derived from cherty dolostone



Figure 10.—A typical land use pattern in an area of Alred-Wrengart complex, 14 to 35 percent slopes, very stony, rocky. The less sloping areas are cleared and used for pasture and hayland, while the steeper areas remain forested.

### **Composition**

Captina and similar soils—75 percent  
 Scholten and similar soils—15 percent  
 Minor components—10 percent

- Very deep, fine-silty soils
- Clarksville
- Poynor

### **Typical Profile**

#### **Captina**

Ap—0 to 8 inches; silt loam  
 Bt—8 to 26 inches; silty clay loam  
 2Btx—26 to 43 inches; extremely gravelly silt loam  
 3Bt—43 to 80 inches; very cobbly clay

#### **Scholten**

A—0 to 2 inches; gravelly silt loam  
 E—2 to 7 inches; gravelly silt loam  
 Bt—7 to 16 inches; very gravelly silty clay loam  
 2Btx—16 to 40 inches; extremely gravelly silt loam  
 3Bt—40 to 80 inches; very gravelly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Moderately well drained  
*Permeability:* Captina—moderate (0.6 inch to 2 inches per hour) over slow (less than 0.06 inch per hour);  
 Scholten—moderate (0.6 inch to 2 inches per hour) over very slow (0.06 to 0.2 inch per hour)  
*Available water capacity:* Captina—low (3 to 6 inches);  
 Scholten—very low (0 to 3 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* Captina—19 to 34 inches;  
 Scholten—12 to 29 inches

**73266—Hildebrecht silt loam,  
 8 to 15 percent slopes, eroded**

### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Loess over residuum derived from dolostone

### **Composition**

Hildebrecht and similar soils—85 percent

Minor components—15 percent

- Wrengart
- Very deep, clayey-skeletal soils
- Alred

### **Typical Profile**

A—0 to 4 inches; silt loam

Bt—4 to 36 inches; silty clay loam

Btx1—36 to 39 inches; silt loam

Btx2—39 to 62 inches; extremely gravelly silt loam

2Bt—62 to 80 inches; gravelly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour) above the fragipan and very slow (less than 0.06 inch per hour) in the fragipan

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 24 to 36 inches

## **73267—Yelton-Scholten complex, 8 to 15 percent slopes**

### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Shoulders and backslopes

*Parent material:* Yelton—loess over colluvium from cherty dolostone and sandstone; Scholten—colluvium derived from cherty dolostone

### **Composition**

Yelton and similar soils—65 percent

Scholten and similar soils—20 percent

Minor components—15 percent

- Clarksville
- Poynor
- Very deep, moderately well drained, fine-silty soils

### **Typical Profile**

#### **Yelton**

A—0 to 5 inches; silt loam

E—5 to 11 inches; silt loam

Bt—11 to 29 inches; clay loam

2Btx—29 to 42 inches; very gravelly loam

3Bt—42 to 80 inches; very gravelly sandy clay loam

#### **Scholten**

A—0 to 2 inches; gravelly silt loam

E—2 to 7 inches; gravelly silt loam

Bt—7 to 16 inches; very gravelly silty clay loam

2Btx—16 to 40 inches; extremely gravelly silt loam

3Bt—40 to 80 inches; gravelly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Yelton—moderate (0.6 inch to 2 inches per hour) over very slow (less than 0.06 inch per hour); Scholten—moderate (0.6 inch to 2 inches per hour) over slow (0.06 to 0.2 inch per hour)

*Available water capacity:* Yelton—low (3 to 6 inches); Scholten—very low (0 to 3 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* Yelton—18 to 24 inches;

Scholten—12 to 29 inches

## **73269—Brussels-Gasconade-Rock outcrop complex, 30 to 90 percent slopes, very bouldery**

### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Brussels—backslopes; Gasconade—backslopes and shoulders

*Parent material:* Brussels—gravelly colluvium over gravelly residuum derived from dolostone; Gasconade—gravelly residuum derived from dolostone

### **Composition**

Brussels—40 percent

Gasconade and similar soils—30 percent

Rock outcrop—15 percent

Minor components—15 percent

- Poynor
- Caneyville
- Vertical bluffs

### **Typical Profile**

#### **Brussels**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 10 inches; gravelly silty clay loam

Bw1—10 to 49 inches; very gravelly silty clay loam

Bw2—49 to 70 inches; gravelly silty clay loam

**Gasconade**

A—0 to 9 inches; cobbly clay  
 Bw—9 to 14 inches; very cobbly clay  
 R—14 inches; bedrock

**Soil Properties and Qualities**

*Depth to bedrock:* Brussels—very deep (more than 60 inches); Gasconade—very shallow and shallow (4 to 20 inches)

*Drainage class:* Brussels—well drained; Gasconade—somewhat excessively drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* Brussels—low (3 to 6 inches); Gasconade—very low (0 to 3 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* More than 6 feet

**Description of Rock Outcrop**

*Kind of bedrock:* Dolostone

**73270—Wrengart silt loam, 9 to 14 percent slopes, eroded****Setting**

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Loess over residuum from cherty limestone

**Composition**

Wrengart and similar soils—90 percent

Minor components—10 percent

- Alred
- Hildebrech
- Very deep, clayey-skeletal or clayey soils

**Typical Profile**

Ap—0 to 6 inches; silt loam

Bt—6 to 26 inches; silty clay loam

Btx—26 to 45 inches; silt loam

2Bt1—45 to 60 inches; very gravelly silt loam

3Bt2—60 to 80 inches; gravelly clay

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 24 to 42 inches

**73343—Captina silt loam, 3 to 8 percent slopes, eroded****Setting**

*Landform:* Ridges

*Position on the landform:* Summits and shoulders

*Parent material:* Loess over loamy colluvium and residuum derived from dolostone

**Composition**

Captina and similar soils—85 percent

Minor components—15 percent

- Very deep, fine-silty soils
- Clarksville
- Scholten

**Typical Profile**

Ap—0 to 4 inches; silt loam

Bt—4 to 20 inches; silty clay loam

2Btx—20 to 28 inches; extremely gravelly silt loam

3Bt—28 to 75 inches; gravelly clay

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour) over slow (0.06 to 0.2 inch per hour)

*Available water capacity:* Low (3 to 6 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 19 to 33 inches

**73344—Captina silt loam, 8 to 15 percent slopes, eroded****Setting**

*Landform:* Hillslopes

*Position on the landform:* Shoulders and backslopes

*Parent material:* Loess over loamy colluvium and residuum derived from dolostone

**Composition**

Captina and similar soils—85 percent

Minor components—15 percent

- Poynor
- Clarksville
- Scholten

**Typical Profile**

Ap—0 to 7 inches; silt loam  
 Bt—7 to 24 inches; silty clay loam  
 Btx—24 to 47 inches; gravelly silt clay loam  
 2Bt—47 to 75 inches; very gravelly silty clay loam

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Moderately well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
 over slow (0.06 to 0.2 inch per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* 19 to 33 inches

**73345—Hildebrecht silt loam, 5 to 9 percent slopes****Setting (fig. 11)**

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Loess over loamy residuum derived from dolostone

**Composition**

Hildebrecht and similar soils—90 percent  
 Minor components—10 percent

- Wrengart
- Alred

**Typical Profile**

Ap—0 to 11 inches; silt loam  
 Bt—11 to 27 inches; silty clay loam  
 2Btx—27 to 44 inches; very gravelly silt loam  
 3Bt—44 to 60 inches; gravelly silty clay

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Moderately well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
 over slow (0.06 to 0.2 inch per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)



Figure 11.—A pasture on a narrow ridge in an area of Hildebrecht silt loam, 5 to 9 percent slopes.

*Flooding:* None

*Depth to water table:* 24 to 30 inches

### **73346—Hildebrecht silt loam, 5 to 9 percent slopes, eroded**

#### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Shoulders and backslopes

*Parent material:* Loess over loamy residuum derived from dolostone

#### **Composition**

Hildebrecht and similar soils—90 percent

Minor components—10 percent

- Wrengart
- Alred

#### **Typical Profile**

Ap—0 to 6 inches; silt loam

Bt—6 to 31 inches; silty clay loam

2Btx—31 to 52 inches; gravelly silt loam

3Bt—52 to 80 inches; clay

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour) over slow (0.06 to 0.2 inch per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* 24 to 30 inches

### **74644—Deible silt loam, 1 to 3 percent slopes**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* High stream terraces

*Parent material:* Loess over alluvium

#### **Composition**

Deible and similar soils—90 percent

Minor components—10 percent

- Higdon
- Moniteau

#### **Typical Profile**

Ap—0 to 7 inches; silt loam

E—7 to 16 inches; silt loam

Btg1—16 to 40 inches; silty clay loam

2Btg2—40 to 65 inches; clay loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Very slow (less than 0.06 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* High (6 to 9 percent)

*Flooding:* None

*Depth to water table:* 0 to 12 inches

### **74646—Cornwall silt loam, 3 to 8 percent slopes**

#### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Footslopes

*Parent material:* Loess over valley fill materials

#### **Composition**

Cornwall and similar soils—90 percent

Minor components—10 percent

- Marquand
- Higdon
- Tilk

#### **Typical Profile**

Ap—0 to 5 inches; silt loam

Bt—5 to 17 inches; silty clay loam

2Btx—17 to 39 inches; silt loam

3Bt—39 to 60 inches; very gravelly silty clay loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* 18 to 36 inches

### **74648—Aslinger silt loam, 3 to 8 percent slopes**

#### **Setting**

*Landform:* Hillslopes

*Position on the landform:* Footslopes

*Parent material:* Loamy colluvium over loamy and clayey alluvium

### Composition

Aslinger and similar soils—85 percent  
 Minor components—15 percent

- Cornwall
- Clarksville

### Typical Profile

Ap—0 to 4 inches; silt loam  
 AB—4 to 8 inches; silt loam  
 Bt—8 to 21 inches; silt loam  
 2Btx—21 to 29 inches; very gravelly silt loam  
 3Bt1—29 to 55 inches; very gravelly clay loam  
 4Bt2—55 to 70 inches; extremely cobbly clay

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Moderately well drained  
*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* 18 to 30 inches

## 74649—Aslinger-Waben complex, 3 to 15 percent slopes

### Setting

*Landform:* Hillslopes  
*Position on the landform:* Footslopes  
*Parent material:* Aslinger—loamy colluvium over loamy and clayey alluvium; Waben—loamy alluvium and/or loamy colluvium

### Composition

Aslinger and similar soils—70 percent  
 Waben—20 percent  
 Minor components—10 percent

- Marquand
- Clarksville

### Typical Profile

#### Aslinger

Ap—0 to 3 inches; silt loam  
 AB—3 to 8 inches; silt loam  
 Bt—8 to 20 inches; silty clay loam  
 2Btx—20 to 39 inches; gravelly silt loam  
 3Bt1—39 to 52 inches; gravelly loam  
 4Bt2—52 to 80 inches; gravelly clay

#### Waben

Ap—0 to 6 inches; gravelly silt loam  
 Bt1—6 to 15 inches; very gravelly silt loam  
 2Bt2—15 to 54 inches; very gravelly loam  
 3Bt3—54 to 80 inches; very gravelly clay loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Aslinger—moderately well drained; Waben—well drained  
*Permeability:* Aslinger—moderately slow (0.2 to 0.6 inch per hour); Waben—moderately rapid (2 to 6 inches per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* Aslinger—18 to 30 inches; Waben—more than 6 feet

## 74679—Higdon silt loam, 0 to 3 percent slopes, rarely flooded

### Setting

*Landform:* River valleys  
*Position on the landform:* Low stream terraces  
*Parent material:* Silty alluvium

### Composition

Higdon and similar soils—85 percent  
 Minor components—15 percent

- Moniteau
- Bearthicket
- Deible
- Secesh

### Typical Profile

Ap—0 to 7 inches; silt loam  
 E—7 to 13 inches; silt loam  
 Bt1—13 to 43 inches; silt loam  
 2Bt2—43 to 80 inches; silty clay loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Somewhat poorly drained  
*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)  
*Available water capacity:* High (9 to 12 inches)  
*Shrink-swell potential:* Moderate (3 to 6 percent)  
*Flooding:* Rare (1 to 5 percent chance in any year)  
*Depth to water table:* 18 to 20 inches

## 74680—Moniteau silt loam, 0 to 3 percent slopes, rarely flooded

### Setting

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Silty alluvium

### Composition

Moniteau—85 percent

Minor components—15 percent

- Secesh
- Bearthicket
- Higdon
- Deible

### Typical Profile

Ap—0 to 6 inches; silt loam

Eg—6 to 15 inches; silt loam

Btg1—15 to 52 inches; silty clay loam

Btg2—52 to 78 inches; silt loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* Rare (1 to 5 percent chance in any year)

*Depth to water table:* 0 to 12 inches

## 74685—Auxvasse silt loam, 2 to 5 percent slopes

### Setting

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Fine-silty loess over clayey residuum derived from dolostone

### Composition

Auxvasse—90 percent

Minor components—10 percent

- Wrengart
- Winfield

### Typical Profile

Ap—0 to 6 inches; silt loam

AB—6 to 17 inches; silt loam

2Bt—17 to 51 inches; silty clay loam

2Btg—51 to 80 inches; silt loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Somewhat poorly drained

*Permeability:* Very slow (less than 0.06 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* High (6 to 9 percent)

*Flooding:* None

*Depth to water table:* 12 to 24 inches

## 75379—Kaintuck loam, 0 to 3 percent slopes, frequently flooded

### Setting

*Landform:* River valleys

*Position on the landform:* Low flood plains

*Parent material:* Loamy alluvium over sandy alluvium

### Composition

Kaintuck and similar soils—85 percent

Minor components—15 percent

- Elsay
- Relfe
- Haymond

### Typical Profile

Ap—0 to 9 inches; loam

C1—9 to 36 inches; fine sandy loam

C2—36 to 80 inches; loamy fine sand

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderately rapid (2 to 6 inches per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Frequent (more than a 50 percent chance in any year)

*Depth to water table:* More than 6 feet

## 75381—Bearthicket silt loam, 0 to 3 percent slopes, rarely flooded

### Setting

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Silty alluvium

### Composition

Bearthicket and similar soils—85 percent

Minor components—15 percent

- Secesh
- Deible
- Marquand
- Higdon

### **Typical Profile**

Ap—0 to 6 inches; silt loam  
 AB—6 to 19 inches; silt loam  
 Bt—19 to 45 inches; silt loam  
 2BC—45 to 64 inches; loam  
 2C—64 to 80 inches; coarse sandy loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Very high (more than 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* Rare (1 to 5 percent chance in any year)  
*Depth to water table:* More than 6 feet

## **75395—Jamesfin silt loam, 0 to 3 percent slopes, occasionally flooded**

### **Setting (fig. 12)**

*Landform:* River valleys  
*Position on the landform:* High flood plains  
*Parent material:* Silty alluvium

### **Composition**

Jamesfin and similar soils—90 percent  
 Minor components—10 percent

- Higdon
- Gladden
- Wideman

### **Typical Profile**

Ap—0 to 6 inches; silt loam  
 A—6 to 15 inches; silt loam  
 Bw—15 to 53 inches; silt loam  
 BC—53 to 62 inches; loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Very high (more than 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* 48 to 72 inches

## **75408—Secesh silt loam, 0 to 3 percent slopes, rarely flooded**

### **Setting**

*Landform:* River valleys  
*Position on the landform:* Low stream terraces  
*Parent material:* About 2 feet of loamy alluvium over gravelly residuum or alluvium

### **Composition**

Secesh and similar soils—90 percent  
 Minor components—10 percent

- Relfe
- Bearthicket
- Tilk
- Gladden

### **Typical Profile**

Ap—0 to 4 inches; silt loam  
 AB—4 to 10 inches; silt loam  
 Bt1—10 to 26 inches; gravelly silt loam  
 2Bt2—26 to 36 inches; gravelly loam  
 2C—36 to 80 inches; very gravelly coarse sandy loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Moderate (6 to 9 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* Rare (1 to 5 percent chance in any year)  
*Depth to water table:* More than 6 feet

## **75409—Relfe sandy loam, 0 to 3 percent slopes, occasionally flooded**

### **Setting**

*Landform:* River valleys  
*Position on the landform:* High flood plains  
*Parent material:* Gravelly alluvium

### **Composition**

Relfe and similar soils—90 percent  
 Minor components—10 percent

- Gladden
- Wideman



Figure 12.—Fescue hayland in an area of Jamesfin silt loam, 0 to 3 percent slopes, occasionally flooded.

**Typical Profile**

Ap—0 to 7 inches; sandy loam  
 C—7 to 64 inches; extremely gravelly sand

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Excessively drained  
*Permeability:* Rapid (6 to 20 inches per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* Occasional (5 to 50 percent chance in any year)  
*Depth to water table:* More than 6 feet

**75411—Tilk very gravelly sandy loam, 0 to 3 percent slopes, rarely flooded**

**Setting**

*Landform:* River valleys  
*Position on the landform:* Low stream terraces

*Parent material:* Loamy and sandy alluvium with a high content of rock fragments

**Composition**

Tilk and similar soils—85 percent  
 Minor components—15 percent

- Gladden
- Wideman
- Secesh

**Typical Profile**

A—0 to 8 inches; very gravelly sandy loam  
 E—8 to 16 inches; extremely gravelly loam  
 Bt—16 to 47 inches; very cobbly loam  
 2C—47 to 70 inches; extremely gravelly coarse sandy loam

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderately rapid (2 to 6 inches per hour)  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Rare (1 to 5 percent chance in any year)

*Depth to water table:* More than 6 feet

### **75416—Gladden loam, 0 to 3 percent slopes, occasionally flooded**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Loamy alluvium

#### **Composition**

Gladden and similar soils—85 percent

Minor components—15 percent

- Relfe
- Jamesfin
- Secesh
- Wideman

#### **Typical Profile**

Ap—0 to 5 inches; loam

A—5 to 26 inches; loam

Bw—26 to 58 inches; loam

2C—58 to 77 inches; coarse sand

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate (0.6 to 2 inches per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* More than 6 feet

### **75417—Relfe-Sandbur complex, 0 to 3 percent slopes, frequently flooded**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* Low flood plains

*Parent material:* Relfe—sandy and gravelly alluvium;  
Sandbur—loamy alluvium

#### **Composition**

Relfe and similar soils—40 percent

Sandbur and similar soils—30 percent

Minor components—30 percent

- Sand and gravel bars

- Tilk
- Kaintuck
- Haymond
- Wideman
- Wakeland

#### **Typical Profile**

##### **Relfe**

Ap—0 to 6 inches; very gravelly sandy loam

C—6 to 80 inches; stratified extremely cobbly coarse sand to very gravelly loamy sand

##### **Sandbur**

Ap—0 to 8 inches; fine sandy loam

C—8 to 80 inches; stratified fine sand to silt loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Relfe—excessively drained;

Sandbur—somewhat excessively drained

*Permeability:* Rapid (6 to 20 inches per hour)

*Available water capacity:* Relfe—very low (0 to 3 inches); Sandbur—moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Frequent (more than a 50 percent chance in any year)

*Depth to water table:* More than 6 feet

### **75426—Gabriel silt loam, 0 to 3 percent slopes, rarely flooded**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Fine-silty alluvium

#### **Composition**

Gabriel and similar soils—90 percent

Minor components—10 percent

- Moniteau
- Higdon

#### **Typical Profile**

A—0 to 14 inches; silt loam

Btg1—14 to 46 inches; silty clay loam

Btg2—46 to 81 inches; silty clay loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)  
*Flooding:* Rare (1 to 5 percent chance in any year)  
*Depth to water table:* 12 to 30 inches

## **75428—Tilk, occasionally flooded-Cornwall-Poynor complex, 3 to 15 percent slopes**

### **Setting**

*Landform:* Tilk—river valleys; Cornwall—hillslopes; Poynor—hillslopes

*Position on the landform:* Tilk—high flood plains; Cornwall—footslopes; Poynor—footslopes

*Parent material:* Tilk—loamy and sandy alluvium with a high content of rock fragments; Cornwall—loess over valley fill materials; Poynor—gravelly colluvium derived from cherty dolostone over clayey residuum derived from dolostone

### **Composition**

Tilk and similar soils—35 percent  
 Cornwall and similar soils—30 percent  
 Poynor and similar soils—15 percent  
 Minor components—20 percent

- Clarksville
- Gladden
- Secesh

### **Typical Profile**

#### **Tilk**

A—0 to 4 inches; very gravelly loam  
 BA—4 to 10 inches; very cobbly sandy loam  
 Bt—10 to 35 inches; very gravelly sandy loam  
 2BC—35 to 65 inches; very gravelly coarse sandy loam

#### **Cornwall**

A—0 to 8 inches; silt loam  
 Bt—8 to 35 inches; silty clay loam  
 2Btx—35 to 62 inches; very gravelly silty clay loam  
 3Bt—62 to 80 inches; silty clay loam

#### **Poynor**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 4 inches; gravelly loam  
 E—4 to 9 inches; very cobbly loam  
 Bt1—9 to 26 inches; very cobbly clay loam  
 2Bt2—26 to 80 inches; gravelly clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Tilk—well drained; Cornwall—moderately well drained; Poynor—well drained

*Permeability:* Tilk—moderately rapid (2 to 6 inches per hour); Cornwall—moderately slow (0.2 to 0.6 inch per hour); Poynor—moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Tilk—low (3 to 6 inches); Cornwall—high (9 to 12 inches); Poynor—low (3 to 6 inches)

*Shrink-swell potential:* Tilk—low (0 to 3 percent); Cornwall—low (0 to 3 percent); Poynor—moderate (3 to 6 percent)

*Flooding:* Tilk—occasional (5 to 50 percent chance in any year); Cornwall—none; Poynor—none

*Depth to water table:* Tilk—more than 6 feet; Cornwall—17 to 32 inches; Poynor—more than 6 feet

## **75429—Tilk-Secesh complex, 0 to 3 percent slopes, occasionally flooded**

### **Setting**

*Landform:* River valleys

*Position on the landform:* Tilk—high flood plains; Secesh—low stream terraces

*Parent material:* Tilk—loamy and sandy alluvium with a high content of rock fragments; Secesh—about 2 feet of loamy alluvium over gravelly residuum or alluvium

### **Composition**

Tilk and similar soils—45 percent  
 Secesh and similar soils—35 percent  
 Minor components—20 percent

- Haymond
- Kaintuck
- Wideman

### **Typical Profile**

#### **Tilk**

Ap—0 to 8 inches; gravelly loam  
 Bt1—8 to 14 inches; very gravelly loam  
 2Bt2—14 to 37 inches; very gravelly sandy loam  
 2C—37 to 80 inches; gravelly loam

#### **Secesh**

Ap—0 to 10 inches; gravelly silt loam  
 Bt1—10 to 16 inches; silt loam  
 2Bt2—16 to 36 inches; gravelly loam  
 3C—36 to 80 inches; very gravelly sandy loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained

*Permeability:* Tilk—moderately rapid (2 to 6 inches per hour); Secesh—moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Tilk—low (3 to 6 inches); Secesh—moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Tilk—occasional (5 to 50 percent chance in any year); Secesh—rare (1 to 5 percent chance in any year)

*Depth to water table:* More than 6 feet

### **75430—Wideman fine sandy loam, 0 to 3 percent slopes, occasionally flooded**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Sandy alluvium

#### **Composition**

Wideman and similar soils—90 percent

Minor components—10 percent

- Haymond
- Jamesfin
- Kaintuck
- Relfe

#### **Typical Profile**

A—0 to 5 inches; fine sandy loam

C1—5 to 13 inches; fine sandy loam

C2—13 to 21 inches; loam

C3—21 to 49 inches; sand

C4—49 to 71 inches; gravelly sandy loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Excessively drained

*Permeability:* Moderately rapid (2 to 6 inches per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* More than 6 feet

### **75451—Gladden silt loam, 0 to 3 percent slopes, occasionally flooded**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Loamy alluvium

#### **Composition**

Gladden and similar soils—85 percent

Minor components—15 percent

- Wideman
- Relfe
- Haymond

#### **Typical Profile**

A—0 to 5 inches; silt loam

Bw—5 to 53 inches; gravelly loam

C—53 to 80 inches; very gravelly sandy loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* More than 6 feet

### **75467—Wilbur silt loam, 0 to 3 percent slopes, frequently flooded**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* Low flood plains

*Parent material:* Silty alluvium

#### **Composition**

Wilbur and similar soils—90 percent

Minor components—10 percent

- Haymond
- Wakeland

#### **Typical Profile**

A—0 to 9 inches; silt loam

C—9 to 60 inches; silt loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Very high (more than 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Frequent (more than a 50 percent chance in any year)

*Depth to water table:* 18 to 24 inches

### **75468—Elsah silt loam, 0 to 3 percent slopes, occasionally flooded**

#### **Setting**

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Loamy alluvium

#### **Composition**

Elsah and similar soils—90 percent

Minor components—10 percent

- Relfe
- Haymond

#### **Typical Profile**

A—0 to 10 inches; silt loam

C1—10 to 20 inches; gravelly silt loam

2C2—20 to 60 inches; very gravelly silt loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour) over moderately rapid (2 to 6 inches per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* More than 6 feet

### **77000—Killarney-Frenchmill complex, 15 to 45 percent slopes, rubbly**

#### **Setting**

*Landform:* Mountains

*Position on the landform:* Backslopes and footslopes

*Parent material:* Killarney—gravelly colluvium derived from loess and rhyolite or granite; Frenchmill—colluvium derived from rhyolite or granite

#### **Composition**

Killarney and similar soils—45 percent

Frenchmill and similar soils—40 percent

Minor components—15 percent

- Delassus

- Irondale
- Taumsauk
- Rock outcrop

#### **Typical Profile**

##### **Killarney**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 5 inches; very cobbly silt loam

E—5 to 16 inches; very cobbly silt loam

Bt—16 to 32 inches; very gravelly silt loam

2Btx—32 to 48 inches; very gravelly silt loam

3Bt—48 to 80 inches; very gravelly loam

##### **Frenchmill**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 6 inches; very cobbly silt loam

E—6 to 19 inches; gravelly silt loam

Bt1—19 to 27 inches; very gravelly silt loam

2Bt2—27 to 58 inches; very gravelly loam

3Bt3—58 to 80 inches; cobbly clay loam

#### **Soil Properties and Qualities**

*Depth to bedrock:* Killarney—very deep (more than 60 inches); Frenchmill—very deep (more than 60 inches)

*Drainage class:* Killarney—moderately well drained; Frenchmill—well drained

*Permeability:* Killarney—moderate (0.6 inch to 2 inches per hour) over very slow (less than 0.06 inch per hour); Frenchmill—moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Killarney—low (3 to 6 inches); Frenchmill—moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* Killarney—24 to 36 inches; Frenchmill—More than 6 feet

### **77002—Delassus silt loam, 3 to 8 percent slopes**

#### **Setting**

*Landform:* Mountains

*Position on the landform:* Summits and footslopes

*Parent material:* Loess over loamy residuum or colluvium derived from granite or rhyolite

#### **Composition**

Delassus and similar soils—90 percent

Minor components—10 percent

- Killarney
- Trackler
- Frenchmill

**Typical Profile**

A—0 to 3 inches; silt loam  
 E—3 to 7 inches; silt loam  
 Bt—7 to 31 inches; silty clay loam  
 2Btx—31 to 61 inches; loam  
 2R—61 inches; bedrock

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Moderately well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour) above the fragipan and very slow (0.0015 to 0.06 inch per hour) in the fragipan  
*Available water capacity:* Low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* 22 to 30 inches

**77005—Hassler-Syenite complex, 8 to 25 percent slopes, bouldery****Setting**

*Landform:* Mountains  
*Position on the landform:* Shoulders and backslopes  
*Parent material:* Hassler—loamy colluvium and residuum derived from acid igneous rocks, primarily granite; Syenite—loess and the underlying loamy residuum from granite

**Composition**

Hassler and similar soils—43 percent  
 Syenite and similar soils—33 percent  
 Minor components—24 percent

- Soils similar to Irondale
- Killarney
- Taumsauk
- Rock outcrop

**Typical Profile****Hassler**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 6 inches; silt loam  
 E—6 to 11 inches; silt loam  
 Bt1—11 to 20 inches; cobbly loam  
 2Bt2—20 to 34 inches; very cobbly loam  
 3BC—34 to 42 inches; very stony coarse sandy loam  
 3R—42 inches; bedrock

**Syenite**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 4 inches; silt loam  
 E—4 to 9 inches; silt loam

Bt1—9 to 19 inches; gravelly loam  
 2Bt2—19 to 29 inches; loam  
 2R—29 inches; bedrock

**Soil Properties and Qualities**

*Depth to bedrock:* Hassler—deep (40 to 60 inches); Syenite—moderately deep (20 to 40 inches)  
*Drainage class:* Hassler—moderately well drained; Syenite—well drained  
*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)  
*Available water capacity:* Hassler—moderate (6 to 9 inches); Syenite—low (3 to 6 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* Hassler—22 to 30 inches; Syenite—more than 6 feet

**77008—Hassler silt loam, 3 to 15 percent slopes, stony****Setting**

*Landform:* Mountains  
*Position on the landform:* Summits and shoulders  
*Parent material:* Loamy colluvium and residuum derived from acid igneous rocks, primarily granite

**Composition**

Hassler and similar soils—90 percent  
 Minor components—10 percent

- Killarney
- Syenite
- Rock outcrop

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
 A—1 to 3 inches; silt loam  
 E—3 to 9 inches; silt loam  
 Bt1—9 to 24 inches; loam  
 2Bt2—24 to 31 inches; gravelly loam  
 3BC—31 to 48 inches; bouldery coarse sandy loam  
 3R—48 inches; bedrock

**Soil Properties and Qualities**

*Depth to bedrock:* Deep (40 to 60 inches)  
*Drainage class:* Moderately well drained  
*Permeability:* Moderately slow (0.2 to 0.6 inch per hour)  
*Available water capacity:* Moderate (6 to 9 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* 22 to 30 inches

## 80000—Calhoun silt loam, 0 to 1 percent slopes

### Setting

*Landform:* Lowlands

*Position on the landform:* High stream terraces

*Parent material:* Silty alluvium or loess

### Composition

Calhoun and similar soils—85 percent

Minor components—15 percent

- Forestdale
- Dubbs
- Oaklimeter

### Typical Profile

A—0 to 9 inches; silt loam

E—9 to 24 inches; silt loam

Btg—24 to 80 inches; silt loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Slow (0.06 to 0.2 inch per hour)

*Available water capacity:* Very high (more than 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 0 to 24 inches

## 80001—Oaklimeter silt loam, 0 to 1 percent slopes

### Setting

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Silty alluvium

### Composition

Oaklimeter and similar soils—85 percent

Minor components—15 percent

- Amagon
- Calhoun
- Miscellaneous wet areas

### Typical Profile

Ap—0 to 14 inches; silt loam

Bw—14 to 34 inches; silt loam

BE—34 to 57 inches; silt loam

Btb—57 to 71 inches; silt loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Very high (more than 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* 18 to 30 inches

## 82000—Dubbs silt loam, 0 to 1 percent slopes

### Setting

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Loamy alluvium

### Composition

Dubbs and similar soils—85 percent

Minor components—15 percent

- Calhoun
- Oaklimeter
- Wideman

### Typical Profile

A—0 to 9 inches; silt loam

Bt—9 to 58 inches; silt loam

BC—58 to 80 inches; loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Very high (more than 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* More than 6 feet

## 82001—Amagon silt loam, 0 to 1 percent slopes, frequently ponded

### Setting

*Landform:* Lowlands

*Position on the landform:* High stream terraces

*Parent material:* Loamy alluvium

**Composition**

Amagon and similar soils—85 percent

Minor components—15 percent

- Calhoun
- Forestdale
- Dubbs
- Oaklimeter

**Typical Profile**

A—0 to 5 inches; silt loam

Eg—5 to 20 inches; silt loam

Btg1—20 to 53 inches; silty clay loam

Btg2—53 to 80 inches; silt loam

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Slow (0.06 to 0.2 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 0 to 12 inches, frequently ponded

## **82002—Forestdale silty clay loam, 0 to 1 percent slopes, frequently ponded**

**Setting**

*Landform:* Lowlands

*Position on the landform:* Depressions

*Parent material:* Clayey and silty alluvium

**Composition**

Forestdale and similar soils—90 percent

Minor components—10 percent

- Calhoun
- Amagon

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 9 inches; silty clay loam

Btg1—9 to 51 inches; silty clay

Btg2—51 to 80 inches; silty clay

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Very slow (less than 0.06 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* High (6 to 9 percent)

*Flooding:* None

*Depth to water table:* 0 to 10 inches

## **82005—Malden loamy fine sand, 0 to 3 percent slopes**

**Setting**

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Sandy alluvium

**Composition**

Malden and similar soils—85 percent

Minor components—15 percent

- Coarse-loamy, somewhat poorly drained soils
- Bosket

**Typical Profile**

Ap—0 to 6 inches; loamy fine sand

Bw—6 to 37 inches; loamy sand

C—37 to 80 inches; sand

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Excessively drained

*Permeability:* Rapid (6 to 20 inches per hour)

*Available water capacity:* Low (3 to 6 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* More than 6 feet

## **82006—Bosket fine sandy loam, 1 to 5 percent slopes**

**Setting**

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Loamy alluvium

**Composition**

Bosket and similar soils—90 percent

Minor components—10 percent

- Malden
- Coarse-loamy, somewhat poorly drained soils

**Typical Profile**

Ap—0 to 9 inches; fine sandy loam

BA—9 to 20 inches; fine sandy loam

Bt—20 to 45 inches; sandy clay loam

C—45 to 80 inches; sand

**Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* Moderate (6 to 9 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* None

*Depth to water table:* More than 6 feet

## **82007—Bosket loam, 0 to 3 percent slopes, occasionally flooded**

### **Setting**

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Loamy alluvium

### **Composition**

Bosket and similar soils—90 percent

Minor components—10 percent

- Malden
- Coarse-loamy, somewhat poorly drained soils

### **Typical Profile**

Ap—0 to 7 inches; loam

BA—7 to 16 inches; loam

Bt—16 to 37 inches; loam

2BC—37 to 67 inches; sandy loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate (0.6 inch to 2 inches per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Low (0 to 3 percent)

*Flooding:* Occasional (5 to 50 percent chance in any year)

*Depth to water table:* More than 6 feet

## **82009—Forestdale silty clay loam, 0 to 1 percent slopes**

### **Setting**

*Landform:* Lowlands

*Position on the landform:* Depressions

*Parent material:* Clayey and silty alluvium

### **Composition**

Forestdale and similar soils—90 percent

Minor components—10 percent

- Crowley taxadjunct
- Amagon

### **Typical Profile**

Ap—0 to 4 inches; silty clay loam

Btg—4 to 40 inches; silty clay

BCg—40 to 80 inches; silty clay loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Very slow (less than 0.06 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* High (6 to 9 percent)

*Flooding:* None

*Depth to water table:* 0 to 18 inches

## **82010—Amagon silt loam, 0 to 1 percent slopes**

### **Setting (fig. 13)**

*Landform:* Lowlands

*Position on the landform:* High stream terraces

*Parent material:* Loamy alluvium

### **Composition**

Amagon and similar soils—85 percent

Minor components—15 percent

- Calhoun
- Forestdale
- Dubbs
- Bosket

### **Typical Profile**

Ap—0 to 12 inches; silt loam

Eg—12 to 28 inches; silt loam

Btg—28 to 70 inches; silty clay loam

2BC—70 to 80 inches; fine sandy loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)

*Drainage class:* Poorly drained

*Permeability:* Slow (0.06 to 0.2 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* Moderate (3 to 6 percent)

*Flooding:* None

*Depth to water table:* 0 to 24 inches

## **82011—Crowley silt loam, 0 to 1 percent slopes**

### **Setting**

*Landform:* Lowlands

*Position on the landform:* High stream terraces

*Parent material:* Silty alluvium



Figure 13.—Corn and winter wheat growing in an area of Amagon silt loam, 0 to 1 percent slopes. Irrigation is used to increase the crop yields on this field.

### **Composition**

- Crowley—90 percent  
 Minor components—10 percent
- Forestdale
  - Amagon
  - Calhoun

### **Typical Profile**

- A—0 to 9 inches; silt loam  
 Eg—9 to 16 inches; silt loam  
 Btg—16 to 39 inches; silty clay loam  
 2BCg—39 to 56 inches; silt loam  
 3Cg—56 to 80 inches; loamy sand

### **Soil Properties and Qualities**

- Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Somewhat poorly drained  
*Permeability:* Very slow (less than 0.06 inch per hour)

*Available water capacity:* High (9 to 12 inches)

*Shrink-swell potential:* High (6 to 9 percent)

*Flooding:* None

*Depth to water table:* 6 to 18 inches

### **86000—Dubbs silt loam, 0 to 3 percent slopes, occasionally flooded**

#### **Setting**

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Loamy alluvium

#### **Composition**

- Dubbs and similar soils—85 percent  
 Minor components—15 percent

- Calhoun
- Bosket
- Falaya

### Typical Profile

Ap—0 to 5 inches; silt loam  
 Bt—5 to 47 inches; silt loam  
 2C—47 to 80 inches; sandy loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* High (9 to 12 inches)  
*Shrink-swell potential:* Moderate (3 to 6 percent)  
*Flooding:* Occasional (5 to 50 percent chance in any year)  
*Depth to water table:* More than 6 feet

## 86001—Calhoun silt loam, 0 to 1 percent slopes, occasionally flooded

### Setting

*Landform:* Lowland  
*Position on the landform:* High flood plains  
*Parent material:* Silty alluvium or loess

### Composition

Calhoun and similar soils—85 percent  
 Minor components—15 percent

- Forestdale
- Dubbs
- Oaklimeter

### Typical Profile

Ap—0 to 6 inches; silt loam  
 Eg—6 to 25 inches; silt loam  
 B/E—25 to 50 inches; silt loam  
 Btg—50 to 80 inches; silt loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Poorly drained  
*Permeability:* Slow (0.06 to 0.2 inch per hour)  
*Available water capacity:* Very high (more than 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* Occasional (5 to 50 percent chance in any year)  
*Depth to water table:* 0 to 24 inches

## 86002—Falaya silt loam, 0 to 1 percent slopes, occasionally flooded

### Setting

*Landform:* Lowlands  
*Position on the landform:* High flood plains  
*Parent material:* Silty alluvium from loess

### Composition

Falaya and similar soils—85 percent  
 Minor components—15 percent

- Calhoun
- Amagon
- Dubbs

### Typical Profile

Ap—0 to 10 inches; silt loam  
 Bg—10 to 34 inches; silt loam  
 Bw—34 to 69 inches; silt loam  
 2Bg—69 to 80 inches; silty clay loam

### Soil Properties and Qualities

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Somewhat poorly drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* Very high (more than 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* Occasional (5 to 50 percent chance in any year)  
*Depth to water table:* 12 to 24 inches

## 86003—Amagon silt loam, 0 to 1 percent slopes, occasionally flooded

### Setting

*Landform:* Lowlands  
*Position on the landform:* High flood plains  
*Parent material:* Loamy alluvium

### Composition

Amagon and similar soils—85 percent  
 Minor components—15 percent

- Calhoun
- Forestdale
- Dubbs
- Bosket

### Typical Profile

Ap—0 to 4 inches; silt loam

E—4 to 15 inches; silt loam  
 Btg—15 to 71 inches; silty clay loam  
 2BCg—71 to 80 inches; silt loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Poorly drained  
*Permeability:* Slow (0.06 to 0.2 inch per hour)  
*Available water capacity:* High (9 to 12 inches)  
*Shrink-swell potential:* Moderate (3 to 6 percent)  
*Flooding:* Occasional (5 to 50 percent chance in any year)  
*Depth to water table:* 12 to 24 inches

## **86004—Forestdale silty clay loam, 0 to 1 percent slopes, occasionally flooded**

### **Setting**

*Landform:* Lowlands  
*Position on the landform:* Depressions  
*Parent material:* Clayey and silty alluvium

### **Composition**

Forestdale and similar soils—90 percent  
 Minor components—10 percent

- Amagon
- Malden
- Dubbs

### **Typical Profile**

A—0 to 4 inches; silty clay loam  
 Btg1—4 to 55 inches; silty clay  
 Btg2—55 to 80 inches; clay

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Poorly drained  
*Permeability:* Very slow (less than 0.06 inch per hour)  
*Available water capacity:* High (9 to 12 inches)  
*Shrink-swell potential:* High (6 to 9 percent)  
*Flooding:* Occasional (5 to 50 percent chance in any year)  
*Depth to water table:* 0 to 18 inches

## **90000—Memphis silt loam, 3 to 8 percent slopes, eroded**

### **Setting**

*Landform:* Ridges

*Position on the landform:* Summits and shoulders  
*Parent material:* Fine-silty loess

### **Composition**

Memphis and similar soils—90 percent  
 Minor components—10 percent

- Fine-silty soils that have a fragipan

### **Typical Profile**

Ap—0 to 4 inches; silt loam  
 Bt1—4 to 9 inches; silt loam  
 Bt2—9 to 50 inches; silt loam  
 C—50 to 65 inches; silt loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* High (9 to 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* More than 6 feet

## **90001—Memphis silt loam, 8 to 15 percent slopes, severely eroded**

### **Setting**

*Landform:* Hillslopes  
*Position on the landform:* Shoulders and backslopes  
*Parent material:* Fine-silty loess

### **Composition**

Memphis and similar soils—90 percent  
 Minor components—10 percent

- Fine-silty soils that have a fragipan
- Fine-silty soils that have a very gravelly substratum

### **Typical Profile**

Ap—0 to 2 inches; silt loam  
 Bt—2 to 64 inches; silty clay loam  
 C—64 to 78 inches; silt loam

### **Soil Properties and Qualities**

*Depth to bedrock:* Very deep (more than 60 inches)  
*Drainage class:* Well drained  
*Permeability:* Moderate (0.6 inch to 2 inches per hour)  
*Available water capacity:* High (9 to 12 inches)  
*Shrink-swell potential:* Low (0 to 3 percent)  
*Flooding:* None  
*Depth to water table:* More than 6 feet

**99001—Water*****Component Description***

- This map unit consists of naturally occurring basins of surface water, such as perennial rivers and creeks. It also includes manmade lakes and ponds that are larger than 5 acres.

**99003—Miscellaneous water*****Component Description***

- This map unit consists of community sewage lagoons.

**99007—Dam*****Component Description***

- This map unit consists of earthen structures which hold larger bodies of water.

**99015—Udorthents-Water complex*****Component Description***

- This map unit consists of levees and the associated borrow areas. The levees are used for flood control along the Castor River in the south part of the county. They were constructed from material excavated a short distance from the base of the levee. The deeper excavated areas generally contain water.



# 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 for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for waste management; for water management; and for 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. The survey can help planners to maintain or create a land use pattern that is in harmony with nature.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

## Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various land 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 or not limited by all of the soil features that affect a specified use. Terms for the limitation classes are *not limited*, *slightly limited*, *moderately limited*, *limited*, and *very limited*. In certain tables the soils are rated as *improbable*, *possible*, or *probable* sources of specific materials used for construction purposes.

## Numerical Ratings

Numerical ratings in the tables indicate the severity of individual limitations. They also indicate the overall degree to which a soil is limited or not limited for a specific use. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

In tables that use limitation class terms, such as *very limited* or *limited*, the limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each map unit component. The overall limitation rating for the component is based on the most severe limitation.

## Crops and Pasture

Tom Johnson, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified. Prime farmland is described, the estimated yields of the main crops and pasture plants are listed, and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

About 30 percent of the survey area is used for crops and pasture. Of this total, less than 17 percent

is used for cultivated crops, mainly corn and soybeans (fig. 14). The rest is used for pasture and hay (fig. 15).

The potential for increased production is fair. About 71,500 acres in the area qualify as prime farmland. An additional 66,480 acres is suited to crop production, including sloping areas where adequate protection from erosion is needed. About 41,822 acres is best suited to pasture.

Water erosion is a major concern on slopes of more than about 2 percent. Loss of the surface layer reduces the available water capacity and results in poor tilth. Erosion is especially harmful to soils that have a root-restricting layer within a depth of about 40 inches of the surface, such as Captina and Yelton soils. It is less harmful, though still a concern, on soils that have no root-restricting characteristics, such as Cornwall, Crider, Memphis, Winfield, and Wrengart soils. Applications of fertilizer help to offset the lower fertility caused by erosion, but overcoming much of the damage is difficult or impractical. Controlling erosion minimizes the pollution of streams by sedimentation.



Figure 14.—Corn growing in an area of Wrengart silt loam, 2 to 5 percent slopes. Conservation tillage leaves residue on the surface, which helps reduce erosion.



**Figure 15.—Fescue hayland in an area of Captina silt loam, 3 to 8 percent slopes, eroded.**

Thus water quality is improved for farm and city uses, for wildlife habitat, and for recreational uses.

Erosion-control practices provide a protective cover of crop residues or vegetation. Properly managed permanent pasture or hay can provide 80 percent or more of the protection needed. Crop rotations that alternate cultivated crops and meadows help to control erosion. Applying a system of conservation tillage that leaves a protective cover of crop residue on the surface throughout the year can reduce sheet erosion by one-half or more, as compared to fall plowing with a moldboard plow.

No-till systems that leave nearly all of the crop residue on the surface reduce the hazard of erosion. Contour farming and contour strip cropping can be used on fields that have smooth, uniform slopes. Terraces that divert surface runoff to safe outlets can be used in some fields.

Parallel terraces can be farmed more easily than contour terraces. Deep and very deep soils that have no root-restricting characteristics, such as Crider and

Memphis soils, are better suited to terraces than soils that have root-restricting layers near the surface, such as Captina or Hildebrecht soils. On such soils, the possible losses caused by exposing small infertile areas should be considered when the depth of cut and the design of the terrace system are determined.

Soil tilth is an important factor affecting the germination of seeds and the infiltration of water into the soil. Soils that have good tilth are granular and porous. In the uplands, most soils used for cultivated crops have a surface layer of silt loam that is low in content of organic matter. Examples are Crider and Captina soils. Generally, tilling these soils weakens the soil structure and increases the degree of soil compaction and the extent of surface crusting. Tilling when the soils are too wet can further increase the degree of compaction, even below the plow layer. Subsoiling and varying the depth of plowing minimize compaction and the formation of traffic pans. Regular additions of crop residue,

manure, and other organic material improve tilth and minimize surface crusting.

Most of the soils on the flood plains in the survey area have a surface layer of silt loam that is moderate in content of organic matter. These soils retain favorable tilth under normal tillage operations. They are susceptible to compaction beneath the tillage zone.

Stones and boulders are a common feature in many of the soils in the surface area. In some places, these soils cannot be tilled because they have too many stones and boulders. In other places, the stones and boulders can be removed.

Soil fertility is medium in most of the soils on the flood plains and is low in the soils on the uplands. Almost all of the soils on uplands have excessive levels of acidity in the upper part of the root zone. Applications of lime are needed to raise the pH level of these soils for the adequate growth of most crops. Most of the soils on flood plains are naturally acid, but the levels may or may not affect crop growth in a given year. On all soils, the amount of lime and fertilizer to be applied should be based on the results of soil tests, the needs of the crop, and the expected level of yield. The Cooperative Extension Service can help to determine the kind and amount of fertilizer to be applied. Soil samples can be organized using the soil survey to identify contrasting soil types.

Organic matter is an important source of nitrogen for crop growth. Also, it helps to maintain good tilth and the rate of water infiltration. The content of organic matter is low in most of the cultivated soils in the uplands and moderate in the soils on flood plains. Throughout the survey area, the soils have low levels of phosphorus and low or moderate levels of potassium, unless heavy applications of fertilizer have been applied.

Soils along the river bottoms generally flood at some time. Stream channels in gravelly soils generally overflow when they fill as a result of flooding. Soils on the next higher level flood occasionally. Flooding generally occurs between December and May and is of brief duration. Flash flooding as a result of intensive rainfall can occur on the upper reaches of stream bottoms at any time of the year. Flooding history should be considered for cropped areas.

In soils that have a high water table, a drainage system is needed to reduce wetness during spring. Additional drainage measures are needed in some areas of Amagon, Calhoun, Deible, Forestdale, Higdon, and Moniteau soils. Surface ditches or tile drains can be used if suitable outlets are available. On some areas, due to seepage of water into these soils, draining these soils is only partly effective. As a result,

these soils are best suited to pasture and wildlife habitat.

Areas of wet soils without a history of cropping may be considered wetland. Before altering any area that may be considered a wetland, the Natural Resources Conservation Service should be contacted in order to ensure compliance with existing laws.

## Prime Farmland

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

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

About 71,500 acres in the survey area, or nearly 18 percent of the total acreage, meets the soil requirements for prime farmland. Scattered areas of this land are throughout the county, but most are in the southern part, mainly in associations Calhoun-Falaya-Forestdale and Haymond-Wakeland-Moniteau, which are described under the heading "General Soil Map Units." Most prime farmland is used for cultivated crops. The main crops grown on this land are corn, soybeans, grain sorghum, and wheat.

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

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

Some soils that have a seasonal high water table and all soils that are frequently flooded during the growing season qualify as prime farmland only in areas where these limitations have been overcome by drainage measures or flood control (fig. 16). The need

for these measures is indicated after the map unit name below. Onsite evaluation is needed to determine whether or not these limitations have been overcome by corrective measures.

The soils identified as prime farmland in Bollinger County are:

- 60055 Winfield silt loam, 2 to 5 percent slopes
- 66000 Moniteau silt loam, 0 to 3 percent slopes, occasionally flooded (where drained)
- 66054 Wakeland silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
- 66055 Haymond silt loam, 0 to 3 percent slopes, occasionally flooded
- 73100 Wrengart silt loam, 2 to 5 percent slopes
- 74644 Deible silt loam, 1 to 3 percent slopes (where drained)
- 74679 Higdon silt loam, 0 to 3 percent slopes, rarely flooded
- 74680 Moniteau silt loam, 0 to 3 percent slopes, rarely flooded (where drained)
- 74685 Auxvasse silt loam, 2 to 5 percent slopes



Figure 16.—Winter wheat growing in an area of Amagon silt loam, 0 to 1 percent slopes. This soil is considered prime farmland in areas where it is drained.

- 75379 Kaintuck loam, 0 to 3 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
- 75381 Bearthicket silt loam, 0 to 3 percent slopes, rarely flooded
- 75395 Jamesfin silt loam, 0 to 3 percent slopes, occasionally flooded
- 75408 Secesh silt loam, 0 to 3 percent slopes, rarely flooded
- 75416 Gladden loam, 0 to 3 percent slopes, occasionally flooded
- 75426 Gabriel silt loam, 0 to 3 percent slopes, rarely flooded (where drained)
- 75430 Wideman fine sandy loam, 0 to 3 percent slopes, occasionally flooded
- 75451 Gladden silt loam, 0 to 3 percent slopes, occasionally flooded
- 75467 Wilbur silt loam, 0 to 3 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
- 75468 Elsayh silt loam, 0 to 3 percent slopes, occasionally flooded
- 80000 Calhoun silt loam, 0 to 1 percent slopes (where drained)
- 80001 Oaklimeter silt loam, 0 to 1 percent slopes
- 82000 Dubbs silt loam, 0 to 1 percent slopes
- 82001 Amagon silt loam, 0 to 1 percent slopes, frequently ponded (where drained)
- 82002 Forestdale silty clay loam, 0 to 1 percent slopes, frequently ponded (where drained)
- 82006 Bosket fine sandy loam, 1 to 5 percent slopes
- 82007 Bosket loam, 0 to 3 percent slopes, occasionally flooded
- 82009 Forestdale silty clay loam, 0 to 1 percent slopes (where drained)
- 82010 Amagon silt loam, 0 to 1 percent slopes (where drained)
- 82011 Crowley silt loam, 0 to 1 percent slopes (where drained)
- 86000 Dubbs silt loam, 0 to 3 percent slopes, occasionally flooded
- 86001 Calhoun silt loam, 0 to 1 percent slopes, occasionally flooded (where drained)
- 86002 Falaya silt loam, 0 to 1 percent slopes, occasionally flooded
- 86003 Amagon silt loam, 0 to 1 percent slopes, occasionally flooded (where drained)
- 86004 Forestdale silty clay loam, 0 to 1 percent slopes, occasionally flooded (where drained)

## Yields per Acre

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

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

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

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

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

## Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other

characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forest land or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961). Only class and subclass are used in this survey.

*Capability classes*, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forest land, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forest land, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forest land, 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, 2*e*. 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, forest land, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in table 5.

## Pasture and Hayland Suitability Groups

The soils in Bollinger County are assigned to a pasture and hayland group according to their suitability for pasture management.

Many different pasture and hayland suitability groups are in the survey area. Over time, the combination of plants best suited to a particular soil and climate has or will become dominant. Plant communities are not static but vary slightly from year to year and from place to place.

The relationship between soils and vegetation was ascertained during this survey. Thus, pasture and hayland suitability groups generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of each plant species. Soil reaction, salt content, and a seasonal high water table also are important. The "Field Office Technical Guide," which is available at local offices of the Natural Resources Conservation Service, can provide specific information about pasture and hayland suitability groups.

Table 6 shows, for each soil, the assigned pasture and hayland suitability group. Specific concerns and recommendations affecting pasture and hayland management for each group are described in the following paragraphs.

**Group WCB—Wet Clayey Bottom.** Wetness and flooding are the main management concerns. The soils in this group are poorly suited to hay. The hazard of flooding should be considered when a grazing system is designed. Maintaining stands of desirable species is difficult in depressional areas. A drainage system can improve the growth of deep-rooted species.

**Group WCU—Wet Clayey Upland.** Wetness is the main management concern. Maintaining stands of desirable species is difficult in depressional areas. A drainage system can improve the growth of deep-rooted species.

**Group WLB—Wet Loamy Bottom.** A seasonal high water table and flooding are the main management concerns. Plants should be selected accordingly. A seedbed can be easily prepared. A

drainage system can improve the growth of deep-rooted species. The hazard of flooding should be considered when a grazing system is designed.

**Group WLO—Wet Loamy Overflow.** Wetness and flooding are the main management concerns. A seedbed can be easily prepared. A drainage system can improve the growth of deep-rooted species. The hazard of flooding should be considered when a grazing system is designed.

**Group LyO—Loamy Overflow.** Flooding is the main management concern. The hazard of flooding should be considered when a grazing system is designed.

**Group LyU—Loamy Upland.** No serious concerns affect pasture and hayland management. Erosion is a hazard in newly seeded areas. Timely seedbed preparation is needed to ensure a good ground cover.

**Group CyU—Clayey Upland.** Pasture and hay crops are effective in controlling erosion. Erosion during seedbed preparation is the main concern. Timely tillage and a quickly established ground cover reduce the hazard of erosion. The forage species that are tolerant of wetness grow best. The production of deep-rooted legumes is limited because of wetness and a restricted rooting depth.

**Group GrU—Gravelly Upland.** The soils in this group generally are not suited to cultivated crops. Droughtiness and erosion are the main management concerns. Seedbeds should be prepared on the contour. Timely seedbed preparation helps to ensure rapid plant growth and a protective ground cover.

**Group MDU—Moderately Deep Upland.** Shallow-rooted species that are tolerant of droughtiness should be selected for planting. Erosion is a serious hazard in newly seeded areas. Timely tillage and a quickly established ground cover reduce the hazard of erosion.

**Group LyP—Loamy Pan.** A few small areas of this group are used for cultivated crops, and some areas are wooded. A dense layer in the subsoil can restrict the rooting depth and result in insufficient soil moisture in dry years. Erosion during seedbed preparation is a hazard. Seedbeds should be prepared on the contour. Timely tillage and a quickly established ground cover reduce the hazard of erosion.

**Group GrO—Gravelly Overflow.** Most areas of this group have been cleared of trees and are used for pasture and hay. Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during periods of flooding help to keep the pasture in good condition.

**Group GrP—Gravelly Pan.** If the soils in this group are used for improved pasture, chert on the surface hinders tillage. Because of seasonal droughtiness, timely planting is needed to ensure an

adequate stand. Erosion is a hazard in newly seeded areas. Timely seedbed preparation helps to ensure a protective ground cover.

**Group SyO—Sandy Overflow.** The soils in this group tend to be droughty because they are excessively drained, but they are also subject to flooding. Plants should be selected accordingly. A seedbed can be easily prepared. The flooding and the droughtiness should be considered when a grazing system is designed. Because the soils are subject to flooding and droughtiness at different times, a flexible grazing system is needed.

**Group GNS—Generally Not Suited.** The soils in this group generally are not suited to pasture and hay. The suitability for forage species and the use of equipment are limited by the slope, a high content of rock fragments, or both.

## Forest Productivity and Management

Douglas Wallace, forester, Natural Resources Conservation Service, helped prepare this section.

Forests are more than a group of trees. Together with the soil, associated plants, and animals they form a forest ecosystem with many valuable properties. Wood fiber, water quality, wildlife habitat, and recreational activities, such as hunting and hiking, are useful products from a productive forest ecosystem.

An estimated 70 percent (273,000 acres) of Bollinger County is forested (fig. 17). Forested uplands in Bollinger County are covered by oak-hickory and oak-pine communities. White oak, red oak, mockernut hickory, and black oak occur on the better sites. Post oak, blackjack oak, shortleaf pine, eastern redcedar, and shagbark hickory prevail on the more droughty soils. Common associates on flood plain sites include black walnut, American elm, silver maple, sycamore, bur oak, hackberry, green ash, and black willow. This variation in tree species and growth on both upland and bottom land positions is dependent upon the interaction of site characteristics, soil properties, and management activities.

Site characteristics that have a strong affect on tree growth include aspect (the direction the slope is facing) and slope position. These site characteristics influence the amount of available sunlight, air drainage, soil temperature, soil moisture, and relative humidity. Generally, north and east aspects and lower slope positions, which are cooler and have better moisture conditions, will be more productive than the south and west aspects and upper slope positions of the same or similar soil types.



Figure 17.—Mixed hardwoods in an area of Clarksville-Scholten complex, 15 to 45 percent slopes, very stony.

Soil properties are fundamentally important for forest production and management considerations. One-quarter or more of a tree's mass is located in the soil, which serves as a reservoir for moisture, provides an anchor for roots, and supplies essential plant nutrients. In Bollinger County, important soil properties include wetness, slope, content of clay, and depth.

The wetness is the result of a high water table, flooding, poor drainage, or ponding. It causes seedling mortality, limits the use of equipment, and increases the hazard of windthrow by restricting the root depth of some trees. Ruts form easily if wheeled skidders are used when these soils are wet. Deep ruts, which tend to restrict lateral drainage, result in damage to tree roots and alter soil structure. Flooding and/or surface wetness is a problem on Deible, Moniteau, Gladden, Kaintuck, Forestdale, Gabriel, Amagon, Wakeland, Wilbur, and Jamesfin soils. On all of these soils, equipment should be used only during dry periods or when the ground is frozen.

The slope can limit the use of forestry equipment. Slopes of more than 15 percent limit the use of

equipment in logging areas, on skid roads, in yarding areas, and on logging roads. Soil erosion is a hazard in these disturbed areas. Limited use of equipment, due to slope and sites susceptible to erosion, include many areas of Poynor, Clarksville, Scholten, and Brussels soils. Special erosion control measures, such as water bars or dips and designing logging roads and trails to minimize the steepness and length of slope, may help to reduce erosion. Moderately steep to very steep slopes indicate a safety hazard and limitation for equipment. In these areas, equipment should be operated on the contour when possible. Severely sloping sites require moving logs uphill to skid trails and yarding areas.

The content of clay in the topsoil or subsoil can affect equipment use and seedling mortality. Clayey soils have reduced traction, moderate to high seedling mortality, and compact easily when wet. Unsurfaced roads and skid trails rut easily and may be impassable during rainy periods. Soils with high subsoil content of clay include Caneyville, Forestdale, Poynor, Gepp, and

Deible soils. Activities on these soils should be restricted to dry periods or to areas that are surfaced. Successful seedling establishment can be improved with mechanical or chemical weed control, mulching, or supplemental water.

The depth favorable to rooting is generally one of the most significant soil properties affecting forest productivity. Soil horizons that are favorable for root development allow a tree to anchor its roots and provide volume for available water and nutrients. Very shallow and shallow soils, such as Gasconade, limit rooting depth and rooting volume and restrict the use of equipment and hinder the construction of logging roads. Careful planning of proposed logging roads to avoid these areas can minimize most of these limitations. Trees occupying these sites are prone to water stress during dry years or dry seasons and are susceptible to windthrow during high winds. Effective rooting depths are also restricted, to varying degrees, on some of the soils in the survey area because of root-restricting subsoil layers. These soils include Scholten, Captina, Hildebrecht, and Yelton soils.

Management activities can influence woodland productivity and should be aimed at eliminating factors causing tree stress. Generally, this involves controlling erosion; thinning over-stocked young stands; planting trees where natural regeneration is deficient; harvesting old, mature trees; and eliminating destructive fire and grazing.

Forestry investments can be reduced if management activities are concentrated on sites with productive soils and on areas with high-value timber species. The most productive soils in Bollinger County include Memphis, Crider, and Marquand soils on the uplands and Gladden, Jamesfin, Kaintuck, Haymond, and Wilbur soils on the bottom lands.

Fire and grazing have very negative impacts on forest growth and quality. Over 30 percent of the forest land is still subject to moderate to heavy grazing. Grazing destroys the leaf layer on the surface, compacts the soil, and eliminates or damages tree seedlings. Fire damage to a forest is a major concern throughout the Ozarks. Not only are trees damaged by fire, resulting in reduced wood quality and growth, but damage is also caused to soil, water quality, and wildlife habitat. Forest land sites that are protected from grazing and burning have the highest potential for optimum timber, wildlife, and recreational production.

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forest management.

## Forest Productivity

In table 7, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in 50 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 through the Agency's Website.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

*Trees to manage* are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

## Forest Management

In tables 8a and 8b, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified aspect of forest management. *Not limited* indicates that the soil has features that are very favorable for the specified aspect of management. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified aspect of management. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately limited* indicates that the soil has features that are moderately favorable for the specified aspect of management. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Limited* indicates that the soil has one or more features that are significant limitations for the specified aspect of management. The limitations can be overcome, but overcoming them generally requires special design, special planning, soil reclamation, specialized equipment, or other

procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified aspect of management. The limitations generally cannot be overcome without major soil reclamation, special design, specialized equipment, or other expensive procedures. Poor performance, unsafe conditions, or high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation class for the component is based on the most severe limitation.

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management factors. 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 through the Agency's Website.

In table 8a, ratings in the column *hand 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. Ratings indicate the expected difficulty of hand planting, which includes the proper placement of root systems of tree seedlings to a depth of up to 12 inches, using standard hand planting tools. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *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. Ratings indicate the expected difficulty in using a mechanical planter, which includes proper placement of root systems of tree seedlings to a depth of up to 12

inches. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, depth to a water table, and ponding. Ratings indicate the suitability for operating harvesting equipment for off-road transport or harvest of logs and/or wood products by ground-based wheeled or tracked equipment.

Ratings in the column *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 part of the soil from the surface to a depth of about 12 inches is considered in the ratings. Ratings indicate the suitability of using surface-altering soil tillage equipment to prepare the site for planting or seeding.

Ratings in the column *roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, 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 on which trucks transport logs and other wood products from the site.

In table 8b, ratings in the column *erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails.

Ratings in the column *off-road or off-trail erosion* are based on slope and on the soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

Ratings in the column *soil rutting* are based on depth to a water table, rock fragments on or below the surface, surface texture, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. Ratings indicate limitations affecting the hazard or risk of ruts in the uppermost layers of the soil. Soil displacement and puddling (soil deformation and compaction) may occur simultaneously with the formation of ruts.

Ratings in the column *log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, depth to a water table, ponding, flooding, and the hazard of soil slippage. Ratings indicate the suitability of the soil at the forest site to serve as a log landing and to allow the efficient and effective use of equipment for the temporary storage and handling of logs.

Ratings in the column *seedling survival* 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. Ratings indicate the impact of soil, physiographic, and climatic conditions on the survivability of newly established tree seedlings.

## Windbreaks and Environmental Plantings

Doug Wallace, Natural Resources Conservation Service, helped prepare this section.

Living plants play an important role in supporting our life and improving its condition. Properly used and maintained, plants help provide positive solutions to many problems existing in our contemporary environment. In Bollinger County, windbreaks and environmental plantings can be utilized throughout the landscape for a variety of engineering, climatological, and esthetic needs.

Windbreaks can be used successively in open areas of Bollinger County. When working with farmstead and field windbreaks, the following activities should be considered: design and layout; species selection; site preparation; seedling handling; weed management; irrigation; and protection from diseases, insects, and livestock.

Farmstead windbreaks make the farmstead area a more comfortable place to live and work, reduce energy costs, increase garden and fruit tree yields, enhance wildlife populations, buffer noises, and raise property values (Scholten, 1988).

Feedlot windbreaks can be used to protect livestock from wind and snow. Windbreaks significantly reduce calf losses, make feeding operations easier, and enable livestock to maintain better weight with less feed.

Farmstead and feedlot windbreaks are generally three or more rows wide and dense with at least two of the rows a conifer type of tree species. In addition, they should be located on the windward side of the area to be protected and as perpendicular as possible to commonly prevailing winds.

Field windbreaks or shelterbelts are designed to protect field crops and bare soil from the effects of strong winds. Field windbreaks reduce soil losses, increase crop yields, retard the spread of weeds between fields, and enhance wildlife populations (Brandle and others, 1988). They should be carefully planned. Field boundaries, irrigation systems, power

lines, and roads should be considered in determining the location of field windbreaks. Windbreaks should be oriented at right angles to prevailing winds. The typical field windbreak system consists of a series of single rows of trees or shrubs.

Environmental plantings can be used for beautification, visual screens, and control of acoustical, pollution, and climatological problems around buildings and other living spaces. When using environmental plantings, care should be given to selecting plants that exhibit proper height, shape, form, color, and texture that are compatible with the surrounding area, structures, and desired use (Robinette, 1972). Trees and shrubs are easy to establish on most sites and soil types in Bollinger County, as long as there is adequate site preparation prior to planting, and weeds and other competition are controlled after planting and adequate soil moisture is maintained during the growing season.

Table 9 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. 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 of the Cooperative Extension Service or from a commercial nursery.

## Recreation

Bollinger County offers many opportunities for people to enjoy outdoor activities. The Castor River passes through the southern end of the county and provides excellent boating, fishing, and swimming.

The Missouri Department of Conservation owns thousands of acres of land in Bollinger County. They have a number of conservation areas and river or stream accesses. These areas provide excellent wildlife habitat and are available for hunting and hiking. Duck Creek Conservation Area is one of the premier duck hunting spots in the state. This refuge area contains upland and bottom land hardwood forests, cropland, grasslands, marsh, and cypress swamp. It is a major migration and wintering area for migratory waterfowl.

Mingo National Wildlife Refuge is located next to Duck Creek in Wayne County and adds to the access for duck hunters. An auto tour route is open in the

spring and fall. Hiking, fishing, boating, horseback riding, and bird watching are some of the activities which visitors can enjoy.

The soils of the survey area are rated in table 10 according to limitations that affect their suitability for recreational uses. Soils are rated for camp areas, picnic areas, playgrounds, and paths and trails.

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect recreational site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately 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. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are

shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation.

The information in table 10 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

*Camp areas* require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The 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, 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, 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, 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 cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, a water table, ponding, flooding, slope, and texture of the surface layer. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to frequent flooding during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

## Wildlife Habitat

Arron J. Hendershott, Missouri Department of Conservation, helped prepare this section.

Bollinger County is largely a part of the Ozark Plateau, but also contains some lowlands of the Mississippi River flood plain. An estimated 273,000 acres of Bollinger County's landscape is forested. The remainder is a mix of land uses, such as cropland, pasture, hayland, and residential/urban use (Bollinger County agri-facts, 1992).

Before settlement by Europeans, Bollinger County's landscape was shaped by a combination of soil types, natural forces, and actions of native tribes. The result was a much different looking area. While many of the county's current plants and animals were present in the past, their abundances have changed since European occupation.

Assorted soils and geologic features strongly influence the plant communities that occupy a site (Nelson, 1987). Soil pH, fertility, and depth, as well as moisture availability, all have an impact on what plants can be grown on any given location. The plants on a site, in turn, influence the wildlife occurring there. Soil

type can provide valuable insight into historic and present day vegetative patterns, and the animals using that habitat.

*Woodland*—The dominant habitat type (over 80 percent of Bollinger County) was formerly woodland. Most of the Clarksville, Poynor, and Scholten soils have gravel throughout the profile and occur on narrow ridgetops and shoulders of broader ridges. On the summits of the broader ridges, are the Captina, Hildebrecht, and Yelton soils, which are capped with a thin layer of loess. Historically known as barrens, woodland is a cross between a forest and a prairie. Woodlands differ from forests in being more open and having prairie grasses and forbs on the ground. Early settlers to the area described ridges and sunny slopes as park-like areas or barrens due to their sparse vegetative cover. A woodland was produced by poorer and drier soils combined with fires set by native tribes. Fire was a management tool, as well as a weapon for war and hunting (Guyette and McGinnes, 1982).

Periodic fires helped shape a woodland in two ways. First, young trees that cannot tolerate fire were killed or set back. Fewer trees made it to the canopy to shade the ground. Second, the fire would aid the germination of prairie plant seeds by blackening the earth and allowing sunlight to warm the soil.

This combination of prairie and forest made for a fantastic wildlife resource. Animals utilizing both forest and prairie plants were well suited to live in these areas. Wild turkey, white-tail deer, cottontail rabbits, bluebirds, flickers, bobwhite quail, tiger salamanders, fence lizards, and coachwhip snakes all made ample use of woodland habitat.

Bollinger County's woodlands have changed over the last 200 years. Fire is no longer a major shaping force to favor the prairie plants, instead its suppression allows the encroachment of trees. The Ozarks history of erosion from logging and fire suppression has yielded more forests that are not as open as those of a woodland (Beilmann and Benner, 1951).

*Fens and seeps*—A small amount of wetlands occur in the hilly parts of the northern two-thirds of Bollinger County called fens and seeps. They are created when water seeps out of the ground along footslopes or in valleys. The soil and parent rock type influence whether the wetland is a fen or a seep. Fens tend to be associated with water with basic pH, resulting from limestone or dolomite, while seeps occupy more acidic water conditions resulting from sandstone or igneous rock.

Both wetland types are important water sources for all wildlife species and attract water-loving species, such as American bittern, common yellow-throat, sedge wren, marsh wren, red-winged blackbird,

snapping turtle, and many species of crayfish. Fens and seeps are important wildlife features that do not tolerate much disturbance, if they are to support wildlife.

*Bottom land forests, swamps, and marshes*—A small southern section of Bollinger County and some of the river flood plains were poorly drained with Amagon, Calhoun, Forestdale, and Wakeland soils, which promoted the existence of bottom land forest, forested swamps, and herbaceous marshes. These water-dominated landscapes created habitat for the widest variety of animals in Bollinger County.

Swamps had fluctuating water levels throughout the year, which varied from year to year. Bald cypress, water tupelo, button bush, willow, water oak, willow oak, and red maple were dominant species. Swamps were important to migratory waterfowl, shorebirds, and neo-tropical songbirds. Three former residents of Bollinger County, the ivory-billed woodpecker, Bachman's warbler, and the Carolina parakeet are all gone due to loss of this type of habitat. Swamp-specific animals found in this section of Bollinger County include golden mouse, cotton mouse, marsh rice rat, swamp rabbit, alligator snapping turtle, siren, three-toed amphiuma, mole salamander, green treefrog, Mississippi mud turtle, southern painted turtle, chicken turtle, mud snake, Swainson's warbler, Mississippi kite, and fish crow.

Marshes were open wetland communities containing herbaceous sedges, smartweed, millet, wild rice, cutgrass, cattail, cordgrass, rushes, and forbs. Marshes support waterfowl, shorebirds, bitterns, moorhens, beaver, muskrats, aquatic snakes, turtles, salamanders, and frogs.

Small elevated ridges of 5 to 10 feet in the Mississippi River lowlands promoted bottom land forests and enormous stands of river cane, known as canebrakes. Bottom land forests contained some of the largest trees in the county. The annual cycle of flooding in the late fall and winter helped to generate large stands of mixed hardwoods, with canopies exceeding 150 feet. These forests, in turn, supported animals, such as the pileated woodpecker, cerulean warbler, grey squirrel, flying squirrel, wood duck, mole salamander, pipevine swallowtail, and spice bush swallowtail butterfly. Mast crops and abundant cavities in these forests were attractive to a wide range of animals. Canebrakes were pure stands of cane, once occupying thousands of acres along streams and bottom land ridges. Nearly impenetrable canebrakes were valuable to swamp rabbit, black bear, Swainson's warbler, golden mice, and a host of moth and butterfly caterpillars. Some thick cane stands still exist, but are nothing compared to their

previous expanse. A hint to this is found in the name "Hurricane Creek" of eastern Bollinger County. "Hurricane," a historic misnomer for canebrakes, was perhaps given to this creek due to the predominance of cane.

The Mississippi River flood plain lowlands and flood plains along the Castor River, Crooked Creek, the Whitewater River, and the Little Whitewater River supported extensive bottom land forests and canebrakes in Bollinger County. Bottom land forests in Bollinger County are a tremendous resource worthy of proper management.

*Sand forests and woodlands*—A small portion of southeastern Bollinger County has Malden soil, which historically supported drier adapted plants and animals. Plants include black and sand hickory, along with blackjack and post oak. While upland animals occupied these woodlands and forests, some animals occupied sandy soil specifically. Upland animals, such as white-tail deer, raccoon, squirrel, and turkey were common, with the addition of numerous nongame, sand-adapted species, including eastern spadefoot, Illinois chorus frog, sand tiger beetle, sand cicada, and sand grasshopper. Sandy soils have been converted to other uses, making this habitat type uncommon.

Bollinger County has a great potential for wildlife. Wise management of existing habitat can be enhanced through knowledge of site conditions and dominant plant communities.

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 tables 11a and 11b, 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 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 the specified use. *Not limited* indicates that the soil has features that are very favorable for the specified use. Habitat is easily established, improved, or maintained. *Slightly limited* indicates that the soil

has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Habitat can be established, improved, or maintained. *Moderately limited* indicates that the soil has features that are moderately favorable for the specified use. Habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. Habitat is difficult to create, improve, or maintain in most places. Management is difficult and must be very intensive. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. Habitat is usually impractical or impossible to create, improve, or maintain. Management would be very difficult, and unsatisfactory results can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation class for the component is based on the most severe limitation.

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

*Grain and seed crops* are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Selection should be made from a list of locally adapted species.

*Domestic grasses and legumes* are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil

temperature and soil moisture also are considerations. Selection should be made from a list of locally adapted species.

*Upland wild herbaceous plants* are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Selection should be made from a list of locally adapted species.

*Upland shrubs and vines* are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs and vines are depth of the root zone, available water capacity, salinity, and soil moisture. Selection should be made from a list of locally adapted species.

*Upland deciduous trees* and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees are depth of the root zone, available water capacity, and wetness. Selection should be made from a list of locally adapted species.

*Upland mixed deciduous-conifer trees* and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, browse, seeds, and foliage. Soil properties and features that affect the growth of these trees are depth of the root zone, available water capacity, and wetness. Selection should be made from a list of locally adapted species.

*Riparian herbaceous plants* are annual and perennial native or naturally established grasses and forbs that grow on moist or wet sites. Soil properties and features affecting riparian herbaceous plants are surface texture, wetness, flooding, ponding, and surface stones. Selection should be made from a list of locally adapted species.

*Riparian shrubs, vines, and trees* are bushy woody plants and trees that grow on moist or wet sites. Soil properties and features affecting these plants are surface texture, wetness, flooding, ponding, and surface stones. Selection should be made from a list of locally adapted species.

*Freshwater wetland plants* are grasses, forbs, and shrubs that are adapted to wet soil conditions. The soils suitable for this habitat generally occur adjacent to springs, seeps, depressions, areas of bottom land, marshes, or backwater areas on flood plains. Most areas are ponded for some period of time during the year. Soil properties and features affecting these plants are surface texture, wetness, ponding, and soil

reaction. Selection should be made from a list of locally adapted species.

*Irrigated freshwater wetland plants* are grasses, forbs, and shrubs that are adapted to wet soil conditions. The soils suitable for this habitat generally occur in areas of cropland, in previously cropped areas, and in marginal areas associated with cropland and wetlands. These areas may be ponded for some period of time during the year. They are generally suitable for restoring wetland features temporarily or permanently. Soil properties and features affecting these plants are surface texture, permeability, wetness, ponding, and soil reaction. Selection should be made from a list of locally adapted species.

## Engineering

This section provides information for planning land uses related to urban development and to water management (fig. 18). Soils are rated for various uses, and the most limiting features are identified. Ratings

are given for building site development, sanitary facilities, construction materials, water management, and waste 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 within a depth of 5 or 6 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



Figure 18.—Hay bales in an area of Wrengart silt loam, 5 to 9 percent slopes, eroded. A newly constructed pond is in the background.

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 grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, 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; evaluate sites for agricultural waste management; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

### Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 12 shows the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately 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. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation.

*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 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 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 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, 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, 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, a water table, and ponding.

*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; 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, a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

### Sanitary Facilities

The soils of the survey area are rated in table 13 according to limitations that affect their suitability for sanitary facilities. Soils are rated for septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect sanitary facilities. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately 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. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are

shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation.

*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, 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 be contaminated. Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, hillside seepage, and contamination of ground water, can affect public health.

*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, 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, 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, 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, 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, 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 and Excavating

The soils of the survey area are rated in table 14 as a source of roadfill, sand, gravel, or topsoil. Normal compaction, minor processing, and other standard construction practices are assumed. The soils are also rated according to limitations that affect their suitability for shallow excavations. The ratings in the table are both verbal and numerical.

For sand and gravel, the soils are rated as a *probable, possible, or improbable* source. A rating of *probable* indicates that the source material is likely to be in or below the soil. A rating of *possible* indicates that the source material may be in or below the soil and that further investigation is warranted. A rating of *improbable* indicates that the source material is unlikely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. A numerical rating of 1.00 indicates that the soil is an improbable source. A numerical rating of less than 1.00 indicates the degree to which the soil is a possible or probable source of sand or gravel.

Other rating class terms used in this table indicate the extent to which the soils are limited by soil features that affect their use as a source for roadfill or topsoil or their suitability for shallow excavations. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately 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. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are

shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation rating for the component is based on the most severe 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, 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).

*Sand* and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of the thickness. The assumption is that the sand or gravel

layer below the depth of observation exceeds the minimum thickness.

*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, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, 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.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, 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.

## Water Management

Table 15 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas, drainage, irrigation, terraces and diversions, and grassed waterways.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited*

indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately 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. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation.

*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. Slope can affect the storage capacity of the reservoir area.

*Drainage* is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, permeability, depth to a water table, ponding, slope, and flooding. Excavating and grading and the

stability of ditchbanks are affected by depth to bedrock or a cemented pan, large stones, slope, and the likelihood that cutbanks will cave. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. The availability of drainage outlets is not considered in the ratings.

*Irrigation* is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to a water table, ponding, flooding, available water capacity, intake rate, permeability, erodibility, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the depth of the root zone, reaction, and the amount of salts, sodium, sulfur, lime, or gypsum.

*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, a water table, ponding, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, erodibility, an excessively coarse texture, and restricted permeability adversely affect maintenance.

*Grassed waterways* are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, a water table, slope, and depth to bedrock affect the construction of grassed waterways. Erodibility, soil moisture regime, available water capacity, restricted rooting depth, restricted permeability, and toxic substances, such as salts and sodium, affect the growth and maintenance of the grass after construction.

## Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Table 16 shows the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of

fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of this table, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 mg/l. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 mg/l. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the table are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater through irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (slow rate treatment of wastewater and rapid infiltration of wastewater).

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderately 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. *Limited* indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but overcoming them generally requires special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate or high maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be

overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The numerical ratings are shown as decimal fractions ranging from 0.00 to 1.00. Limitation classes are assigned as follows:

Not limited .....	0.00
Slightly limited .....	0.01 to 0.30
Moderately limited .....	0.31 to 0.60
Limited .....	0.61 to 0.99
Very limited .....	1.00

The numerical ratings used to express the severity of individual limitations 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.

Limitation class terms and numerical ratings are shown for each limiting soil feature listed. As many as three soil features may be listed for each component. The overall limitation rating for the component is based on the most severe limitation.

*Land application of manure and food-processing waste* not only disposes of waste material but also improves crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste.

*Land application of municipal sewage sludge* not only disposes of waste material but also improves crop

production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge.

*Disposal of wastewater by irrigation* not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also improves crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals.

*Treatment of wastewater by slow rate process* is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water percolates to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste.

*Treatment of wastewater by rapid infiltration process* is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil, eventually reaching the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. A water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance.



# 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 17 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. 19). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

*Classification* of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

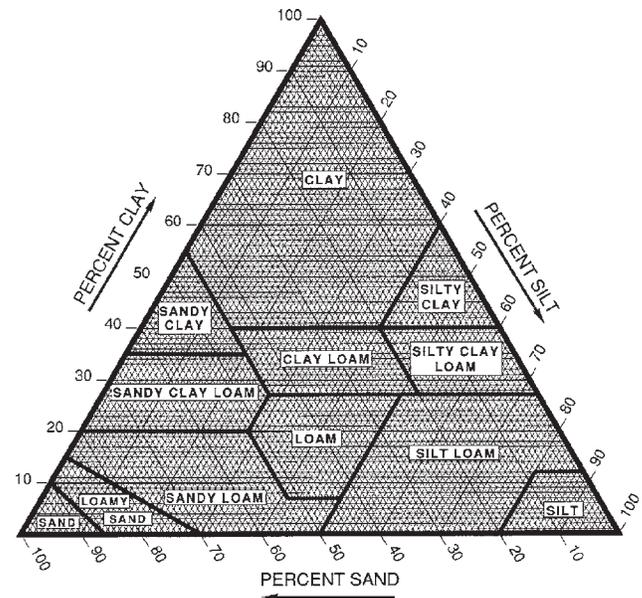


Figure 19.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

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

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

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

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

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry 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 18 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 (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at  $1/3$ - or  $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Saturated hydraulic conductivity* refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity ( $K_{sat}$ ). The estimates in the table indicate the rate of water movement, in micrometers per second ( $\mu\text{m}/\text{sec}$ ), when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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

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

the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

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

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

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

*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. Descriptions of these groups are available in the "National Soil Survey Handbook" (USDA, 2003).

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

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

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

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

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

## Water Features

Table 20 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

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

The four hydrologic soil groups are:

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

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

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

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

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

*Water table* refers to a saturated zone in the soil. The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic

features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

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

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

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

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

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on

the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Soil Features

Table 21 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

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

*Potential for frost action* is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed

that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

*Risk of corrosion* pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate, or high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate, or high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.



# Classification of the Soils

---

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 22 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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

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

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

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

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

## Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

### **Alred Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate in the upper part; slow in the lower part

*Landform:* Hillslopes and ridges

*Position on the landform:* Backslopes, summits, and shoulders

*Parent material:* Gravelly colluvium derived from cherty dolostone over clayey residuum derived from dolostone

*Slope range:* 8 to 35 percent

*Elevation:* 660 feet

*Taxonomic classification:* Loamy-skeletal over clayey, siliceous, semiactive, mesic Typic Paleudalfs

### Typical Pedon

Alred gravelly silt loam, in an area of Alred-Wrengart complex, 14 to 35 percent slopes, in a hardwood forest; 700 feet north and 400 feet east of the southwest corner of sec. 16, T. 32 N., R. 10 E.; USGS Scopus, Missouri, topographic quadrangle; UTM coordinates 4,148,650 meters Northing and 238,937 meters Easting, Zone 16, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 3 inches; dark grayish brown (10YR 4/2) gravelly silt loam; moderate very fine and fine granular structure; very friable; many very fine to fine roots and common medium to coarse roots; many very fine and fine pores; 25 percent chert gravel; moderately acid; clear smooth boundary.

E—3 to 11 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak very fine and fine subangular blocky structure; friable; many very fine to fine roots and common medium to coarse roots; many very fine to fine and common medium tubular pores; 20 percent chert gravel; very strongly acid; gradual smooth boundary.

Bt1—11 to 20 inches; dark yellowish brown (10YR 4/6) gravelly silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine to coarse roots; many very fine to fine and common medium pores; common faint dark yellowish brown (10YR 4/4) clay films on all faces of peds and few light yellowish brown (10YR 6/4) silt coats; 15 percent chert gravel; very strongly acid; clear wavy boundary.

Bt2—20 to 38 inches; dark yellowish brown (10YR 4/6) extremely gravelly silty clay loam; moderate medium subangular blocky structure; firm; common very fine to fine roots and few medium roots; many very fine to fine and many medium tubular pores; common distinct light yellowish brown (10YR 6/4) silt coats and common faint dark yellowish brown (10YR 4/4) clay films on all faces of peds; 5 percent chert cobbles, 5 percent chert stones, and 50 percent chert gravel; very strongly acid; clear wavy boundary.

2Bt3—38 to 54 inches; 80 percent red (2.5YR 4/6) and

20 percent yellowish brown (10YR 5/6) clay; moderate very fine and fine angular blocky structure; very firm; few very fine and fine roots; common very fine to medium pores; few faint reddish brown (2.5YR 4/4) clay films on all faces of peds; 5 percent chert cobbles; strongly acid; gradual wavy boundary.

2Bt4—54 to 70 inches; 70 percent red (2.5YR 4/6) and 30 percent yellowish brown (10YR 5/6) clay; moderate very fine and fine angular blocky structure; very firm; few very fine and fine roots; common very fine to medium pores; few faint reddish brown (2.5YR 4/4) clay films on all faces of peds; strongly acid; 5 percent chert cobbles.

### Range in Characteristics

*Depth to the 2Bt horizon:* 14 to 40 inches

*Thickness of the solum:* More than 60 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—15 to 60 percent

Reaction—very strongly acid to moderately acid

*E horizon:*

Color—hue of 7.5YR to 10YR, value of 4 to 6, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—20 to 50 percent

Reaction—very strongly acid to moderately acid

*Bt horizon:*

Color—hue of 7.5YR to 10YR, value of 4 to 6, and chroma of 3 to 8

Texture of the fine-earth fraction—loam, silt loam, or silty clay loam

Content of rock fragments—35 to 75 percent (subhorizons may contain less)

Reaction—very strongly acid or strongly acid

*2Bt horizon:*

Color—hue of 2.5YR to 5YR, value of 3 to 6, and chroma of 4 to 8

Texture of the fine-earth fraction—clay

Content of rock fragments—0 to 35 percent (ranges up to 60 percent in the lower part of the horizon)

Reaction—strongly acid to slightly acid

## Amagon Series

*Depth class:* Very deep

*Drainage class:* Poorly drained

*Permeability:* Slow

*Landform:* Lowlands

*Position on the landform:* Stream terraces

*Parent material:* Loamy alluvium

*Slope range:* 0 to 1 percent

*Elevation:* 350 feet

*Taxonomic classification:* Fine-silty, mixed, active, thermic Typic Endoaqualfs

### Typical Pedon

Amagon silt loam, 0 to 1 percent slopes, occasionally flooded, in a cultivated field; 850 feet south and 2,050 feet west of the northeast corner of sec. 26, T. 29 N., R. 10 E.; USGS Dongola, Missouri, topographic quadrangle; UTM coordinates 4,115,861 meters Northing and 241,381 meters Easting, Zone 16, NAD27.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; weak fine subangular blocky structure; friable; moderately acid; clear smooth boundary.

Eg—4 to 15 inches; gray (10YR 6/1) silt loam; weak fine subangular blocky structure; friable; common gray (2.5Y 6/1) iron depletions; common strong brown (7.5YR 4/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Btg1—15 to 34 inches; gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few faint gray (2.5Y 5/1) clay films on all faces of peds and few light brownish gray (2.5Y 6/2) silt coats; common gray (2.5Y 6/1) iron depletions; common strong brown (7.5YR 4/6) masses of oxidized iron; very strongly acid; abrupt smooth boundary.

Btg2—34 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common light brownish gray (2.5Y 6/2) silt coats and few faint gray (2.5Y 5/1) clay films on all faces of peds; common strong brown (7.5YR 4/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Btg3—50 to 59 inches; grayish brown (2.5Y 5/2) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few faint gray (2.5Y 5/1) clay films on all faces of peds and few light brownish gray (2.5Y 6/2) silt coats; common yellowish red (5YR 5/8) masses of oxidized iron; few black (10YR 2/1) iron-manganese masses; strongly acid; gradual smooth boundary.

Btg4—59 to 71 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common faint light brownish gray (2.5Y 6/2) clay films on all faces of peds and few light brownish

gray (2.5Y 6/2) silt coats; common yellowish red (5YR 5/8) masses of oxidized iron; moderately acid; gradual smooth boundary.

2BCg—71 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium subangular blocky structure; friable; few gray (2.5Y 5/1) clay films and few light brownish gray (2.5Y 6/2) silt coats; few strong brown (7.5YR 5/8) masses of oxidized iron; moderately acid.

### Range in Characteristics

*Thickness of the solum:* 50 to more than 80 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Redoximorphic features—iron segregations in shades of brown, gray, or yellow

Reaction—very strongly acid to slightly acid, unless limed

*Eg horizon:*

Color—hue of 10YR, value of 5 to 7, and chroma of 1 or 2

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam

Reaction—very strongly acid to slightly acid

*Btg or 2Btg horizon:*

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam or silty clay loam

Reaction—very strongly acid to slightly acid

*BC or 2BC horizon:*

Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam, silty clay loam, loam, or fine sandy loam

Reaction—strongly acid to neutral

*2C horizon (if it occurs):*

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam, fine sandy loam, sandy loam, loamy fine sand, or loamy sand

Reaction—strongly acid to slightly alkaline

## ***Aslinger Series***

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow

*Landform:* Hillslopes

*Position on the landform:* Footslopes and backslopes

*Parent material:* Loamy colluvium over loamy and clayey alluvium

*Slope range:* 3 to 15 percent

*Elevation:* 620 feet

*Taxonomic classification:* Fine-loamy, mixed, active, mesic Fragiaquic Paleudults

### **Typical Pedon**

Aslinger silt loam, 3 to 8 percent slopes, in a hay field; 475 feet west and 2,100 feet north of southeast corner of sec. 31, T. 32 N., R. 7 E.; in Madison County; USGS Cherokee Pass topographic quadrangle; UTM coordinates 4,143,764 meters Northing and 738,053 meters Easting, Zone 15, NAD27.

Ap—0 to 4 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; moderate very fine and fine granular structure; very friable; many very fine and fine roots; 2 percent subrounded chert gravel; moderately acid; clear smooth boundary.

AB—4 to 8 inches; dark yellowish brown (10YR 4/4) and dark yellowish brown (10YR 4/6) silt loam; weak very fine subangular blocky structure parting to weak very fine granular; very friable; many very fine and fine roots; 1 percent subrounded chert gravel; slightly acid; clear smooth boundary.

Bt1—8 to 16 inches; dark yellowish brown (10YR 4/6) silt loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; common very fine and fine roots; common faint clay films on faces of peds; 1 percent subrounded chert gravel; moderately acid; abrupt smooth boundary.

Bt2—16 to 21 inches; yellowish brown (10YR 5/8) and light brownish gray (10YR 6/2) silt loam; moderate thick platy structure parting to moderate fine subangular blocky; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/6) clay films on faces of peds and few prominent clay films on vertical faces of peds; 7 percent subrounded chert gravel; common coarse distinct

pale brown (10YR 6/3) iron depletions; very strongly acid; clear smooth boundary.

2Btx—21 to 29 inches; yellowish brown (10YR 5/6) and light brownish gray (10YR 6/2) very gravelly silt loam; weak thick platy structure parting to weak fine subangular blocky; firm; few very fine roots between peds; common prominent dark yellowish brown (10YR 4/6) clay films on vertical faces of peds; 53 percent subrounded chert gravel and 1 percent subrounded chert cobbles; 30 percent brittle; very strongly acid; clear irregular boundary.

3Bt1—29 to 40 inches; strong brown (7.5YR 5/6) and red (2.5YR 4/6) very gravelly silty clay loam; moderate fine subangular blocky structure; firm; many prominent grayish brown (10YR 5/2) clay films on faces of peds; 56 percent subrounded chert gravel and 1 percent subrounded chert cobbles; very strongly acid; gradual wavy boundary.

3Bt2—40 to 48 inches; yellowish red (5YR 5/8) very gravelly clay loam; moderate fine subangular blocky structure; firm; many prominent light brownish gray (10YR 6/2) clay films on faces of peds; 49 percent subrounded chert gravel and 2 percent subrounded chert cobbles; very strongly acid; clear wavy boundary.

3Bt3—48 to 55 inches; strong brown (7.5YR 5/6) very gravelly clay loam; moderate fine subangular blocky structure; firm; many prominent light gray (N 7/0) clay films on faces of peds; few black (10YR 2/1) masses of manganese or iron-manganese accumulation; 40 percent subrounded chert gravel and 10 percent subrounded chert cobbles; very strongly acid; clear wavy boundary.

4Bt4—55 to 80 inches; yellowish red (5YR 5/6) extremely cobbly clay; moderate fine subangular blocky structure; firm; many prominent continuous dark red (2.5YR 3/6) clay films on faces of peds and few prominent patchy gray (10YR 5/1) clay films; 35 percent chert gravel and 40 percent chert cobbles; very strongly acid.

### **Range in Characteristics**

*Depth to the 2Btx horizon:* 20 to 36 inches

*A or Ap horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 7 percent gravel

Reaction—very strongly acid to slightly acid

*AB horizon:*

Color—hue of 10YR or 7.5YR, value of 4, and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam  
 Content of rock fragments—0 to 7 percent gravel  
 Reaction—very strongly acid to slightly acid

*Bt horizon:*

Color—hue of 10YR to 5YR, value of 4 to 6, and chroma of 6 to 8  
 Redoximorphic features—iron segregations in shades of brown, gray, or yellow  
 Texture of the fine-earth fraction—silt loam or silty clay loam  
 Content of rock fragments—0 to 15 percent gravel  
 Reaction—very strongly acid to moderately acid

*2Btx and 3Bt horizons:*

Color—hue of 10YR to 2.5YR, value of 4 to 6, and chroma of 2 to 8  
 Texture of the fine-earth fraction—loam, silt loam, or clay loam  
 Content of rock fragments—15 to 60 percent gravel; 0 to 10 percent cobbles  
 Reaction—very strongly acid or strongly acid

*Bt horizon:*

Color—hue of 10YR to 2.5YR, value of 4 to 6, and chroma of 2 to 8  
 Texture of the fine-earth fraction—silty clay loam, clay loam, or clay  
 Content of rock fragments—25 to 60 percent gravel; 0 to 40 percent cobbles  
 Reaction—extremely acid to strongly acid

## **Auxvasse Series**

*Depth class:* Very deep

*Drainage class:* Somewhat poorly drained

*Permeability:* Very slow

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Fine-silty loess over clayey residuum derived from dolostone

*Slope range:* 2 to 5 percent

*Elevation:* 750 feet

*Taxonomic classification:* Fine, mixed, active, mesic Aeric Albaqualfs (taxajunct)

*Taxadjunct features:* The Auxvasse soils in this survey area have mixed mineralogy instead of smectitic mineralogy typical for the series. This difference, however, does not affect the usefulness or behavior of the soils.

### **Typical Pedon**

Auxvasse silt loam, 2 to 5 percent slopes, in a cultivated field; 200 feet south and 500 feet west of the northeast corner of sec. 29, T. 33 N., R. 10 E.; USGS

Sedgewickville, Missouri, topographic quadrangle; UTM coordinates 4,156,955 meters Northing and 237,210 meters Easting, Zone 16, NAD27.

Ap—0 to 6 inches; brown (10YR 4/3) silt loam; moderate very fine and fine granular structure; friable; common yellowish red (5YR 5/6) masses of oxidized iron; common black (10YR 2/1) iron-manganese concretions; slightly acid; clear smooth boundary.

AB—6 to 17 inches; yellowish brown (10YR 5/4) silt loam; moderate very fine and fine subangular blocky structure; friable; very few light gray (10YR 7/2) silt coats; common yellowish red (5YR 5/6) masses of oxidized iron; slightly acid; abrupt smooth boundary.

2Bt1—17 to 25 inches; brown (10YR 5/3) silty clay loam; strong medium prismatic structure parting to moderate very fine and fine subangular blocky; firm; few distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds and few light gray (10YR 7/2) silt coats; common yellowish brown (10YR 5/6) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; extremely acid; gradual wavy boundary.

2Bt2—25 to 42 inches; brown (10YR 5/3) silty clay loam; strong medium prismatic structure parting to moderate very fine and fine subangular blocky; firm; few distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds and few light gray (10YR 7/2) silt coats; many strong brown (7.5YR 5/6) masses of oxidized iron; many grayish brown (10YR 5/2) iron depletions; common black (10YR 2/1) iron-manganese masses; very strongly acid; gradual wavy boundary.

2Btg1—42 to 51 inches; 60 percent grayish brown (10YR 5/2) and 40 percent yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; firm; few faint dark grayish brown (10YR 4/2) clay films on all faces of peds and few light gray (10YR 7/2) silt coats; many strong brown (7.5YR 5/6) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; 1 percent chert gravel; very strongly acid; clear wavy boundary.

2Btg2—51 to 66 inches; 80 percent grayish brown (10YR 5/2) and 20 percent yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; few faint dark grayish brown (10YR 4/2) clay films on all faces of peds and few light gray (10YR 7/2) silt coats; many strong brown (7.5YR 5/6) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; 1 percent chert gravel; very strongly acid; clear wavy boundary.

2Btg3—66 to 83 inches; 60 percent yellowish brown (10YR 5/6) and 40 percent gray (10YR 5/1) silty clay loam; strong very fine angular blocky structure; firm; few faint dark grayish brown (10YR 4/2) clay films on all faces of peds; many strong brown (7.5YR 5/6) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; strongly acid.

### Range in Characteristics

#### *Ap* horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3  
 Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations  
 Texture of the fine-earth fraction—silt loam  
 Content of rock fragments—none  
 Reaction—strongly acid to neutral

#### *AB* horizon:

Color—hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 to 4  
 Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations  
 Texture of the fine-earth fraction—silt loam  
 Content of rock fragments—none  
 Reaction—strongly acid to slightly acid

#### *2Bt* horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 or 3  
 Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations  
 Texture of the fine-earth fraction—silty clay loam or silty clay  
 Content of rock fragments—none  
 Reaction—extremely acid to slightly acid

#### *2Btg* horizon:

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2  
 Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations  
 Texture of the fine-earth fraction—silt loam or silty clay loam  
 Content of rock fragments—0 to 3 percent  
 Reaction—very strongly acid to slightly acid

## ***Bearthicket Series***

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Silty alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 410 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Ultic Hapludalfs

### Typical Pedon

Bearthicket silt loam, 0 to 3 percent slopes, rarely flooded, in a cultivated field; 520 feet east and 350 feet north of the southwest corner of sec. 14, T. 30 N., R. 5 E.; in Wayne County; USGS Coldwater, Missouri, topographic quadrangle; UTM coordinates 4,128,080 meters Northing and 724,176 meters Easting, Zone 15, NAD27.

*Ap*—0 to 7 inches; dark yellowish brown (10YR 3/4) silt loam, yellowish brown (10YR 5/4) dry; weak fine granular structure; friable; many very fine and fine roots; many fine tubular pores; neutral; clear smooth boundary.

*Bt1*—7 to 24 inches; dark brown (7.5YR 3/4) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; many prominent black (10YR 2/1) organic stains on faces of peds and few faint clay films on faces of peds; few fine black (10YR 2/1) iron-manganese concretions throughout; moderately acid; gradual wavy boundary.

*Bt2*—24 to 32 inches; brown (7.5YR 4/4) silt loam; moderate fine subangular blocky structure; friable; few very fine roots; many fine tubular pores; common prominent black (10YR 2/1) organic stains on faces of peds and few faint clay films on faces of peds; few fine black (10YR 2/1) iron-manganese concretions throughout; 1 percent chert gravel; moderately acid; gradual wavy boundary.

*Bt3*—32 to 58 inches; brown (7.5YR 4/4) silt loam; few fine distinct yellowish brown (10YR 5/4) mottles; moderate fine subangular blocky structure; friable; few very fine roots; many fine tubular pores; common faint clay films on faces of peds and few prominent black (10YR 2/1) organic stains on faces of peds; slightly acid; clear wavy boundary.

*Bt4*—58 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; many fine distinct yellowish brown (10YR 5/4) mottles; moderate fine subangular blocky structure; friable; many fine tubular pores; common faint clay films on faces of peds; slightly acid.

**Range in Characteristics**

*Thickness of the solum:* 40 to 80 inches or more

*A or Ap horizon:*

Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 2 percent gravel

Reaction—strongly acid to neutral

*AB or BA horizon:*

Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 2 percent

Reaction—strongly acid to neutral

*Bt horizon (upper part):*

Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 2 percent

Reaction—strongly acid to neutral

*2Bt or Bt horizon (lower part):*

Color—hue of 10YR to 2.5YR, value of 3 to 6, and chroma of 3 to 6

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—0 to 30 percent (may range up to 60 percent below a depth of 60 inches)

Reaction—strongly acid to neutral

*2BC or 2C horizon (if it occurs):*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture of the fine-earth fraction—coarse sandy loam, sandy loam, fine sandy loam, or loam

Content of rock fragments—0 to 35 percent

Reaction—moderately acid to neutral

**Bender Series**

*Depth class:* Moderately deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderately rapid

*Landform:* Hillsides

*Position on the landform:* Backslopes

*Parent material:* Residuum from sandstone

*Slope range:* 15 to 50 percent

*Elevation:* 1,120 feet

*Taxonomic classification:* Loamy-skeletal, siliceous, active, mesic Typic Hapludults

**Typical Pedon**

Bender extremely cobbly sandy loam, in an area of Coulstone-Bender complex, 15 to 50 percent slopes, very stony, in a pine and hardwood forest; 950 feet west and 250 feet south of the northeast corner of sec. 25, T. 29 N., R. 6 E.; in Shannon County; USGS Summersville NE, Missouri, topographic quadrangle; UTM coordinates 4,113,713 meters Northing and 628,943 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 6 inches; dark grayish brown (10YR 4/2) extremely cobbly sandy loam; weak fine granular structure; friable; many fine roots throughout; many fine interstitial and tubular pores; 35 percent sandstone cobbles and 30 percent chert gravel; very strongly acid; abrupt smooth boundary.

E—6 to 9 inches; pale brown (10YR 6/3) very gravelly fine sandy loam; weak fine subangular blocky structure; friable; common medium roots; common fine tubular pores; few faint brown (10YR 5/3) organic stains; 10 percent sandstone cobbles and 35 percent chert gravel; very strongly acid; clear smooth boundary.

Bt1—9 to 15 inches; pale brown (10YR 6/3) very gravelly fine sandy loam; weak fine subangular blocky structure; friable; common medium roots; common fine tubular pores; few distinct yellowish brown (10YR 5/4) clay films; 5 percent sandstone cobbles and 35 percent chert gravel; very strongly acid; clear smooth boundary.

Bt2—15 to 23 inches; pale brown (10YR 6/3) very gravelly sandy loam; weak fine subangular blocky structure; friable; few fine roots; common fine tubular pores; common distinct light gray (10YR 7/2) skeletal and common distinct brown (7.5YR 4/4) clay films on rock fragments; 10 percent sandstone cobbles and 35 percent chert gravel; very strongly acid; abrupt wavy boundary.

Bt3—23 to 35 inches; brown (7.5YR 5/3) extremely cobbly coarse sandy loam; weak fine subangular blocky structure; friable; few fine roots; few fine tubular pores; many distinct brown (7.5YR 4/4) clay films and common distinct pale brown (10YR 6/3) skeletal; 35 percent chert gravel and 30 percent sandstone cobbles; very strongly acid; abrupt smooth boundary.

R—35 inches; sandstone bedrock.

**Range in Characteristics**

*Depth to bedrock:* 20 to 40 inches

*A horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3

Texture of the fine-earth fraction—sandy loam  
 Content of rock fragments—0 to 40 percent  
 cobbles; 35 to 75 percent gravel  
 Reaction—very strongly acid to moderately acid

*E horizon:*

Color—hue of 10YR, value of 5 or 6, and chroma of  
 2 to 6  
 Texture of the fine-earth fraction—sandy loam, fine  
 sandy loam, or loam  
 Content of rock fragments—0 to 40 percent  
 cobbles; 35 to 75 percent gravel  
 Reaction—very strongly acid to moderately acid

*Bt horizon (upper part):*

Color—hue of 5YR to 10YR, value of 4 to 6, and  
 chroma of 3 to 6  
 Texture of the fine-earth fraction—sandy loam, fine  
 sandy loam, or loam  
 Content of rock fragments—0 to 40 percent  
 cobbles; 35 to 75 percent gravel  
 Reaction—very strongly acid to moderately acid

*Bt horizon (lower part):*

Color—hue of 5YR to 10YR, value of 4 to 6, and  
 chroma of 3 to 6  
 Texture of the fine-earth fraction—coarse  
 sandy loam, sandy loam, fine sandy loam,  
 or loam  
 Content of rock fragments—0 to 40 percent  
 cobbles; 35 to 75 percent gravel  
 Reaction—extremely acid to moderately acid

## ***Bosket Series***

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Loamy alluvium

*Slope range:* 0 to 5 percent

*Elevation:* 360 feet

*Taxonomic classification:* Fine-loamy, mixed, active,  
 thermic Mollic Hapludalfs

### **Typical Pedon**

Bosket loam, 0 to 3 percent slopes, occasionally  
 flooded, in a cultivated field; 2,350 feet north and  
 100 feet east of the southwest corner of sec. 26,  
 T. 29 N., R. 10 E.; USGS Dongola, Missouri,  
 topographic quadrangle; UTM coordinates 4,115,079  
 meters Northing and 240,101 meters Easting, Zone  
 16, NAD27.

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2)  
 loam; grayish brown (10YR 5/2) dry color; weak  
 fine granular structure; friable; common fine roots;  
 moderately acid; abrupt smooth boundary.

BA—7 to 16 inches; dark yellowish brown (10YR  
 4/4) loam; weak thick platy structure; friable;  
 common fine roots; slightly acid; abrupt smooth  
 boundary.

Bt1—16 to 26 inches; yellowish brown (10YR 5/4) clay  
 loam; weak fine subangular blocky structure; firm;  
 common fine roots; common fine pores; few faint  
 dark yellowish brown (10YR 4/4) clay films on all  
 faces of peds; moderately acid; clear smooth  
 boundary.

Bt2—26 to 30 inches; yellowish brown (10YR 5/4)  
 loam; weak fine subangular blocky structure; firm;  
 common fine roots; common fine pores; few faint  
 dark yellowish brown (10YR 4/4) clay films on all  
 faces of peds; strongly acid; clear smooth  
 boundary.

Bt3—30 to 37 inches; yellowish brown (10YR 5/4)  
 loam; weak fine subangular blocky structure; firm;  
 common fine roots; common fine pores; few faint  
 dark yellowish brown (10YR 4/4) clay films on all  
 faces of peds; strongly acid; clear smooth  
 boundary.

BC1—37 to 44 inches; yellowish brown (10YR 5/4)  
 sandy loam; weak fine subangular blocky  
 structure; firm; common fine roots; common fine  
 pores; few clay films; strongly acid; clear smooth  
 boundary.

BC2—44 to 55 inches; yellowish brown (10YR 5/4)  
 sandy loam; weak fine subangular blocky  
 structure; firm; common fine pores; few clay films;  
 1 percent clay bodies; strongly acid; gradual  
 smooth boundary.

BC3—55 to 67 inches; yellowish brown (10YR 5/4)  
 sandy loam; weak fine subangular blocky  
 structure; firm; common fine pores; few clay films;  
 common masses of oxidized iron; strongly acid.

### **Range in Characteristics**

*Ap horizon:*

Color—hue of 10YR, value of 3 or 4, and chroma of  
 2 or 3  
 Texture of the fine-earth fraction—fine sandy loam  
 or loam  
 Content of rock fragments—none  
 Reaction—strongly acid to neutral

*BA horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and  
 chroma of 3 or 4

Texture of the fine-earth fraction—sandy loam, fine sandy loam, or loam

Content of rock fragments—none

Reaction—strongly acid to slightly acid

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture of the fine-earth fraction—sandy loam, sandy clay loam, loam, or clay loam

Content of rock fragments—none

Reaction—strongly acid to slightly acid

*BC or C horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8

Texture of the fine-earth fraction—sand, sandy loam, or fine sandy loam

Content of rock fragments—none

Reaction—very strongly acid to slightly acid

## **Brussels Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderately slow

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Gravelly colluvium over gravelly residuum derived from dolostone

*Slope range:* 35 to 90 percent

*Elevation:* 620 feet

*Taxonomic classification:* Clayey-skeletal, mixed, superactive, mesic Pachic Argiudolls

*Taxadjunct features:* The Brussels soils in this survey area have argillic horizons and are Argiudolls, rather than Hapludolls, as defined for the Brussels series. This difference, however, does not affect the usefulness or behavior of the soils.

### **Typical Pedon**

Brussels gravelly silty clay loam, in an area of Brussels-Gasconade-Rock outcrop complex, 30 to 90 percent slopes, very bouldery, in a hardwood forest; 2,450 feet east and 3,500 feet north of the southwest corner of sec. 19, T. 29 N., R. 3 W.; in Shannon County; USGS Eminence, Missouri, topographic quadrangle; UTM coordinates 4,115,090 meters Northing and 649,361 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 10 inches; very dark grayish brown (10YR 3/2) gravelly silty clay loam; grayish brown (10YR 5/2)

dry; weak fine granular structure; very friable; common very fine roots; common fine tubular pores; 30 percent dolomite (dolostone) gravel; slightly alkaline; clear smooth boundary.

Bt1—10 to 22 inches; very dark grayish brown (10YR 3/2) very gravelly silty clay loam; grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure; friable; common very fine roots; common fine tubular pores; few distinct very dark gray (10YR 3/1) organic stains on faces of peds; 10 percent dolomite (dolostone) cobbles and 30 percent dolomite (dolostone) gravel; moderately alkaline; clear smooth boundary.

Bt2—22 to 35 inches; very dark grayish brown (10YR 3/2) very gravelly silty clay loam; grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure; firm; few very fine roots; common medium tubular pores; few distinct very dark gray (10YR 3/1) clay films on faces of peds; 35 percent dolomite (dolostone) gravel; moderately alkaline; clear smooth boundary.

Bt3—35 to 49 inches; 50 percent brown (10YR 4/3) and 50 percent dark grayish brown (10YR 4/2) very gravelly silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common medium tubular pores; common distinct very dark grayish brown (10YR 3/2) clay films on faces of peds; 35 percent dolomite (dolostone) gravel; moderately alkaline; clear wavy boundary.

2Bt4—49 to 60 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; few fine tubular pores; common distinct dark brown (10YR 3/3) clay films on faces of peds and few prominent very dark gray (10YR 3/1) clay films in root channels and/or pores; 10 percent dolomite (dolostone) cobbles; moderately alkaline; clear wavy boundary.

2Bt5—60 to 70 inches; brown (10YR 4/3) gravelly silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; few fine tubular pores; common distinct dark brown (10YR 3/3) clay films on faces of peds; 25 percent dolomite (dolostone) gravel; slightly alkaline.

### **Range in Characteristics**

*Thickness of the mollic epipedon:* 20 to 40 inches

*Depth to bedrock:* More than 60 inches

*A horizon:*

Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2

Texture of the fine-earth fraction—silty clay loam

Content of rock fragments—15 to 35 percent

Reaction—slightly acid to slightly alkaline

**Bt horizon:**

Color—hue of 10YR or 7.5YR, value of 3, and chroma of 2 or 3

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments—35 to 60 percent

Reaction—slightly acid to moderately alkaline

**2Bt horizon:**

Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 to 6

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments—7 to 35 percent

Reaction—slightly acid to moderately alkaline

**Bucklick Series**

**Depth class:** Deep or very deep (40 to 60 or more inches)

**Drainage class:** Well drained

**Permeability:** Moderate

**Landform:** Hillslopes

**Position on the landform:** Summits, shoulders, and backslopes

**Parent material:** Loess and the underlying clayey materials or residuum from dolostone

**Slope range:** Moderately sloping to steep (3 to 25 percent)

**Elevation:** 615 feet

**Taxonomic classification:** Fine, mixed, active, mesic Typic Hapludalfs

**Typical Pedon**

Bucklick silt loam, in an area of Caneyville-Bucklick complex, 3 to 8 percent slopes, in a pasture; 880 feet south and 1,350 feet west of the northeast corner of sec. 17, T. 32 N., R. 8 E.; in Madison County; USGS Marquand topographic quadrangle; UTM coordinates 4,149,727 meters Northing and 748,900 meters Easting, Zone 15, NAD 27.

Ap—0 to 5 inches; brown (10YR 4/3) silt loam, yellowish brown (10YR 5/4) dry; weak very fine subangular blocky structure parting to weak very fine granular; friable; many very fine and fine roots; 2 percent chert gravel; neutral; abrupt smooth boundary.

Bt1—5 to 11 inches; brown (7.5YR 5/4) silty clay loam; moderate very fine subangular blocky structure; friable; many very fine and fine roots; many distinct clay films; 1 percent subrounded chert gravel; neutral; clear smooth boundary.

Bt2—11 to 15 inches; yellowish red (5YR 4/6) silty clay; moderate fine subangular blocky structure; friable; few very fine roots; many distinct clay

films; 1 percent subrounded chert gravel; neutral; clear smooth boundary.

Bt3—15 to 22 inches; reddish brown (5YR 4/4) clay; weak coarse subangular blocky and moderate very fine and fine subangular blocky structure; friable; few very fine roots; many distinct clay films and few prominent manganese or iron-manganese stains; few fine iron-manganese concretions; 2 percent subrounded chert gravel; neutral; clear smooth boundary.

Bt4—22 to 30 inches; yellowish red (5YR 4/6) and yellowish red (5YR 5/6) clay; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; common prominent clay films and common distinct clay films and few prominent manganese or iron-manganese stains; few fine iron-manganese concretions; 1 percent subrounded chert gravel; neutral; clear smooth boundary.

2Bt5—30 to 38 inches; yellowish red (5YR 4/6) and brown (7.5YR 4/4) clay; weak coarse subangular blocky and moderate fine subangular blocky structure; firm; few very fine roots; many prominent clay films and few distinct manganese or iron-manganese stains; few fine iron-manganese concretions; 1 percent chert gravel; neutral; clear smooth boundary.

2Bt6—38 to 46 inches; brown (7.5YR 4/4) clay; moderate medium subangular blocky structure; firm; few very fine roots; many prominent clay films and few distinct manganese or iron-manganese stains; 2 percent chert gravel; neutral; abrupt smooth boundary.

2R—46 inches; dolostone.

**Range in Characteristics**

**Depth to bedrock:** 40 to 60 inches or more

**Ap or A horizon:**

Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 7 percent

Reaction—moderately acid to neutral

**E horizon (if it occurs):**

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 7 percent

Reaction—moderately acid to neutral

**Bt horizon:**

Color—hue of 10YR to 2.5YR, value of 3 to 5, and chroma of 4 to 8

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments—0 to 7 percent

Reaction—moderately acid to neutral

**2Bt horizon:**

Color—hue of 7.5YR to 2.5YR, value of 4 or 5, and chroma of 4 to 8

Texture of the fine-earth fraction—silty clay or clay

Content of rock fragments—0 to 25 percent

Reaction—moderately acid to neutral

## Calhoun Series

*Depth class:* Very deep

*Drainage class:* Poorly drained

*Permeability:* Slow

*Landform:* Lowlands

*Position on the landform:* Stream terraces and flood plains

*Parent material:* Silty alluvium

*Slope range:* 0 to 1 percent

*Elevation:* 350 feet

*Taxonomic classification:* Fine-silty, mixed, active, thermic Typic Glossaqualfs

### Typical Pedon

Calhoun silt loam, 0 to 1 percent slopes, in a cultivated field; 3,100 feet south and 2,000 feet east of the northwest corner of sec. 19, T. 28 N., R. 9 E.; in Bollinger County; USGS Sturdivant, Missouri, topographic quadrangle; UTM coordinates 4,107,060 meters Northing and 757,495 meters Easting, Zone 15, NAD27.

Ap—0 to 9 inches; dark brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron; few fine distinct black (10YR 2/1) iron-manganese concretions; neutral; abrupt wavy boundary.

Eg—9 to 24 inches; light gray (10YR 7/1) silt loam; weak, fine subangular blocky structure; firm; few very fine and fine roots; common fine vesicular pores; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; common fine prominent black (10YR 2/1) iron-manganese concretions; strongly acid; gradual smooth boundary.

Btg/Eg—24 to 36 inches; (Btg) light brownish gray (10YR 6/2) silt loam; moderate medium prismatic structure; firm; few very fine roots; common fine tubular pores; (Eg) light gray (10YR 7/1) silt in

1/2- to 2-inch-wide tongues extend to the lower boundary of the horizon making about 15 percent of the horizon; common faint grayish brown (10YR 5/2) clay films; common fine prominent black (10YR 2/1) iron-manganese concretions; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Btg1—36 to 42 inches; grayish brown (10YR 5/2) silt loam; moderate medium prismatic structure; firm; few very fine roots; many fine tubular pores; few faint grayish brown (10YR 5/2) clay films and few distinct light gray (10YR 7/1) silt coats on all faces of peds; many fine faint light brownish gray (10YR 6/2) iron depletions; many fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; many fine prominent black (10YR 2/1) iron-manganese masses; strongly acid; gradual smooth boundary.

Btg2—42 to 60 inches; light brownish gray (10YR 6/2) silt loam; moderate medium prismatic structure; firm; many fine tubular pores; many faint gray (10YR 5/1) clay films and few faint light gray (10YR 7/1) silt coats; many fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; many fine prominent black (10YR 2/1) iron-manganese masses; neutral; gradual smooth boundary.

Btg3—60 to 76 inches; 60 percent light brownish gray (10YR 6/2) and 40 percent yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure; firm; many fine tubular pores; many faint gray (10YR 5/1) clay films and few faint light gray (10YR 7/1) silt coats on all faces of peds; common fine prominent yellowish red (5YR 5/6) masses of oxidized iron; common fine prominent black (10YR 2/1) iron-manganese masses; neutral; gradual smooth boundary.

BC—76 to 83 inches; 70 percent dark yellowish brown (10YR 4/4) and 30 percent light brownish gray (10YR 6/2) silt loam; moderate fine subangular blocky structure; firm; many fine tubular pores; very few faint yellowish brown (10YR 5/4) clay films; few fine prominent black (10YR 2/1) iron-manganese masses; neutral.

### Range in Characteristics

*Thickness of the solum:* 40 to 80 inches

*A horizon:*

Color—hue of 10YR, value of 4 to 6, and chroma of 1 to 3

Texture of the fine-earth fraction—silt loam

Reaction—extremely acid to moderately acid, unless limed

*Eg horizon or Eg part of the Btg/Eg horizon:*

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Texture of the fine-earth fraction—silt loam

Reaction—extremely acid to moderately acid

*Btg horizon or Btg part of the Btg/Eg horizon:*

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Texture of the fine-earth fraction—silt loam or silty clay loam

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Reaction—extremely acid to strongly acid (ranges to slightly alkaline in the lower part of some pedons)

*BC or Cg horizon:*

Color—hue of 10YR, 2.5Y, or 5Y; value of 5 or 6; and chroma of 1 to 4

Texture of the fine-earth fraction—silt loam

Reaction—extremely acid to mildly alkaline

**Caneyville Series**

*Depth class:* Moderately deep (20 to 40 inches)

*Drainage class:* Well drained

*Permeability:* Slow

*Landform:* Hillslopes

*Position on the landform:* Summits, shoulders, or backslopes

*Parent material:* Residuum from dolostone

*Slope range:* Moderately sloping to steep (3 to 25 percent)

*Elevation:* 535 feet

*Taxonomic classification:* Fine, mixed, active, mesic Typic Hapludalfs

**Typical Pedon**

Caneyville silt loam, in an area of Caneyville-Bucklick complex, 8 to 15 percent slopes, rocky, in a forest; 1,050 feet south and 1,900 feet west of the northeast corner of sec. 33, T. 31 N., R. 5 E.; in Madison County; USGS Coldwater topographic quadrangle; UTM coordinates 4,134,025 meters Northing and 721,529 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 4 inches; brown (7.5YR 4/4) silt loam, pale brown (10YR 6/3) dry; moderate very fine granular structure; friable; many very fine to fine roots and common medium; 7 percent subrounded chert gravel; moderately acid; clear wavy boundary.

BA—4 to 8 inches; reddish brown (5YR 4/4) silt loam;

moderate very fine subangular blocky structure; friable; common very fine to fine roots and few medium roots; common distinct clay films; 5 percent subrounded chert gravel; strongly acid; clear wavy boundary.

Bt1—8 to 18 inches; reddish brown (2.5YR 4/4) clay; moderate very fine subangular blocky structure; firm; few very fine to fine roots and few medium roots; many distinct clay films; 1 percent subrounded chert gravel; strongly acid; clear smooth boundary.

Bt2—18 to 25 inches; red (2.5YR 4/6) clay; moderate very fine and fine subangular blocky structure; firm; few very fine and fine roots; many prominent clay films; common medium black (10YR 2/1) masses of iron-manganese accumulation; moderately acid; clear smooth boundary.

Bt3—25 to 30 inches; reddish brown (5YR 4/4) clay; common medium prominent olive mottles; moderate fine subangular blocky structure; firm; few fine roots; few nonintersecting slickensides and many prominent clay films; slightly acid; abrupt smooth boundary.

R—30 inches; dolostone bedrock.

**Range in Characteristics**

*Depth to bedrock:* 20 to 40 inches

*A or Ap horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 6, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 7 percent

Reaction—very strongly acid to moderately acid

*E, BA, or BE horizon (if it occurs):*

Color—hue of 10YR to 5YR, value of 5 or 6, and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 7 percent

Reaction—very strongly acid to neutral

*Bt horizon (upper part):*

Color—hue of 10YR to 2.5YR, value of 4 to 6, and chroma of 4 to 8

Mottles—shades of red, brown, or yellow

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments—0 to 7 percent

Reaction—strongly acid to slightly alkaline

*Bt horizon (lower part):*

Color—hue of 10YR to 2.5YR, value of 4 to 6, and chroma of 4 to 8

Mottles—shades of red, brown, yellow, or gray

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments—0 to 7 percent

Reaction—moderately acid to slightly alkaline

*C or BC horizon (if it occurs):*

Color—multicolored in shades of red, brown, yellow, olive, or gray

Texture of the fine-earth fraction—silty clay, clay, loam, or clay loam

Content of rock fragments—0 to 35 percent

Reaction—slightly acid to slightly alkaline

## **Captina Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate in the upper subsoil and slow in the fragipan

*Landform:* Ridges

*Position on the landform:* Summits and backslopes

*Parent material:* Loess over loamy colluvium and residuum derived from dolostone

*Slope range:* 3 to 15 percent

*Elevation:* 780 feet

*Taxonomic classification:* Fine-silty, siliceous, active, mesic Typic Fragiudults

### **Typical Pedon**

Captina silt loam, 3 to 8 percent slopes, eroded, in a pasture; 1,700 feet north and 750 feet east of the southwest corner of sec. 33, T. 32 N., R. 5 E.; USGS Hurricane, Missouri, topographic quadrangle; UTM coordinates 4,144,137 meters Northing and 759,673 meters Easting, Zone 15, NAD27.

Ap—0 to 4 inches; brown (10YR 4/3) silt loam; moderate fine subangular blocky structure; friable; 1 percent chert gravel; moderately acid; abrupt wavy boundary.

Bt1—4 to 12 inches; strong brown (7.5YR 4/6) silty clay loam; moderate fine subangular blocky structure; firm; common distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; very strongly acid; clear smooth boundary.

Bt2—12 to 16 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate fine subangular blocky structure; firm; common distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; 1 percent gravel; very strongly acid; clear smooth boundary.

Bt3—16 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; common faint dark yellowish brown (10YR 4/4) clay films on all faces of peds; many

light brownish gray (10YR 6/2) iron depletions; common strong brown (7.5YR 5/8) masses of oxidized iron; 5 percent chert gravel; very strongly acid; abrupt smooth boundary.

2Btx—20 to 28 inches; light yellowish brown (10YR 6/4) extremely gravelly silt loam; moderate very coarse prismatic structure; very firm; 80 percent brittle; few distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; common light brownish gray (10YR 6/2) iron depletions; common strong brown (7.5YR 5/8) masses of oxidized iron; 60 percent chert gravel; very strongly acid; clear wavy boundary.

3Bt1—28 to 36 inches; brownish yellow (10YR 6/6) gravelly silty clay; moderate medium subangular blocky structure; very firm; few distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; 15 percent chert gravel; very strongly acid; diffuse broken boundary.

3Bt2—36 to 55 inches; brownish yellow (10YR 6/8) gravelly clay; moderate fine subangular blocky structure; very firm; common distinct yellowish brown (10YR 5/6) clay films; 15 percent chert gravel; very strongly acid; diffuse broken boundary.

3Bt3—55 to 75 inches; 60 percent brownish yellow (10YR 6/8) and 40 percent red (2.5YR 4/8) gravelly clay; weak fine angular blocky structure; very firm; few faint (10YR 5/6) clay films on upper faces of peds; 10 percent chert cobbles and 20 percent chert gravel; strongly acid.

### **Range in Characteristics**

*Depth to the fragipan:* 20 to 38 inches

*Ap or A horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 5 percent

Reaction—very strongly acid to slightly acid, unless limed

*E or BE horizon (if it occurs):*

Color—hue of 10YR, value of 5 or 6, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Reaction—very strongly acid to slightly acid, unless limed

*Bt horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8

Redoximorphic features—iron segregations in shades of brown or red in the lower part of some pedons

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 5 percent

Reaction—very strongly acid or strongly acid

**2Btx horizon:**

Color—hue of 10YR to 5YR, value of 4 to 6, and chroma of 4 to 8

Redoximorphic features—iron segregations in shades of gray or red

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 35 percent (upper part); 0 to 60 percent (lower part)

Reaction—extremely acid to strongly acid

**3Bt horizon:**

Color—hue 10YR to 2.5YR, value of 3 to 6, and chroma 4 to 8 (or is multicolored)

Texture of the fine-earth fraction—clay loam, silty clay loam, silty clay, or clay

Content of rock fragments—15 to 50 percent (extremely variable over short distances)

Reaction—extremely acid to strongly acid

## Clarksville Series

*Depth class:* Very deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderate

*Landform:* Hillslopes

*Position on the landform:* Backslopes and summits

*Parent material:* Gravelly colluvium derived from cherty dolostone

*Slope range:* 8 to 45 percent

*Elevation:* 530 feet

*Taxonomic classification:* Loamy-skeletal, siliceous, semiactive, mesic Typic Paleudults

### Typical Pedon

Clarksville gravelly silt loam, in an area of Clarksville-Scholten complex, 15 to 45 percent slopes, very stony, in a forest; 1,600 feet south and 1,300 feet west of the northeast corner of sec. 10, T. 32 N., R. 8 E.; in Madison County; USGS Marquand topographic quadrangle; UTM coordinates 4,151,335 meters Northing and 752,098 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed leaves, twigs, and roots; abrupt wavy boundary.

A—1 to 6 inches; brown (10YR 4/3) gravelly silt loam, light gray (10YR 7/2) dry; moderate very fine and fine granular structure; very friable; many very fine to medium roots; 4 percent chert cobbles and 30

percent subangular chert gravel; extremely acid; abrupt wavy boundary.

E—6 to 13 inches; yellowish brown (10YR 5/4) gravelly silt loam, very pale brown (10YR 7/3) dry; weak fine subangular blocky structure parting to weak very fine granular; very friable; many fine to coarse roots; 1 percent chert cobbles and 32 percent subangular chert gravel; very strongly acid; abrupt wavy boundary.

Bt1—13 to 21 inches; light yellowish brown (10YR 6/4) very gravelly silt loam, very pale brown (10YR 7/3) dry; weak fine subangular blocky structure parting to moderate very fine granular; friable; common very fine to coarse roots; 10 percent angular chert cobbles and 36 percent subangular chert gravel; very strongly acid; clear wavy boundary.

2Bt2—21 to 29 inches; strong brown (7.5YR 4/6) extremely gravelly clay loam; common fine distinct yellowish red (5YR 4/6) mottles; moderate fine subangular blocky structure; firm; common fine and medium roots; common prominent clay films on vertical faces of peds and common distinct silt coats on faces of peds; common fine light brown (7.5YR 6/4) and common fine yellowish red (5YR 4/6); 65 percent subangular chert gravel; strongly acid; clear wavy boundary.

2Bt3—29 to 43 inches; reddish yellow (7.5YR 6/6) very gravelly clay loam; common fine and medium prominent red (2.5YR 4/6) and common fine prominent brownish yellow (10YR 6/6) mottles; moderate very fine and fine subangular blocky structure; firm; few very fine and fine roots; common distinct silt coats on faces of peds and common prominent clay films on faces of peds; 3 percent chert cobbles and 39 percent subangular chert gravel; very strongly acid; abrupt wavy boundary.

3Bt4—43 to 56 inches; strong brown (7.5YR 5/6) very gravelly clay; many fine and medium prominent red (2.5YR 4/6) and many fine distinct light brown (7.5YR 6/4) mottles; moderate very fine and fine subangular blocky structure; firm; few very fine to medium roots; many prominent clay films on faces of peds and on vertical faces of peds; few medium light gray (10YR 7/2) clay bodies; 36 percent subangular chert gravel and 1 percent chert cobbles; strongly acid; clear wavy boundary.

3Bt5—56 to 66 inches; 60 percent red (2.5YR 4/6) and 40 percent strong brown (7.5YR 5/6) very gravelly clay; moderate fine subangular blocky structure; firm; few very fine to medium roots; common prominent clay films on faces of peds; common medium light gray (10YR 7/2) clay bodies and many coarse pinkish gray (7.5YR 7/2) soft iron

depletions pedogenic between peds; 38 percent subangular chert gravel; very strongly acid.

### Range in Characteristics

*Depth to the 3Bt horizon:* 36 to 54 inches

*Depth to bedrock:* More than 60 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 2 to 6, and chroma of 1 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—15 to 35 percent

Reaction—extremely acid to moderately acid

*E horizon:*

Color—hue of 10YR, value of 4 to 7, and chroma of 2 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—20 to 50 percent

Reaction—extremely acid to moderately acid

*Bt horizon:*

Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 6

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—20 to 50 percent

Reaction—very strongly acid or strongly acid

*2Bt horizon:*

Color—hue of 2.5YR to 10YR, value of 3 to 6, and chroma of 4 to 6

Texture of the fine-earth fraction—loam, clay loam, or silty clay loam

Content of rock fragments—35 to 75 percent

Reaction—very strongly acid or strongly acid

*3Bt horizon:*

Color—hue of 2.5YR to 10YR, value of 3 to 6, and chroma of 4 to 6

Texture of the fine-earth fraction—clay

Content of rock fragments—7 to 60 percent

Reaction—very strongly acid or strongly acid

## Cornwall Series

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow

*Landform:* Hillslopes

*Position on the landform:* Footslopes

*Parent material:* Loess over valley fill materials

*Slope range:* 3 to 15 percent

*Elevation:* 410 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Fragiaquic Paleudults

### Typical Pedon

Cornwall silt loam, 3 to 8 percent slopes, in a cultivated field; 1,950 feet west and 2,700 feet north of the southeast corner of sec. 26, T. 29 N., R. 5 E.; in Wayne County; USGS Greenville, Missouri, topographic quadrangle; UTM coordinates 4,115,194 meters Northing and 724,986 meters Easting, Zone 15, NAD27.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam; moderate fine and medium subangular blocky structure; friable; moderately acid; abrupt broken boundary.

Bt1—7 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; few faint clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—12 to 18 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt3—18 to 24 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid; gradual smooth boundary.

2Btx1—24 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to weak fine and medium subangular blocky; firm; 35 percent brittle; few faint clay films on faces of peds; many light brownish gray (10YR 6/2) iron depletions; common strong brown (7.5YR 5/8) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; very strongly acid; gradual smooth boundary.

2Btx2—34 to 44 inches; yellowish brown (10YR 5/4) silt loam; weak medium and coarse prismatic structure parting to weak very fine and fine subangular blocky; firm; 50 percent brittle; common distinct clay films on faces of peds; common light brownish gray (10YR 6/2) iron depletions; common red (2.5YR 4/6) masses of oxidized iron; very strongly acid; gradual broken boundary.

3Bt1—44 to 52 inches; 70 percent yellowish red (5YR 4/6) and 30 percent red (2.5YR 4/6) silty clay loam; moderate medium and coarse prismatic structure parting to moderate very fine and fine subangular blocky; very firm; common black (10YR 2/1) iron-manganese masses; common light brownish gray (10YR 6/2) iron depletions; 10

percent chert gravel; very strongly acid; diffuse broken boundary.

3Bt2—52 to 75 inches; red (2.5YR 4/6) silty clay loam; strong medium and coarse prismatic structure parting to strong very fine and fine angular blocky; very firm; common light brownish gray (10YR 6/2) silt coats; 10 percent chert gravel; very strongly acid.

#### Range in Characteristics

*Depth to the 2Btx horizon:* 17 to 35 inches

*Depth to the 3Bt horizon:* 39 to 59 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 10 percent gravel

Reaction—strongly acid to moderately acid, unless limed

*E horizon (if it occurs):*

Color—hue of 10YR, value of 4 to 6, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 10 percent gravel

Reaction—strongly acid to moderately acid

*Bt horizon:*

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 10 percent gravel

Reaction—very strongly acid or strongly acid

*2Btx horizon:*

Color—hue of 10YR to 2.5YR, value of 4 or 5, and chroma of 4 to 6

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 60 percent gravel; 0 to 10 percent cobbles

Reaction—very strongly acid or strongly acid

*3Bt horizon:*

Color—hue of 7.5YR to 2.5YR, value of 3 to 5, and chroma of 6 to 8

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—clay loam, silty clay loam, or clay

Content of rock fragments—10 to 70 percent gravel; 0 to 15 percent cobbles

Reaction—very strongly acid or strongly acid

## Coulstone Series

*Depth class:* Very deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderately rapid

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Colluvium and residuum from sandstone with lenses of cherty dolostone

*Slope range:* 15 to 50 percent

*Elevation:* 1,080 feet

*Taxonomic classification:* Loamy-skeletal, siliceous, semiactive, mesic Typic Paleudults

### Typical Pedon

Coulstone extremely cobbly sandy loam, in an area of Coulstone-Bender complex, 15 to 50 percent slopes, very stony, in a hardwood forest; 2,400 feet west and 2,500 feet north of the southeast corner of sec. 32, T. 28 N., R. 3 W.; in Shannon County; USGS Winona, Missouri, topographic quadrangle; UTM coordinates 4,101,817 meters Northing and 651,284 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 4 inches; light brownish gray (10YR 5/2) extremely cobbly sandy loam; weak fine granular structure; very friable; many fine to coarse roots; many fine to coarse tubular pores; 30 percent sandstone cobbles and 35 percent chert gravel; very strongly acid; clear smooth boundary.

E1—4 to 11 inches; pale brown (10YR 6/3) very gravelly fine sandy loam; weak very fine and fine granular structure; very friable; many fine to coarse roots; many fine tubular pores; 20 percent sandstone gravel and 15 percent chert gravel; strongly acid; clear wavy boundary.

E2—11 to 15 inches; light yellowish brown (10YR 6/4) extremely cobbly fine sandy loam; weak very fine and fine subangular blocky structure; very friable; many fine to medium roots and common coarse roots; many fine tubular pores; 35 percent sandstone gravel and 30 percent sandstone cobbles; strongly acid; clear wavy boundary.

E3—15 to 19 inches; strong brown (7.5YR 5/4) extremely cobbly loam; moderate very fine and fine subangular blocky structure; very friable; many fine to medium roots and common coarse roots; many fine tubular pores; 35 percent sandstone gravel

and 30 percent sandstone cobbles; strongly acid; clear wavy boundary.

**Bt1**—19 to 32 inches; strong brown (7.5YR 5/6) very cobbly loam; moderate very fine and fine subangular blocky structure; friable; many very fine and fine roots; many fine tubular pores; few faint strong brown (7.5YR 4/6) clay films on faces of peds; 20 percent sandstone cobbles and 35 percent chert gravel; very strongly acid; clear smooth boundary.

**Bt2**—32 to 46 inches; strong brown (7.5YR 5/6) very cobbly loam; moderate very fine and fine subangular blocky structure; firm; common very fine and fine roots; common fine tubular pores; common distinct light gray (10YR 7/2) silt coats and common distinct red (2.5YR 4/6) clay films on faces of peds; 35 percent sandstone gravel and 20 percent sandstone cobbles; very strongly acid; clear smooth boundary.

**2Bt3**—46 to 56 inches; 80 percent yellowish red (5YR 5/8) and 20 percent red (2.5YR 4/8) sandy clay loam; moderate very fine and fine subangular blocky structure; very firm; common very fine and fine roots; common fine tubular pores; common distinct red (2.5YR 4/6) clay films on faces of peds; 7 percent chert gravel; very strongly acid; clear wavy boundary.

**2Bt4**—56 to 80 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky and moderate fine subangular blocky structure; very firm; common very fine and fine roots; common fine tubular pores; common distinct dark reddish brown (2.5YR 3/4) clay films, common distinct reddish yellow (7.5YR 6/8) clay films, and few distinct reddish brown (5YR 5/4) clay films on faces of peds; 5 percent chert gravel; very strongly acid.

#### **Range in Characteristics**

*Depth to the 2Bt horizon:* 30 to 60 inches

*Depth to bedrock:* More than 60 inches

#### *A horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 1 to 4

Texture of the fine-earth fraction—sandy loam

Content of rock fragments—0 to 40 percent cobbles or stones; 35 to 60 percent gravel

Reaction—very strongly acid to moderately acid

#### *E horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 to 4

Texture of the fine-earth fraction—loam, sandy loam, fine sandy loam, or silt loam

Content of rock fragments—0 to 40 percent cobbles or stones; 35 to 60 percent gravel

Reaction—very strongly acid to moderately acid

#### *Bt horizon:*

Color—hue of 5YR, 7.5YR, or 10YR; value of 3 to 7; and chroma of 3 to 6

Texture of the fine-earth fraction—sandy loam or loam

Content of rock fragments—0 to 40 percent cobbles or stones; 35 to 60 percent gravel

Reaction—very strongly acid to moderately acid

#### *2Bt horizon:*

Color—hue of 10R, 2.5YR, or 5YR; value of 4 to 6; and chroma of 4 to 8

Texture of the fine-earth fraction—sandy clay loam, loam, or clay

Content of rock fragments—0 to 30 percent cobbles or stones; 5 to 60 percent gravel

Reaction—extremely acid to strongly acid

#### *3Bt horizon:*

Color—hue of 10R, 2.5YR, or 5YR; value of 4 to 6; and chroma of 4 to 8

Texture of the fine-earth fraction—sandy loam, sandy clay loam, clay loam, or clay

Content of rock fragments—0 to 30 percent cobbles or stones; 5 to 60 percent gravel

Reaction—extremely acid to strongly acid

## **Crider Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* Basins

*Position on the landform:* Summits

*Parent material:* Loess over clayey residuum derived from dolostone

*Slope range:* 3 to 8 percent

*Elevation:* 440 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Typic Paleudalfs

#### **Typical Pedon**

Crider silt loam, 3 to 8 percent slopes, eroded, in a cultivated field; 1,200 feet south of the junction of Highways 34 and 143, sec. 18 T. 29 N., R. 5 E.; in Wayne County; USGS Patterson, Missouri, topographic quadrangle; UTM coordinates 4,117,900 meters Northing and 719,200 meters Easting, Zone 15, NAD27.

**Ap**—0 to 9 inches; dark brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4), dry; weak fine

granular structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

Bt1—9 to 18 inches; reddish brown (5YR 4/4) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; common faint clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—18 to 24 inches; reddish brown (5YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; common faint clay films on faces of peds; neutral; gradual smooth boundary.

Bt3—24 to 32 inches; yellowish red (5YR 4/6) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; firm; common faint clay films on faces of peds and few manganese or iron-manganese stains; slightly acid; gradual smooth boundary.

2Bt4—32 to 47 inches; dark red (2.5YR 3/6) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; firm; common faint clay films on faces of peds and common manganese or iron-manganese stains; strongly acid; gradual smooth boundary.

2Bt5—47 to 80 inches; dark red (2.5YR 3/6) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; many manganese or iron-manganese stains and common faint clay films on faces of peds; strongly acid.

### Range in Characteristics

*Depth to bedrock:* More than 60 inches

#### *Ap horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Reaction—strongly acid to neutral

#### *Bt horizon:*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 or 5; and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Reaction—strongly acid to neutral

#### *2Bt or 3Bt horizon:*

Color—hue of 5YR to 10R, value of 3 to 5, and chroma of 4 to 8

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Redoximorphic features—iron segregations in shades of red, brown, or yellow

Content of rock fragments—0 to 10 percent

Reaction—strongly acid or moderately acid

## Crowley Series

*Depth class:* Very deep

*Drainage class:* Poorly drained

*Permeability:* Very slow

*Landform:* Lowlands

*Position on the landform:* Stream terraces

*Parent material:* Silty alluvium

*Slope range:* 0 to 1 percent

*Elevation:* 340 feet

*Taxonomic classification:* Fine, smectitic, thermic

Typic Albaqualfs

*Taxadjunct features:* The Crowley soils in this survey area are thermic, rather than hyperthermic as defined for the Crowley series. Crowley soils are also mapped in Stoddard County. The Crowley series has been reclassified since the publication of the Soil Survey of Stoddard County, Missouri.

### Typical Pedon

Crowley silt loam, 0 to 1 percent slopes, in a cultivated field; 450 feet north and 550 feet west of the southeast corner of sec. 35, T. 28 N., R. 9 E.; USGS Sturdivant, Missouri, topographic quadrangle; UTM coordinates 4,103,440 meters Northing and 765,420 meters Easting, Zone 15, NAD27.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; few strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; abrupt wavy boundary.

Eg—9 to 16 inches; light brownish gray (2.5Y 6/2) silt loam; moderate fine subangular blocky structure; friable; common light gray (10YR 7/2) silt coats; few strong brown (7.5YR 5/6) masses of oxidized iron; black (10YR 2/1) iron-manganese concretions; slightly acid; abrupt smooth boundary.

Bt1—16 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common faint gray (10YR 5/1) clay films on all faces of peds; few strong brown (7.5YR 5/6) masses of oxidized iron; few black (10YR 2/1) iron-manganese masses; very strongly acid; gradual smooth boundary.

Bt2—29 to 39 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few faint dark yellowish brown (10YR 4/4) clay films on all faces of peds; common strong brown (7.5YR 4/6) masses of oxidized iron; few black (10YR 2/1) iron-manganese masses; strongly acid; gradual smooth boundary.

2BC—39 to 56 inches; grayish brown (10YR 5/2) silt loam; weak very fine and fine subangular blocky

structure; friable; common strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; gradual smooth boundary.

3C1—56 to 71 inches; yellowish brown (10YR 5/4) loamy sand; weak very fine and fine subangular blocky structure; friable; common brown (7.5YR 4/4) masses of oxidized iron; moderately acid; gradual smooth boundary.

3C2—71 to 80 inches; brown (10YR 5/3) sand; single grain; loose; common dark yellowish brown (10YR 4/4) masses of oxidized iron; slightly acid.

### Range in Characteristics

#### A horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 1 to 3

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—strongly acid to neutral

#### Eg horizon:

Color—hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 1 to 3

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam or silt

Content of rock fragments—none

Reaction—strongly acid to slightly acid

#### Bt horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments—none

Reaction—very strongly acid to neutral

#### 2BC horizon:

Color—hue of 10YR, 2.5Y, or 5Y; value of 5 or 6; and chroma of 3

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—none

Reaction—very strongly acid to neutral

#### 3C horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 to 4

Redoximorphic features—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

Texture of the fine-earth fraction—sand or loamy sand

Content of rock fragments—none

Reaction—very strongly acid to neutral

## Deible Series

*Depth class:* Very deep

*Drainage class:* Poorly drained

*Permeability:* Very slow

*Landform:* River valleys

*Position on the landform:* High stream terraces

*Parent material:* Loess over alluvium

*Slope range:* 1 to 3 percent

*Elevation:* 400 feet

*Taxonomic classification:* Fine, mixed, active, mesic Typic Albaqualfs

### Typical Pedon

Deible silt loam, 1 to 3 percent slopes, in a cultivated field; 2,150 feet east and 250 feet south of the northwest corner of sec. 19, T. 27 N., R. 6 E.; in Wayne County; USGS Hendrickson, Missouri, topographic quadrangle; UTM coordinates 4,095,981 meters Northing and 726,723 meters Easting, Zone 15, NAD27.

Ap—0 to 6 inches; brown (10YR 5/3) silt loam; moderate fine granular structure; friable; many very fine and fine roots; many very fine and fine vesicular pores; 1 percent subangular chert gravel; moderately acid; clear smooth boundary.

E1—6 to 10 inches; yellowish brown (10YR 5/3) silt loam; weak very fine subangular blocky structure; friable; many very fine and fine roots; many very fine and fine vesicular pores; common black (10YR 2/1) iron-manganese masses; 1 percent subangular chert gravel; strongly acid; clear smooth boundary.

E2—10 to 16 inches; 50 percent yellowish brown (10YR 5/3) and 50 percent light yellowish brown (10YR 6/4) silt loam; moderate very fine and fine subangular blocky structure; firm; common very fine and fine roots; many very fine vesicular pores; many light gray (10YR 7/2) iron depletions;

common iron-manganese masses; 1 percent subangular chert gravel; moderately acid; abrupt smooth boundary.

**Btg1**—16 to 23 inches; 60 percent grayish brown (10YR 5/2) and 40 percent gray (10YR 5/1) silty clay; moderate fine angular blocky structure; firm; few very fine roots; many very fine vesicular pores; common distinct clay films on faces of peds; common strong brown (7.5YR 4/6) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; 2 percent subangular chert gravel; neutral; gradual smooth boundary.

**Btg2**—23 to 33 inches; 80 percent gray (10YR 5/1) and 20 percent grayish brown (10YR 5/2) silty clay loam; moderate very fine and fine angular blocky structure; firm; few very fine roots; common very fine vesicular pores; common distinct clay films on faces of peds; many strong brown (7.5YR 4/6) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; 3 percent subangular chert gravel; slightly alkaline; gradual smooth boundary.

**2Btg3**—33 to 50 inches; 65 percent dark yellowish brown (10YR 4/4) and 35 percent gray (10YR 6/1) silty clay loam; moderate very fine and fine angular blocky structure; firm; common very fine vesicular pores; few faint clay films on faces of peds; common yellowish red (5YR 5/8) masses of oxidized iron; 10 percent subangular chert gravel; slightly alkaline; gradual smooth boundary.

**2Btg4**—50 to 68 inches; 40 percent gray (10YR 6/1) and 30 percent yellowish brown (10YR 5/4) and 30 percent yellowish brown (10YR 5/6) silty clay loam; moderate very fine and fine subangular blocky structure; firm; many very fine vesicular pores; few faint clay films on faces of peds; common black (10YR 2/1) iron-manganese masses; 10 percent subangular chert gravel; slightly alkaline; gradual smooth boundary.

**2Btg5**—68 to 80 inches; 60 percent strong brown (7.5YR 4/6) and 40 percent gray (10YR 6/1) clay loam; moderate very fine and fine subangular blocky structure; firm; many very fine vesicular pores; few faint clay films on faces of peds; common red (2.5YR 4/8) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; 15 percent subangular chert gravel; moderately alkaline.

#### Range in Characteristics

*Thickness of the solum:* 30 to 60 inches or more

*Depth to the Btg horizon:* 13 to 22 inches

*Depth to the 2Btg horizon:* 30 to 40 inches

#### *A or Ap horizon:*

*Color*—hue of 10YR, value of 4 or 5, and chroma of 2 or 3

*Redoximorphic features*—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

*Texture of the fine-earth fraction*—silt loam

*Content of rock fragments*—0 to 10 percent gravel

*Reaction*—strongly acid to neutral

#### *E or BE horizon:*

*Color*—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 or 3

*Redoximorphic features*—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

*Texture of the fine-earth fraction*—silt loam

*Content of rock fragments*—0 to 15 percent gravel

*Reaction*—very strongly acid to neutral

#### *Btg horizon:*

*Color*—hue of 7.5YR, 10YR, or 2.5Y; value of 4 to 6; and chroma of 1 or 2

*Redoximorphic features*—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

*Texture of the fine-earth fraction*—silty clay loam or silty clay

*Content of rock fragments*—0 to 3 percent gravel

*Reaction*—very strongly acid to slightly alkaline

#### *2Btg or 2BCg horizon:*

*Color*—hue of 7.5YR, 10YR, 2.5Y, 5Y, or N; value of 4 to 6; and chroma of 0 to 6

*Redoximorphic features*—iron segregations in shades of brown, gray, or yellow; iron-manganese accumulations

*Texture of the fine-earth fraction*—silt loam, silty clay loam, or clay loam

*Content of rock fragments*—0 to 15 percent gravel

*Reaction*—strongly acid to moderately alkaline

## ***Delassus Series***

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate in the upper part and very slow in the fragipan

*Landform:* Mountains

*Position on the landform:* Summits and footslopes

*Parent material:* Loess and the underlying residuum or colluvium from granite and other rocks of igneous origin

*Slope range:* 3 to 15 percent

*Elevation:* 975 feet

*Taxonomic classification:* Fine-loamy, mixed, active, mesic Typic Fragiudults

### Typical Pedon

Delassus silt loam, 3 to 8 percent slopes, in a wooded area; 2,210 feet west and 1,980 feet south of the northeast corner of sec. 2, T. 34 N., R. 5 E.; in St. Francois County; USGS Wachita topographic quadrangle; UTM coordinates 4,173,457 meters Northing and 725,130 meters Easting, Zone 15, NAD 27.

A—0 to 3 inches; dark brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine and very fine granular structure; friable; many very fine and few fine roots; neutral; abrupt smooth boundary.

E—3 to 7 inches; yellowish brown (10YR 5/4) silt loam with about 10 percent mixing of dark brown (10YR 4/3) A horizon material; weak fine granular structure; friable; common very fine and few fine roots; moderately acid; clear wavy boundary.

BE—7 to 13 inches; brown (7.5YR 5/4) silt loam; moderate medium and fine subangular blocky structure; friable; common fine and few very fine roots; strongly acid; clear wavy boundary.

Bt—13 to 26 inches; brown (7.5YR 4/4) silty clay loam; moderate medium and fine subangular blocky structure; firm; few faint reddish brown clay films on faces of ped; common fine and few medium and very fine roots; very strongly acid; clear smooth boundary.

2E—26 to 31 inches; light yellowish brown (10YR 6/4) silt loam; many coarse faint dark yellowish brown (10YR 4/6) mottles; weak thin and medium platy structure; firm; common fine and very fine roots along horizontal plates; extremely acid; abrupt smooth boundary.

2Btxl—31 to 45 inches; light brownish gray (10YR 6/2) loam; common medium distinct dark yellowish brown (10YR 4/6) mottles; moderate very coarse prismatic structure, ped interiors massive; very firm; brittle; very hard; few very fine roots along faces of prisms; few faint dark brown clay films and flows on vertical faces of prisms; 1 percent granite gravel; extremely acid; gradual wavy boundary.

2Btx2—45 to 61 inches; reddish yellow (7.5YR 6/6) loam; many coarse distinct light brownish gray (10YR 6/2) mottles; weak very coarse prismatic structure, ped interiors massive; very firm; brittle; very hard; few faint brown clay films and flows on vertical faces of prisms; 2 percent granite gravel; extremely acid; abrupt wavy boundary.

2R—61 inches; granite.

### Range in Characteristics

*Depth to the 2Btx horizon:* 20 to 36 inches

*Thickness of the solum:* 48 to 72 inches

*A or Ap horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 27 percent

Reaction—very strongly acid to moderately acid, unless limed

*E horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 6, and chroma 2 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 27 percent

Reaction—very strongly acid to moderately acid

*BE or Bt horizon (upper part):*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 to 6; and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam or loam

Content of rock fragments—0 to 27 percent

Reaction—very strongly acid to moderately acid

*Bt horizon (lower part):*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 to 6; and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam, loam, or silty clay loam

Content of rock fragments—0 to 27 percent

Reaction—extremely acid to strongly acid

*2E horizon:*

Color—hue of 10YR, 7.5YR, 5YR; value of 4 to 7; and chroma of 2 to 6

Texture of the fine-earth fraction—silt loam or loam

Content of rock fragments—0 to 35 percent

Reaction—extremely acid or very strongly acid

*2Btx horizon:*

Color—hue of 7.5YR, 10YR, or 2.5Y; value of 4 to 6; and chroma of 2 to 8

Texture of the fine-earth fraction—coarse sandy loam, sandy loam, loam, or silt loam

Content of rock fragments—0 to 60 percent

Reaction—extremely acid to strongly acid

*3Bt horizon (if it occurs):*

Color—hue of 2.5YR to 10YR, value of 3 to 7, and chroma of 1 to 8

Texture of the fine-earth fraction—silt loam or silty clay loam

Rock fragments—15 to 60 percent

Reaction—extremely acid to strongly acid

## Dubbs Series

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Loamy alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 360 feet

*Taxonomic classification:* Fine-silty, mixed, active, thermic Typic Hapludalfs

### Typical Pedon

Dubbs silt loam, 0 to 1 percent slopes, in a cultivated field; 500 feet north and 750 feet east of the southwest corner of sec. 33, T. 29 N., R. 10 E.; USGS Dongola, Missouri, topographic quadrangle; UTM coordinates 4,113,035 meters Northing and 237,320 meters Easting, Zone 16, NAD27.

- Ap*—0 to 9 inches; dark brown (10YR 3/3) silt loam, light yellowish brown (10YR 6/4) dry; weak very fine and fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; strongly acid; abrupt wavy boundary.
- Bt1*—9 to 20 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine and medium subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; diffuse smooth boundary.
- Bt2*—20 to 30 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine and fine roots; many fine tubular pores; few faint dark brown (10YR 3/3) clay films on faces of peds; moderately acid; diffuse smooth boundary.
- Bt3*—30 to 43 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; many fine tubular pores; few faint dark brown (10YR 3/3) clay films on faces of peds; moderately acid; gradual smooth boundary.
- Bt4*—43 to 58 inches; dark yellowish brown (10YR 4/4) silt loam; weak very fine and fine subangular blocky structure; friable; few very fine roots; many fine tubular pores; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; many fine prominent black (10YR 2/1) iron-manganese masses; very strongly acid; diffuse smooth boundary.
- 2BC1*—58 to 68 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; weak very fine and fine

subangular blocky structure; firm; many fine vesicular pores; many fine and medium prominent black (10YR 2/1) iron-manganese masses; very strongly acid; clear wavy boundary.

- 2BC2*—68 to 80 inches; dark yellowish brown (10YR 4/4) loam; weak very fine subangular blocky structure; firm; many fine vesicular pores; common fine prominent black (10YR 2/1) iron-manganese masses; common medium prominent yellowish red (5YR 4/6) masses of oxidized iron; common fine and medium prominent light brownish gray (10YR 6/2) iron depletions; very strongly acid.

### Range in Characteristics

*Thickness of the solum:* 20 to 60 inches

*Ap horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma 2 or 3

Texture of the fine-earth fraction—silt loam

Reaction—very strongly acid to moderately acid, unless limed

*Bt horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6

Redoximorphic features—iron segregations in shades of gray or brown

Texture of the fine-earth fraction—silty clay loam, clay loam, or silt loam

Reaction—very strongly acid to moderately acid, unless limed

*BC or 2BC horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6

Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations

Texture of the fine-earth fraction—silt loam, loam, or very fine sandy loam

Reaction—very strongly acid to moderately acid, unless limed

*C horizon (if it occurs):*

Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 6

Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations

Texture of the fine-earth fraction—sandy loam, very fine sandy loam, loam, or silt loam

Reaction—very strongly acid to moderately acid, unless limed

## Elsah Series

*Depth class:* Very deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderate in the upper part; moderately rapid or rapid in the lower part

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Loamy alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 490 feet

*Taxonomic classification:* Loamy-skeletal, mixed, superactive, nonacid, mesic Typic Udifluvents

### Typical Pedon

Elsah silt loam, 0 to 3 percent slopes, occasionally flooded, in a wooded area; 1,390 feet east and 500 feet north of the southwest corner of sec. 2, T. 31 N., R. 13 E.; in Cape Girardeau County; USGS Cape Girardeau NE, Missouri, topographic quadrangle; UTM coordinates 4,150,505 meters Northing and 271,976 meters Easting, Zone 16, NAD27.

A—0 to 6 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine roots; common fine pores; neutral; gradual wavy boundary.

C1—6 to 20 inches; dark yellowish brown (10YR 4/4) silt loam; platy; friable; common fine roots; common fine pores; 7 percent chert gravel; neutral; clear wavy boundary.

2C2—20 to 38 inches; dark yellowish brown (10YR 4/4) extremely gravelly loam, stratified; massive; few fine roots; many fine pores; 70 percent chert gravel; moderately acid; clear wavy boundary.

2C3—38 to 60 inches; dark yellowish brown (10YR 4/4) extremely gravelly silt loam; stratified; massive; firm; common black stains; 65 percent chert gravel; moderately acid.

### Range in Characteristics

*A horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 12 percent

Reaction—moderately acid to neutral

*C or AC horizon:*

Color—hue of 10YR, value of 4 to 6, and chroma of 3 or 4

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—7 to 45 percent

Reaction—moderately acid to neutral

*2C horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 or 4

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—35 to 70 percent

Reaction—moderately acid to neutral

## Falaya Series

*Depth class:* Very deep

*Drainage class:* Somewhat poorly drained

*Permeability:* Moderate

*Landform:* Lowlands

*Position on the landform:* Flood plains

*Parent material:* Silty alluvium from loess

*Slope range:* 0 to 1 percent

*Elevation:* 350 feet

*Taxonomic classification:* Coarse-silty, mixed, active, acid, thermic Aeric Fluvaquents

### Typical Pedon

Falaya silt loam, 0 to 1 percent slopes, occasionally flooded, in a cultivated field; 500 feet east and 100 feet north of the southwest corner of sec. 6, T. 28 N., R. 10 E.; USGS Advance, Missouri, topographic quadrangle; UTM coordinates 4,111,431 meters Northing and 233,930 meters Easting, Zone 16, NAD27.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam; weak thin platy structure; very friable; many very fine and fine vesicular pores; common black (10YR 2/1) iron-manganese masses; slightly acid; abrupt wavy boundary.

Bg1—10 to 23 inches; 50 percent light gray (10YR 7/2) and 50 percent pale brown (10YR 6/3) silt; weak thick platy structure; very friable; many very fine and fine vesicular pores; common strong brown (7.5YR 5/8) masses of oxidized iron; common black (10YR 2/1) iron-manganese masses; strongly acid; clear wavy boundary.

Bg2—23 to 34 inches; light gray (10YR 7/1) silt loam; weak fine subangular blocky structure; very friable; common very fine and fine vesicular pores; common dark yellowish brown (10YR 4/6) masses of oxidized iron; very strongly acid; clear wavy boundary.

Bw1—34 to 56 inches; 60 percent pale brown (10YR 6/3) and 40 percent light gray (10YR 7/2) silt loam; weak very fine subangular blocky structure; very friable; common dark yellowish brown (10YR 4/6) masses of oxidized iron; common strong brown (7.5YR 5/8) masses of oxidized iron; very strongly acid; clear wavy boundary.

Bw2—56 to 69 inches; 60 percent pale brown (10YR 6/3) and 40 percent light gray (10YR 7/2) silt loam; moderate medium prismatic structure; friable; many fine tubular and common very fine tubular pores; many black (10YR 2/1) iron-manganese nodules; common yellowish red (5YR 4/6) masses of oxidized iron; common strong brown (7.5YR 5/8) masses of oxidized iron; very strongly acid; clear wavy boundary.

2Bg—69 to 80 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium prismatic structure; firm; many fine tubular and common very fine tubular pores; few grayish brown (10YR 5/2) clay films and very few light gray (10YR 7/2) silt coats; many black (10YR 2/1) iron-manganese nodules; common strong brown (7.5YR 5/8) masses of oxidized iron; very strongly acid.

#### Range in Characteristics

##### Ap horizon:

Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 2 or 3  
 Texture of the fine-earth fraction—silt loam  
 Content of rock fragments—none  
 Reaction—very strongly acid to slightly acid

##### Bg horizon:

Color—hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3  
 Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations  
 Texture of the fine-earth fraction—silt loam or silt  
 Content of rock fragments—none  
 Reaction—very strongly acid or strongly acid

##### Bw horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2  
 Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations  
 Texture of the fine-earth fraction—silt loam  
 Content of rock fragments—none  
 Reaction—very strongly acid or strongly acid

##### 2Bg horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2  
 Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations  
 Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—none  
 Reaction—very strongly acid or strongly acid

## Firebaugh Series

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate in the upper part of the profile; slow in the lower part

*Landform:* Ridges

*Position on the landform:* Summits and shoulders

*Parent material:* Thin layer of loess or silty sediment and the underlying loamy and clayey residuum derived from cherty dolostone

*Slope range:* Moderately sloping and strongly sloping (3 to 15 percent)

*Elevation:* 905 feet

*Taxonomic classification:* Fine-loamy, mixed, active, mesic Fragiaquic Paleudults

#### Typical Pedon

Firebaugh silt, 3 to 8 percent slopes, in a forest; 2,810 feet east and 100 feet north of the southwest corner of sec 32, T. 32 N., R. 7 E.; in Madison County; USGS Cherokee Pass topographic quadrangle; UTM coordinates 4,143,173 meters Northing and 738,987 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed leaves, twigs, and roots; abrupt smooth boundary.

A—1 to 4 inches; brown (10YR 4/3) silt, pale brown (10YR 6/3) dry; moderate fine granular structure; very friable; common coarse and medium roots and many very fine and fine roots; 1 percent subangular chert gravel; very strongly acid; clear smooth boundary.

E—4 to 8 inches; yellowish brown (10YR 5/4) silt, very pale brown (10YR 7/4) dry; weak fine subangular blocky structure; friable; common coarse and medium roots and many very fine and fine roots; very strongly acid; clear smooth boundary.

Bt1—8 to 17 inches; strong brown (7.5YR 4/6) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common medium roots and many very fine and fine roots; many faint clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—17 to 21 inches; strong brown (7.5YR 5/6) silty clay loam; common fine prominent pale brown (10YR 6/3) iron depletions; moderate very fine and fine subangular blocky structure; friable; common medium roots, common very fine and fine roots; many distinct clay films on faces of peds; 1

percent subangular chert cobbles and 5 percent subangular chert gravel; very strongly acid; abrupt wavy boundary.

**2Btx**—21 to 36 inches; yellowish brown (10YR 5/6) very gravelly silt loam; common fine prominent grayish brown (10YR 5/2) iron depletions; weak coarse prismatic structure parting to weak very fine and fine subangular blocky; firm; 40 percent brittle; common fine roots; few distinct pale brown (10YR 6/3) and light brownish gray (10YR 6/2) clay depletions on faces of peds and few prominent clay films on vertical faces of peds; 5 percent subangular chert cobbles and 50 percent subangular chert gravel; very strongly acid; clear wavy boundary.

**3Bt3**—36 to 52 inches; strong brown (7.5YR 4/6 and 5/6) very cobbly clay; common coarse prominent red (2.5YR 4/6) masses of iron accumulation; moderate very fine and fine subangular blocky structure; firm; common very fine roots; very few distinct light gray (10YR 7/2) clay depletions on faces of peds and common prominent clay films on vertical faces of peds; 10 percent angular chert stones, 15 percent angular chert cobbles, and 22 percent subangular chert gravel; very strongly acid; clear wavy boundary.

**3Bt4**—52 to 71 inches; red (2.5YR 4/6) and strong brown (7.5YR 5/6) extremely cobbly clay; common fine and medium prominent light gray (10YR 7/2) iron depletions; moderate fine subangular blocky structure; very firm; few very fine roots; common prominent clay films on faces of peds; 10 percent angular chert stones, 30 percent angular chert cobbles, and 31 percent subangular chert gravel; very strongly acid.

#### Range in Characteristics

*Depth to the 2Btx horizon:* 18 to 27 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3

Texture of the fine-earth fraction—silt or silt loam

Content of rock fragments—0 to 10 percent

Reaction—very strongly acid to moderately acid

*E horizon:*

Color—hue of 10YR, value of 4 to 8, and chroma of 3 to 6

Texture of the fine-earth fraction—silt or silt loam

Content of rock fragments—0 to 10 percent

Reaction—very strongly acid to moderately acid

*Bt horizon:*

Color—hue of 10YR to 5YR, value of 4 to 6, and chroma of 4 to 8

Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 15 percent

Reaction—very strongly acid or strongly acid

*2Btx horizon:*

Color—of 10YR or 7.5YR, value of 4 to 7, and chroma of 4 to 8

Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations

Texture of the fine-earth fraction—loam, silt loam, or silty clay loam

Content of rock fragments—20 to 60 percent

Reaction—very strongly acid or strongly acid

*3Bt horizon:*

Color—of 10YR to 2.5YR, value of 3 to 7, and chroma of 4 to 8

Redoximorphic features—iron segregations in shades of brown or gray; iron-manganese concentrations

Texture of the fine-earth fraction—clay loam or clay

Content of rock fragments—15 to 75 percent

Reaction—very strongly acid or strongly acid

### Forestdale Series

*Depth class:* Very deep

*Drainage class:* Poorly drained

*Permeability:* Very slow

*Landform:* Lowlands

*Position on the landform:* Depressions

*Parent material:* Clayey and silty alluvium

*Slope range:* 0 to 1 percent

*Elevation:* 340 feet

*Taxonomic classification:* Fine, smectitic, thermic Typic Endoaqualls

#### Typical Pedon

Forestdale silty clay loam, 0 to 1 percent slopes, ponded, in a hardwood forest; 1,600 feet east and 2,700 feet south of the northwest corner of sec. 9, T. 27 N., R. 8 E.; in Wayne County; USGS McGee, Missouri, topographic quadrangle; UTM coordinates 4,098,436 meters Northing and 749,236 meters Easting, Zone 15, NAD27.

Oi—0 to 2 inches; slightly decomposed plant material; abrupt wavy boundary.

A—2 to 9 inches; dark gray (2.5Y 4/1) silty clay loam; moderate very fine and fine subangular blocky

structure; firm; many very fine to medium roots; many very fine and fine tubular pores; common red (2.5YR 4/6) masses of oxidized iron; moderately acid; clear wavy boundary.

Btg1—9 to 16 inches; gray (2.5Y 5/1) silty clay loam; moderate fine and medium subangular blocky structure; friable; many very fine to medium roots; many very fine and fine tubular pores; common distinct clay films on faces of peds; common strong brown (7.5YR 4/6) masses of oxidized iron; neutral; clear wavy boundary.

Btg2—16 to 29 inches; dark gray (2.5Y 4/1) silty clay; moderate fine and medium angular blocky structure; friable; common very fine and fine roots; many very fine and fine tubular pores; common distinct clay films on faces of peds and very dark gray (N 3/0) slickensides (pedogenic); slightly alkaline; clear irregular boundary.

Btg3—29 to 51 inches; greenish gray (5GY 6/1) silty clay loam; moderate coarse prismatic structure parting to moderate fine and medium angular blocky; friable; common very fine roots; many very fine and fine tubular pores; few faint clay films on faces of peds; 2 percent carbonate concretions; moderately alkaline; gradual wavy boundary.

Btg4—51 to 70 inches; greenish gray (5GY 5/1) silty clay; moderate coarse prismatic structure parting to strong fine angular blocky; firm; few very fine roots; few fine and medium tubular pores; few faint clay films on faces of peds; many red (2.5YR 4/6) masses of oxidized iron; slightly alkaline; clear wavy boundary.

Btg5—70 to 80 inches; gray (10YR 6/1) silty clay; moderate coarse prismatic structure parting to strong fine angular blocky; firm; few faint clay films on faces of peds; strong brown (7.5YR 4/6) masses of oxidized iron; neutral.

#### Range in Characteristics

##### *A or Ap horizon:*

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 or 2

Texture of the fine-earth fraction—silty clay loam

Content of rock fragments—none

Reaction—very strongly acid or moderately acid

##### *Btg horizon (upper part):*

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2

Redoximorphic features—iron-manganese stains and masses

Texture of the fine-earth fraction—silty clay loam, clay, or silty clay

Content of rock fragments—none

Reaction—very strongly acid to moderately alkaline

##### *Btg horizon (lower part):*

Color—hue of 10YR, 2.5Y, or 5GY; value of 4 to 7; and chroma of 1 or 2

Redoximorphic features—iron-manganese stains and masses

Texture of the fine-earth fraction—very fine sandy loam, silt loam, silty clay loam, or silty clay

Content of rock fragments—none

Reaction—very strongly acid to moderately alkaline

## Frenchmill Series

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* Mountains

*Position on the landform:* Backslopes and footslopes

*Parent material:* Colluvial materials derived from rhyolite or granite

*Slope range:* Moderately steep to very steep (15 to 45 percent)

*Elevation:* 875 feet

*Taxonomic classification:* Loamy-skeletal, mixed, active, mesic Typic Paleudults

#### Typical Pedon

Frenchmill very cobbly silt loam, in an area of Killarney-Frenchmill complex, 15 to 45 percent slopes, rubbly, in a forest; 125 feet south and 1,350 feet east of the northwest corner of sec. 3, T. 33 N., R. 5 E.; in Madison County; USGS Rhodes Mountain topographic quadrangle; UTM coordinates 4,164,018 meters Northing and 721,959 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed leaves, twigs, and roots; abrupt wavy boundary.

A—1 to 5 inches; brown (10YR 4/3) very cobbly silt loam, pale brown (10YR 6/3) dry; moderate very fine granular structure; very friable; many very fine to medium roots; 15 percent rhyolite cobbles and 23 percent rhyolite gravel; very strongly acid; abrupt wavy boundary.

E1—5 to 11 inches; yellowish brown (10YR 5/4) very cobbly loam, light gray (10YR 7/2) dry; weak fine granular structure; friable; many very fine to medium roots; 20 percent rhyolite cobbles and 15 percent rhyolite gravel; very strongly acid; clear wavy boundary.

E2—11 to 16 inches; dark yellowish brown (10YR 4/6)

very cobbly loam, very pale brown (10YR 7/4) dry; weak fine granular structure; friable; common very fine to medium roots; few brown (10YR 5/3) silt coats on rock fragments; 20 percent rhyolite cobbles and 20 percent rhyolite gravel; very strongly acid; clear wavy boundary.

2Bt1—16 to 23 inches; yellowish brown (10YR 5/8) very cobbly loam; moderate very fine subangular blocky structure; friable; common fine and medium roots; common distinct strong brown (7.5YR 4/6) clay films on faces of peds and few silt coats; 20 percent rhyolite cobbles and 25 percent rhyolite gravel; very strongly acid; clear wavy boundary.

2Bt2—23 to 31 inches; yellowish brown (10YR 5/6) extremely gravelly loam; moderate fine subangular blocky structure; firm; few fine and medium roots; common yellowish red (5YR 4/6) clay films on faces of peds and common light yellowish brown (10YR 6/4) silt coats; 18 percent rhyolite cobbles and 42 percent rhyolite gravel; very strongly acid; gradual wavy boundary.

2Bt3—31 to 37 inches; 60 percent strong brown (7.5YR 4/6) and 40 percent light yellowish brown (10YR 6/4) very gravelly loam; moderate fine subangular blocky structure; firm; few fine roots; many prominent dark red (2.5YR 3/6) clay films on faces of peds; 15 percent rhyolite cobbles and 37 percent rhyolite gravel; very strongly acid; clear wavy boundary.

3Bt4—37 to 47 inches; strong brown (7.5YR 5/8) sandy clay loam; weak fine and medium subangular blocky structure; firm; few very fine roots; few prominent light reddish brown (5YR 6/3) clay films on vertical faces of peds and common prominent yellowish red (5YR 4/6) clay films on faces of peds; very strongly acid; clear wavy boundary.

3Bt5—47 to 55 inches; strong brown (7.5YR 4/6) sandy clay loam; moderate coarse prismatic structure; firm; few very fine roots; few prominent reddish gray (5YR 5/2) clay films on faces of peds and common prominent yellowish red (5YR 4/6) clay films on faces of peds; very strongly acid; gradual wavy boundary.

3Bt6—55 to 71 inches; 60 percent strong brown (7.5YR 5/8) and 35 percent yellowish red (5YR 5/6) sandy clay loam; weak coarse prismatic structure; friable; few prominent pinkish gray (5YR 6/2) and few prominent pinkish gray (5YR 7/2) clay films on vertical faces of peds; 1 percent rhyolite gravel; very strongly acid.

#### Range in Characteristics:

*Depth to bedrock:* More than 60 inches

#### *A horizon:*

Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Content of rock fragments—35 to 60 percent

Reaction—very strongly acid to moderately acid

#### *E horizon:*

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam or loam

Content of rock fragments—10 to 50 percent

Reaction—very strongly acid or strongly acid

#### *Bt horizon (if it occurs):*

Color—hue of 10YR to 5YR, value of 4 to 6, and chroma of 4 to 8

Texture of the fine-earth fraction—silt loam

Content of rock fragments—35 to 60 percent

Reaction—very strongly acid or strongly acid

#### *2Bt horizon:*

Color—hue of 10YR to 2.5YR, value of 4 to 7, and chroma of 3 to 8

Texture of the fine-earth fraction—loam or clay loam

Content of rock fragments—35 to 60 percent

Reaction—very strongly acid or strongly acid

#### *3Bt horizon:*

Color—hue of 10YR to 2.5YR, value of 3 to 6, and chroma of 4 to 8

Texture of the fine-earth fraction—sandy clay loam or clay loam

Content of rock fragments—0 to 35 percent

Reaction—very strongly acid or strongly acid

## **Gabriel Series**

*Depth class:* Very deep

*Drainage class:* Poorly drained

*Permeability:* Moderately slow

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Fine-silty alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 450 feet

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Argiaquolls

### **Typical Pedon**

Gabriel silt loam, 0 to 3 percent slopes, rarely flooded, in a pasture; 950 feet north and 1,200 feet east of the southwest corner of sec. 6, T. 27 N., R. 4 E.; in Wayne County; USGS Mill Spring, Missouri,

topographic quadrangle; UTM coordinates 4,099,100 meters Northing and 707,100 meters Easting, Zone 15, NAD27.

- A1—0 to 6 inches; very dark gray (7.5YR 3/1) silt loam, grayish brown (10YR 5/2), dry; moderate fine subangular blocky structure; friable; many very fine roots; many very fine tubular pores; few black (10YR 2/1) iron-manganese concretions; 1 percent angular chert gravel; neutral; clear smooth boundary.
- A2—6 to 13 inches; very dark gray (7.5YR 3/1) silt loam, gray (10YR 5/1), dry; moderate very fine and fine subangular blocky structure; friable; many very fine roots; many very fine tubular pores; 1 percent angular chert gravel; neutral; abrupt smooth boundary.
- Btg1—13 to 27 inches; very dark gray (7.5YR 3/1) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many very fine tubular pores; few faint clay films on faces of peds; common dark yellowish brown (10YR 4/6) masses of oxidized iron; 1 percent angular chert gravel; neutral; clear smooth boundary.
- Btg2—27 to 41 inches; gray (7.5YR 6/1) silt loam; moderate very fine and fine angular blocky structure; firm; many very fine tubular pores; few faint clay films on faces of peds; common strong brown (7.5YR 5/6) masses of oxidized iron; 1 percent angular chert gravel; neutral; gradual smooth boundary.
- Btg3—41 to 53 inches; gray (7.5YR 6/1) silt loam; moderate very fine and fine angular blocky structure; firm; common very fine and fine tubular pores; few faint clay films on faces of peds; common strong brown (7.5YR 5/6) masses of oxidized iron; 1 percent angular chert gravel; neutral; gradual smooth boundary.
- Btg4—53 to 60 inches; gray (10YR 6/1) silty clay loam; moderate very fine and fine angular blocky structure; firm; many very fine tubular pores; few faint clay films on faces of peds; common strong brown (7.5YR 5/6) masses of oxidized iron; few iron-manganese concretions; 1 percent angular chert gravel; neutral; gradual smooth boundary.
- Btg5—60 to 74 inches; gray (10YR 6/1) silty clay loam; moderate very fine and fine angular blocky structure; firm; many very fine vesicular pores; few faint clay films on faces of peds; common strong brown (7.5YR 5/6) masses of oxidized iron; 1 percent angular chert gravel; neutral; gradual smooth boundary.
- BC—74 to 84 inches; strong brown (7.5YR 5/6) silty clay loam; moderate very fine and fine angular

blocky structure; firm; many very fine vesicular pores; many gray (7.5YR 6/1) iron depletions; neutral.

### Range in Characteristics

*Thickness of the solum:* 80 inches or more

*Depth to bedrock:* 80 inches or more

#### *A horizon:*

Color—hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 to 3

Texture of the fine-earth fraction—silt loam

Reaction—slightly acid or neutral

#### *Btg horizon (upper part):*

Color—hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 to 3

Redoximorphic features—iron masses with hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam, silty clay loam, or clay loam

Reaction—strongly acid to neutral

#### *Btg (lower part) or BC horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 or 2

Redoximorphic features—iron masses with hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam, silty clay loam, or clay loam

Reaction—strongly acid to neutral

## Gasconade Series

*Depth class:* Shallow and very shallow

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderately slow

*Landform:* Hillslopes

*Position on the landform:* Backslopes and shoulders

*Parent material:* Gravelly residuum derived from dolostone

*Slope range:* 3 to 35 percent

*Elevation:* 560 feet

*Taxonomic classification:* Clayey-skeletal, mixed, superactive, mesic Lithic Hapludolls

### Typical Pedon

Gasconade silty clay, in an area of Gasconade-Rock outcrop complex, 3 to 35 percent slopes, in a forest; 1,850 feet west and 4,590 feet north of the southeast corner of sec. 33, T. 31 N., R. 5 E.; in Madison County; USGS Coldwater topographic quadrangle;

UTM coordinates 4,134,087 meters Northing and 721,590 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 4 inches; dark brown (10YR 3/3) silty clay, dark brown (10YR 3/3) dry; moderate fine granular structure; friable; common fine and medium roots and many very fine; 5 percent subangular dolostone gravel; neutral; abrupt wavy boundary.

Bw—4 to 13 inches; dark brown (7.5YR 3/3) very gravelly clay; moderate fine subangular blocky structure; firm; common very fine roots; 25 percent subangular dolostone gravel and 15 percent dolostone cobbles; slightly alkaline; abrupt wavy boundary.

R—13 inches; dolostone bedrock.

### Range in Characteristics

*Depth to bedrock:* 4 to 20 inches

*A horizon:*

Color—hue of 10YR, value of 2 or 3, and chroma of 1 to 3

Texture of the fine-earth fraction—silty clay or clay

Content of rock fragments—0 to 15 percent

Reaction—slightly acid to slightly alkaline

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 to 4

Texture of the fine-earth fraction—clay, silty clay, silty clay loam, or clay loam

Content of rock fragments—35 to 70 percent

Reaction—slightly acid to slightly alkaline

## Gepp Series

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* Uplands

*Position on the landform:* Shoulders and summits

*Parent material:* Clayey residuum derived from dolostone

*Slope range:* Moderately sloping and strongly sloping (8 to 15 percent)

*Elevation:* 618 feet

*Taxonomic classification:* Very fine, mixed, semiactive, mesic Typic Paleudalfs

### Typical Pedon

Gepp very gravelly silt loam, in an area of Alred-Gepp complex, 8 to 15 percent slopes, stony, in a forest; 2,650 feet north and 1,900 feet east of the southwest

corner of sec. 31, T. 31 N., R. 8 E.; in Madison County; USGS Allbright topographic quadrangle; UTM coordinates 4,134,001 meters Northing and 747,127 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed leaves, twigs, and roots; abrupt wavy boundary.

A—1 to 6 inches; brown (10YR 5/3) very gravelly silt loam; moderate fine granular structure; very friable; many very fine and fine roots and few medium; many fine tubular pores; 37 percent subangular chert gravel and 2 percent chert cobbles; very strongly acid; clear wavy boundary.

Bt1—6 to 12 inches; yellowish red (5YR 5/6) clay; moderate very fine and fine subangular blocky structure; firm; common very fine and fine roots and few medium and coarse; common fine tubular pores; common distinct clay films on faces of peds; 10 percent chert gravel and 1 percent chert cobbles; very strongly acid; clear wavy boundary.

Bt2—12 to 19 inches; 80 percent yellowish red (5YR 5/6) and 20 percent strong brown (7.5YR 5/6) clay; weak fine subangular blocky structure; firm; few very fine to coarse roots; common fine tubular pores; many distinct clay films on faces of peds; 6 percent chert gravel; very strongly acid; clear wavy boundary.

Bt3—19 to 27 inches; 55 percent yellowish red (5YR 5/8) and 45 percent red (2.5YR 5/6) clay; moderate very fine subangular blocky structure; firm; few very fine to medium roots; common fine tubular pores; many distinct clay films on faces of peds; 2 percent chert gravel; very strongly acid; gradual wavy boundary.

Bt4—27 to 36 inches; 65 percent yellowish red (5YR 5/6) and 35 percent reddish brown (2.5YR 4/4) clay; moderate very fine angular blocky structure; firm; few very fine and fine roots; common fine tubular pores; many distinct clay films and few prominent clay films on faces of peds; 1 percent chert cobbles; very strongly acid; gradual wavy boundary.

Bt5—36 to 44 inches; 65 percent strong brown (7.5YR 5/6) and 35 percent red (2.5YR 4/6) clay; moderate very fine angular blocky structure; firm; few very fine to medium roots; common fine tubular pores; common medium distinct light brown (7.5YR 6/3) vertical seams; many distinct clay films and few prominent clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt6—44 to 53 inches; 65 percent reddish brown (2.5YR 4/4) and 35 percent strong brown (7.5YR 5/6) clay; moderate very fine angular blocky structure; very firm; few very fine roots; common fine tubular pores; common fine prominent light

gray (10YR 7/2) seams; many prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt7—53 to 59 inches; 65 percent weak red (10R 4/4) and 35 percent yellowish red (5YR 5/6) clay; moderate very fine and fine angular blocky structure; very firm; few very fine roots; common fine tubular pores; common fine prominent light gray (10YR 7/2) seams; many prominent clay films on faces of peds; strongly acid; abrupt wavy boundary.

Bt8—59 to 67 inches; 65 percent red (10R 4/6) and 35 percent yellowish red (5YR 5/6) clay; strong fine angular blocky structure; very firm; few very fine roots; few fine tubular pores; strong brown (7.5YR 5/6) seam; many prominent clay films on faces of peds and common prominent black (10YR 2/1) manganese or iron-manganese stains; strongly acid; clear wavy boundary.

Bt9—67 to 81 inches; 70 percent red (2.5YR 4/6) and 30 percent yellowish red (5YR 5/6) clay; moderate very fine and fine angular blocky structure; very firm; few very fine roots; few fine tubular pores; common prominent clay films on faces of peds and common prominent black (10YR 2/1) manganese or iron-manganese stains; moderately acid.

### Range in Characteristics

*Depth to bedrock:* More than 60 inches

#### *A horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—35 to 60 percent

Reaction—very strongly acid to moderately acid

#### *E horizon (if it occurs):*

Color—hue of 10YR, value of 4 to 6, and chroma 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—10 to 70 percent

Reaction—strongly acid to slightly acid

#### *Bt horizon (upper part):*

Color—hue of 7.5YR to 2.5YR, value of 3 to 5, and chroma of 6 to 8

Texture of the fine-earth fraction—clay loam, silty clay loam, silty clay, or clay

Content of rock fragments—3 to 35 percent

Reaction—very strongly acid to moderately acid

#### *Bt horizon (lower part):*

Color—hue of 7.5YR to 10R, value of 3 to 5, and chroma of 6 to 8

Redoximorphic features—iron concentrations in shades of red or brown

Texture of the fine-earth fraction—clay

Content of rock fragments—0 to 15 percent

Reaction—strongly acid to moderately acid

## **Gladden Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate in the upper part; moderately rapid in the lower part

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Loamy alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 380 feet

*Taxonomic classification:* Coarse-loamy, siliceous, superactive, mesic Dystric Fluventic Eutrudepts

### Typical Pedon

Gladden silt loam, 0 to 3 percent slopes, occasionally flooded, in a pasture; 3,300 feet south and 1,550 feet east of the northwest corner of sec. 3, T. 27 N., R. 7 E.; in Wayne County; USGS Shook, Missouri, topographic quadrangle; UTM coordinates 4,101,826 meters Northing and 741,215 meters Easting, Zone 15, NAD27.

A—0 to 5 inches; dark brown (10YR 3/3) silt loam; moderate fine granular structure; friable; many very fine to fine roots and common medium roots; many very fine to fine vesicular and common medium tubular pores; 1 percent subrounded chert gravel; moderately acid; clear smooth boundary.

AB—5 to 11 inches; brown (7.5YR 4/3) loam; moderate fine subangular blocky structure; friable; many very fine to fine roots and common medium roots; common very fine vesicular pores; 1 percent subrounded chert gravel; very strongly acid; clear smooth boundary.

Bw1—11 to 22 inches; brown (7.5YR 4/3) silt loam; moderate fine subangular blocky structure; friable; many very fine to fine roots and common medium roots; many very fine to fine vesicular and common medium tubular pores; 10 percent subrounded chert gravel; moderately acid; clear smooth boundary.

Bw2—12 to 38 inches; brown (7.5YR 4/4) gravelly loam; moderate very fine and fine subangular blocky structure; friable; common very fine to fine roots and few medium roots; many very fine to fine vesicular and many medium tubular pores; 20

percent subrounded chert gravel; moderately acid; gradual wavy boundary.

Bw3—38 to 53 inches; strong brown (7.5YR 4/6) very gravelly loam; moderate fine subangular blocky structure; firm; common very fine and fine roots; many very fine to fine vesicular and few medium tubular pores; 35 percent subrounded chert gravel; strongly acid; gradual wavy boundary.

2C1—53 to 66 inches; brown (7.5YR 4/4) extremely gravelly coarse sandy loam; massive; friable; few fine roots; many very fine and fine vesicular pores; 5 percent subrounded chert cobbles and 55 percent subrounded chert gravel; slightly acid; gradual wavy boundary.

2C2—66 to 80 inches; brown (7.5YR 4/4) extremely gravelly coarse sandy loam; massive; friable; few fine roots; many very fine and fine vesicular pores; 5 percent subrounded chert cobbles and 65 percent subrounded chert gravel; slightly acid.

#### Range in Characteristics

*Thickness of the solum:* 30 to 56 inches

*Ap or A horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—0 to 15 percent

Reaction—strongly acid to neutral

*Bw horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 6, and chroma of 3 to 6

Texture of the fine-earth fraction—sandy loam, fine sandy loam, loam, or silt loam

Content of rock fragments—0 to 35 percent

Reaction—strongly acid to neutral

*2C horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 8, and chroma of 2 to 4

Texture of the fine-earth fraction—coarse sand, sand, loamy sand, coarse sandy loam, sandy loam, or loam

Content of rock fragments—0 to 70 percent

Reaction—strongly acid to slightly acid

### Hassler Series

*Depth class:* Deep (40 to 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow

*Landform:* Mountains

*Position on the landform:* Summits, shoulders, and backslopes

*Parent material:* Loamy colluvium and residuum derived from acid igneous rocks, primarily granite

*Slope range:* Moderately sloping to steep (3 to 25 percent)

*Elevation:* 860 feet

*Taxonomic classification:* Fine-loamy, mixed, active, mesic Oxyaquic Hapludults

#### Typical Pedon

Hassler silt loam, 3 to 15 percent slopes, stony, in a forest; 1,190 feet north and 1,350 feet east of the southwest corner of sec. 31, T. 34 N., R. 6 E.; in Madison County; USGS Rhodes Mountain topographic quadrangle; UTM coordinates 4,164,582 meters Northing and 727,958 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed leaves, twigs, and roots; abrupt smooth boundary.

A—1 to 3 inches; dark yellowish brown (10YR 3/4) silt loam; pale brown (10YR 6/3) dry; moderate fine granular structure; friable; many fine and medium roots; 5 percent granite gravel and 3 percent granite cobbles; strongly acid; abrupt wavy boundary.

E—3 to 6 inches; dark yellowish brown (10YR 4/4) silt loam; light yellowish brown (10YR 6/4) dry; weak very fine subangular blocky structure; friable; many fine and medium roots; 3 percent granite gravel and 3 percent granite cobbles; very strongly acid; clear wavy boundary.

BE—6 to 9 inches; strong brown (7.5YR 4/6) silt loam; moderate very fine subangular blocky structure; friable; common fine and medium roots; few faint clay films on faces of peds; 3 percent granite gravel and 3 percent granite cobbles; very strongly acid; clear wavy boundary.

Bt1—9 to 17 inches; strong brown (7.5YR 4/6) loam; moderate very fine subangular blocky structure; firm; common fine and medium roots; few faint clay films on faces of peds; 3 percent granite gravel and 8 percent granite cobbles; very strongly acid; clear wavy boundary.

Bt2—17 to 24 inches; strong brown (7.5YR 4/6) gravelly clay loam; moderate very fine and fine subangular blocky structure; firm; common fine and medium roots; few faint clay films on faces of peds; 16 percent granite gravel and 4 percent granite cobbles; very strongly acid; abrupt wavy boundary.

2Bt3—24 to 31 inches; strong brown (7.5YR 5/6) with yellowish brown (10YR 5/8) and dark yellowish brown (10YR 4/4) gravelly loam; weak fine subangular blocky structure; firm; few fine and medium roots; few prominent clay films on faces of

pedes; few distinct brown (10YR 5/3) clay depletions; few fine prominent dark red (2.5YR 3/6) masses of iron accumulation; 30 percent granite gravel (highly derived) and 2 percent granite cobbles; very strongly acid; clear wavy boundary.

3BC—31 to 41 inches; brownish yellow (10YR 6/8) bouldery coarse sandy loam; weak coarse prismatic structure; firm; few fine roots; few prominent dark grayish brown (10YR 4/2) clay films along old root channels; light brownish gray (10YR 6/2) clay depletions on faces of pedes; 13 percent granite gravel, 2 percent granite cobbles, and 20 percent granite boulders; very strongly acid; gradual wavy boundary.

3C—41 to 48 inches; strong brown (7.5YR 5/6 and 4/6) bouldery coarse sandy loam; massive; firm; few fine roots near top of horizon; few prominent dark grayish brown clay films in root channels; many prominent light gray (10YR 7/2) clay depletions along bedding planes; 4 percent granite gravel and 25 percent granite boulders; very strongly acid; abrupt smooth boundary.

3R—48 inches; granite.

#### Range in Characteristics

*Thickness of the solum:* 40 to 59 inches

*Depth to bedrock:* 40 to 60 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 3 or 4, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 10 percent

Reaction—very strongly acid to moderately acid

*E, EB, or BE horizon:*

Color—hue of 10YR or 7.5YR, value of 4, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 10 percent

Reaction—very strongly acid to moderately acid

*Bt horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6

Texture of the fine-earth fraction—loam, silt loam, clay loam, or silty clay loam

Content of rock fragments—0 to 20 percent

Reaction—very strongly acid or strongly acid

*2Bt horizon:*

Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 8

Texture of the fine-earth fraction—loam

Content of rock fragments—10 to 50 percent

Reaction—very strongly acid or strongly acid

*3BC or 3C horizon:*

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8

Texture of the fine-earth fraction—coarse sandy loam

Content of rock fragments—4 to 50 percent

Reaction—very strongly acid or strongly acid

## Haymond Series

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Silty alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 390 feet

*Taxonomic classification:* Coarse-silty, mixed, superactive, mesic Dystric Fluventic Eutrudepts

#### Typical Pedon

Haymond silt loam, 0 to 3 percent slopes, occasionally flooded, in a cultivated field; 2,250 feet south and 3,800 feet east of the northwest corner of sec. 9, T. 29 N., R. 5 E.; in Wayne County; USGS Patterson, Missouri, topographic quadrangle; UTM coordinates 4,120,306 meters Northing and 721,721 meters Easting, Zone 15, NAD27.

A—0 to 5 inches; dark yellowish brown (10YR 4/4) silt loam; moderate very fine and fine subangular blocky structure; friable; many very fine roots; common medium tubular and many very fine vesicular pores; moderately acid; clear smooth boundary.

Bw1—5 to 18 inches; dark yellowish brown (10YR 4/4) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; common medium tubular and many very fine vesicular pores; slightly acid; gradual wavy boundary.

Bw2—18 to 27 inches; dark yellowish brown (10YR 4/4) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; common medium tubular and many very fine vesicular pores; slightly acid; gradual wavy boundary.

Bw3—27 to 38 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate very fine and fine subangular blocky; friable; common very fine roots; common medium tubular and many very fine vesicular pores; slightly acid; gradual wavy boundary.

Bw4—38 to 51 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate very fine and fine subangular blocky; friable; few very fine roots; common medium tubular and common very fine vesicular pores; slightly acid; gradual wavy boundary.

Bw5—51 to 65 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate very fine and fine subangular blocky; friable; common very fine vesicular pores; slightly acid; gradual wavy boundary.

Bw6—65 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate very fine and fine subangular blocky; friable; common very fine vesicular pores; slightly acid.

### Range in Characteristics

*Thickness of the solum:* 30 to 80 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Reaction—moderately acid to slightly alkaline

*Bw horizon:*

Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Reaction—moderately acid to slightly alkaline

## Higdon Series

*Depth class:* Very deep

*Drainage class:* Somewhat poorly drained

*Permeability:* Moderately slow

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Silty alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 390 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Aquic Hapludalfs

### Typical Pedon

Higdon silt loam, 0 to 3 percent slopes, rarely flooded, in a cultivated field; 5,000 feet south and 950 feet west of the northeast corner of sec. 5, T. 27 N., R. 7 E.; in Wayne County; USGS Shook, Missouri, topographic quadrangle; UTM coordinates 4,101,290 meters Northing and 738,935 meters Easting, Zone 15, NAD27.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale

brown (10YR 6/3) dry; weak very fine and fine granular structure; friable; many very fine to fine roots and few medium roots; few very fine vesicular pores; neutral; clear smooth boundary.

E—7 to 13 inches; brown (10YR 5/3) silt loam; weak fine and medium subangular blocky structure; friable; many very fine, fine roots and few medium roots; many very fine and fine vesicular pores; common fine black (10YR 2/1) iron-manganese masses; neutral; gradual smooth boundary.

Bt1—13 to 18 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure; friable; many very fine and fine roots; many very fine to fine vesicular and few medium tubular pores; few faint clay films on faces of peds; common fine and medium black (10YR 2/1) iron-manganese masses; strongly acid; clear wavy boundary.

Bt2—18 to 25 inches; 70 percent light yellowish brown (10YR 6/4) and 30 percent yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to moderate very fine and fine subangular blocky; friable; few very fine and fine roots; many very fine to fine vesicular and few medium tubular pores; few faint clay films on faces of peds; many fine prominent light brownish gray (10YR 6/2) iron depletions; common fine black (10YR 2/1) iron-manganese masses; strongly acid; gradual wavy boundary.

Btg1—25 to 35 inches; 60 percent light brownish gray (10YR 6/2) and 40 percent yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to moderate very fine and fine angular blocky; firm; few very fine and fine roots; many very fine to fine vesicular and few medium tubular pores; few faint clay films on faces of peds; common fine and medium strong brown (7.5YR 4/6) masses of oxidized iron; common fine black (10YR 2/1) iron-manganese masses; 1 percent chert gravel; strongly acid; gradual wavy boundary.

Bt4—35 to 43 inches; yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to moderate very fine and fine angular blocky; firm; few very fine and fine roots; many very fine to fine vesicular and few medium tubular pores; few distinct clay films on faces of peds; many fine prominent gray (10YR 6/1) iron depletions; common fine black (10YR 2/1) iron-manganese concretions; common fine black (10YR 2/1) iron-manganese masses; 1 percent chert gravel; strongly acid; gradual wavy boundary.

2Bt5—43 to 58 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate very fine and fine angular blocky structure; firm; few very fine roots;

many very fine to fine vesicular and few medium tubular pores; few distinct clay films on faces of peds; many fine and medium dark red (2.5YR 3/6) masses of oxidized iron; many fine and medium prominent gray (10YR 6/1) iron depletions; 1 percent chert gravel; slightly acid; gradual wavy boundary.

2BC—58 to 80 inches; 60 percent strong brown (7.5YR 4/6) and 30 percent dark yellowish brown (10YR 4/4) and 10 percent dark grayish brown (10YR 4/2) silty clay loam; moderate very fine and fine angular blocky structure; firm; common very fine and fine vesicular pores; many fine and medium dark red (2.5YR 3/6) masses of oxidized iron; many fine and medium prominent gray (10YR 6/1) iron depletions; 10 percent chert gravel; neutral.

#### Range in Characteristics

##### *Ap* or *A* horizon:

Color—hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 2 percent gravel

Reaction—strongly acid to neutral

##### *E* horizon:

Color—hue 10YR or 2.5Y, value of 5, and chroma of 3

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 2 percent gravel

Reaction—strongly acid to neutral

##### *Bt* horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 2 to 6

Redoximorphic features—iron depletions with chroma of 2 or less; iron-manganese concentrations

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 3 percent gravel

Reaction—strongly acid to neutral

##### *Btg*, *2Btg*, *2Bt*, *2BC*, or *Bt* horizon (lower part):

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 6

Redoximorphic features—iron depletions with chroma of 2 or less; iron-manganese concentrations

Texture of the fine-earth fraction—loam, silt loam, clay loam, or silty clay loam

Content of rock fragments—0 to 15 percent gravel

Reaction—strongly acid to neutral

## **Hildebrecht Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate above the fragipan and slow in the fragipan

*Landform:* Ridges

*Position on the landform:* Summits and backslopes

*Parent material:* Loess over residuum derived from dolostone

*Slope range:* 3 to 15 percent

*Elevation:* 800 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Oxyaquic Fragiualfs

#### Typical Pedon

Hildebrecht silt loam, 3 to 8 percent slopes, eroded, in a hay field; 400 feet north and 150 feet west of the southeast corner of sec. 8, T. 30 N., R. 10 E.; USGS Marble Hill, Missouri, topographic quadrangle; UTM coordinates 4,139,936 meters Northing and 238,398 meters Easting, Zone 16, NAD27.

*Ap*—0 to 6 inches; dark yellowish brown (10YR 4/4) silt loam; weak very fine and fine subangular blocky structure; friable; many very fine and fine roots; many very fine and fine vesicular pores; strongly acid; gradual smooth boundary.

*Bt1*—6 to 20 inches; strong brown (7.5YR 4/6) silty clay loam; moderate fine subangular blocky structure; firm; common very fine and fine roots; many very fine and fine vesicular pores; common distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; very strongly acid; clear smooth boundary.

*Bt2*—20 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; common very fine and fine roots; many very fine and fine vesicular pores; few faint dark yellowish brown (10YR 4/4) clay films on all faces of peds; common light brownish gray (10YR 6/2) iron depletions; common yellowish brown (10YR 5/8) masses of oxidized iron; very strongly acid; clear wavy boundary.

*2Btx1*—31 to 41 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure parting to weak fine angular blocky; firm; common very fine and fine vesicular pores; 60 percent brittle of horizon; few faint dark yellowish brown (10YR 4/4) clay films on all faces of peds; many light brownish gray (10YR 6/2) iron depletions; common yellowish brown (10YR 5/8) masses of oxidized iron; 15 percent chert gravel; very strongly acid; abrupt smooth boundary.

2Btx2—41 to 52 inches; yellowish brown (10YR 5/4) extremely gravelly silty clay loam; weak fine subangular blocky structure; firm; few very fine and fine vesicular pores; 30 percent brittle; few faint dark yellowish brown (10YR 4/4) clay films on all faces of peds and few pale brown (10YR 6/3) silt coats; common light brownish gray (10YR 6/2) masses of oxidized iron; common yellowish brown (10YR 5/8) iron depletions; 60 percent subangular chert gravel; very strongly acid; clear wavy boundary.

3Bt3—52 to 65 inches; strong brown (7.5YR 5/6) clay; strong fine angular blocky structure; firm; few very fine and fine vesicular pores; few faint brown (7.5YR 4/4) clay films on all faces of peds; 2 percent subangular chert stones and 10 percent subangular chert gravel; very strongly acid; clear wavy boundary.

3BC—65 to 80 inches; strong brown (7.5YR 5/8) gravelly clay; strong fine angular blocky structure; firm; few very fine and fine vesicular pores; 5 percent subangular chert cobbles and 15 percent subangular chert gravel; very strongly acid.

#### Range in Characteristics

*Depth to bedrock:* More than 6 feet

*Depth to the fragipan:* 24 to 36 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 2 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Reaction—very strongly acid to neutral

*E horizon (if it occurs):*

Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Reaction—very strongly acid to moderately acid

*Bt horizon:*

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6

Redoximorphic features—iron segregations in shades of gray, brown, or yellow

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 15 percent just above the fragipan

Reaction—very strongly acid to moderately acid

*2Btx horizon:*

Color—hue of 10YR to 5YR, value of 4 or 5, and chroma of 2 to 6

Redoximorphic features—iron segregations in shades of gray, brown, or yellow

Texture of the fine-earth fraction—silt loam, silty clay loam, or clay loam

Content of rock fragments—15 to 70 percent gravel; less than 25 percent in the upper part of some pedons

Reaction—extremely acid to strongly acid

*3Bt horizon:*

Color—hue of 10YR to 2.5YR, value of 3 to 6, and chroma of 4 to 6

Texture of the fine-earth fraction—silty clay loam, silty clay, or clay

Content of rock fragments—0 to 70 percent

Reaction—strongly acid or moderately acid

### Jamesfin Series

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Silty alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 450 feet

*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Dystric Fluventic Eutrudepts

#### Typical Pedon

Jamesfin silt loam, 0 to 3 percent slopes, occasionally flooded, in a pasture; 3,800 feet east of the northwest corner of sec. 12, T. 30 N., R. 7 E.; in Wayne County; USGS Allbright, Missouri, topographic quadrangle; UTM coordinates 4,130,821 meters Northing and 746,255 meters Easting, Zone 15, NAD27.

Ap—0 to 6 inches; dark brown (10YR 3/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; very friable; common very fine and fine roots; many fine tubular pores; slightly acid; gradual smooth boundary.

Bw1—6 to 23 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; moderate very fine and fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; neutral; gradual wavy boundary.

Bw2—23 to 41 inches; dark yellowish brown (10YR 4/4) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; many faint dark brown (10YR 3/3) organic stains; slightly acid; gradual wavy boundary.

BC1—41 to 53 inches; yellowish brown (10YR 5/4) silt

loam; common fine distinct pale brown (10YR 6/3) mottles; moderate very fine and fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; few fine prominent black (10YR 2/1) iron-manganese masses; 1 percent chert gravel; moderately acid; gradual wavy boundary.

BC2—53 to 90 inches; brown (10YR 5/3) silt loam; common coarse faint light gray (10YR 7/2) iron depletions and common medium distinct brown (7.5YR 4/4) iron concentrations; weak fine prismatic structure parting to moderate fine subangular blocky; friable; many fine tubular pores; many medium and coarse prominent black (10YR 2/1) iron-manganese masses; moderately acid.

#### Range in Characteristics

*Thickness of the solum:* 40 to more than 60 inches

*Ap or A horizon:*

Color—hue of 10YR or 7.5 YR, value of 3 or 4, and chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 3 percent

Reaction—moderately acid to slightly alkaline

*Bw horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 6, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 5 percent

Reaction—moderately acid to slightly alkaline

*BC or 2BC horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam, loam, or fine sandy loam

Content of rock fragments—0 to 5 percent

Reaction—moderately acid to slightly alkaline

### **Kaintuck Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderately rapid

*Landform:* River valleys

*Position on the landform:* High and low flood plains

*Parent material:* Loamy alluvium over sandy alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 410 feet

*Taxonomic classification:* Coarse-loamy, siliceous, superactive, nonacid, mesic Typic Udifluvents

#### Typical Pedon

Kaintuck loam, 0 to 3 percent slopes, frequently flooded, in a hardwood forest; 1,400 feet east and 2,100 feet north of the southwest corner of sec. 33, T. 30 N., R. 5 E.; in Wayne County; USGS Patterson, Missouri, topographic quadrangle; UTM coordinates 4,123,408 meters Northing and 720,770 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 9 inches; dark brown (10YR 3/3) loam, pale brown (10YR 6/3) dry; moderate very fine and fine subangular blocky structure; very friable; many very fine to coarse roots; many very fine and fine interstitial pores; slightly acid; clear smooth boundary.

C1—9 to 14 inches; dark yellowish brown (10YR 3/4) fine sandy loam; massive; very friable; many very fine to fine, common medium and coarse roots; many very fine and fine interstitial pores; slightly acid; clear smooth boundary.

C2—14 to 20 inches; dark yellowish brown (10YR 3/4) fine sandy loam; massive; very friable; common very fine to coarse roots; many very fine and fine interstitial pores; slightly acid; clear wavy boundary.

C3—20 to 36 inches; dark yellowish brown (10YR 3/4) fine sandy loam; massive; very friable; common very fine to coarse roots; many very fine and fine interstitial pores; slightly acid; clear wavy boundary.

C4—36 to 50 inches; dark yellowish brown (10YR 3/6) loamy fine sand; single grain; loose; common very fine and fine roots; many very fine and fine interstitial pores; slightly acid; gradual wavy boundary.

C5—50 to 65 inches; dark yellowish brown (10YR 3/6) loamy fine sand; single grain; loose; many very fine and fine interstitial pores; neutral; gradual wavy boundary.

C6—65 to 80 inches; dark yellowish brown (10YR 3/6) loamy fine sand; single grain; loose; many very fine and fine interstitial pores; slightly acid.

#### Range in Characteristics

*A horizon:*

Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4

Texture of the fine-earth fraction—loam

Content of rock fragments—0 to 35 percent gravel; 0 to 5 percent cobbles

Reaction—moderately acid to neutral

*C horizon (upper part):*

- Color—hue of 5YR, 7.5YR, or 10YR; value of 3 to 6; and chroma of 2 to 6
- Texture of the fine-earth fraction—sandy loam, fine sandy loam, or loam
- Content of rock fragments—0 to 35 percent gravel; 0 to 5 percent cobbles
- Reaction—moderately acid to neutral

*C horizon (lower part):*

- Color—hue of 5YR, 7.5YR, or 10YR; value of 3 to 6; and chroma of 2 to 6
- Texture of the fine-earth fraction—stratified sand, loamy sand, loamy fine sand, sandy loam, or fine sandy loam
- Content of rock fragments—0 to 60 percent gravel; 0 to 10 percent cobbles
- Reaction—moderately acid to neutral

**Killarney Series**

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Moderately well drained

*Permeability:* Moderate above the fragipan; very slow in the fragipan

*Landform:* Mountains

*Position on the landform:* Lower backslopes and footslopes

*Parent material:* Colluvial materials from loess and residuum from rocks of igneous origin

*Slope range:* Moderately steep to steep (15 to 35 percent)

*Elevation:* 650 feet

*Taxonomic classification:* Loamy-skeletal, mixed, active, mesic Typic Fragiudults

**Typical Pedon**

Killarney very cobbly silt loam, in an area of Killarney-Frenchmill complex, 15 to 45 percent slopes, rubbly, in a forest; 200 feet east and 2,600 feet north of the southwest corner of sec. 35, T. 33 N., R. 5 E.; in Madison County; USGS Rhodes Mountain topographic quadrangle; UTM coordinates 4,153,723 meters Northing and 723,525 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed leaves, twigs, and roots, abrupt wavy boundary.

A—1 to 5 inches; very dark grayish brown (10YR 3/2) very cobbly silt loam, gray (10YR 6/1) dry; moderate medium granular structure; friable; many fine and medium roots; 35 percent rhyolite gravel, 20 percent rhyolite cobbles, and 1 percent rhyolite stones; strongly acid; clear smooth boundary.

E1—5 to 10 inches; brown (10YR 5/3) very cobbly silt loam, very pale brown (10YR 8/2) dry; weak thin platy structure parting to moderate medium subangular blocky; friable; many fine and medium roots and few coarse; 30 percent rhyolite gravel and 15 percent rhyolite cobbles; strongly acid; gradual smooth boundary.

E2—10 to 16 inches; pale brown (10YR 6/3) very cobbly silt loam, very pale brown (10YR 8/3) dry; weak thin platy structure parting to moderate medium subangular blocky; friable; common fine and medium roots; 30 percent rhyolite gravel and 20 percent rhyolite cobbles; very strongly acid; clear smooth boundary.

BE—16 to 22 inches; light yellowish brown (10YR 6/4) extremely cobbly silt loam; moderate fine subangular blocky structure; friable; common fine and medium roots; 25 percent rhyolite gravel and 25 percent rhyolite cobbles; very strongly acid; clear wavy boundary.

Bt—22 to 32 inches; light yellowish brown (10YR 6/4) very gravelly silt loam; common fine dark yellowish brown (10YR 4/6) mottles; moderate fine and medium subangular blocky structure; friable; many fine and medium roots and few coarse; continuous clay films; 40 percent rhyolite gravel and 15 percent rhyolite cobbles; very strongly acid; abrupt wavy boundary.

2Btx1—32 to 41 inches; yellowish brown (10YR 5/6) extremely stony silt loam; few medium strong brown (7.5YR 5/6) mottles; weak very coarse prismatic structure parting to weak medium platy structure parting to weak medium subangular blocky; very firm, brittle; few medium roots; discontinuous clay films on vertical faces of peds; many coarse light brownish gray (10YR 6/2) soft iron depletions pedogenic between peds; 30 percent gravel, 20 percent cobbles, and 20 percent rhyolite stones; very strongly acid; clear smooth boundary.

2Btx2—41 to 48 inches; strong brown (7.5YR 4/6) very gravelly silt loam; common medium distinct dark yellowish brown (10YR 4/6) mottles; weak very coarse prismatic structure parting to weak medium platy structure parting to weak medium subangular blocky; very firm, brittle; few fine roots; continuous clay films on vertical faces of peds; common coarse brown (7.5YR 5/2) soft iron depletions pedogenic between peds; 40 percent rhyolite gravel and 15 percent rhyolite cobbles; very strongly acid; abrupt smooth boundary.

3Bt—48 to 55 inches; strong brown (7.5YR 5/6) extremely gravelly loam; many fine prominent reddish brown (5YR 5/3) mottles; moderate

medium subangular blocky structure; firm; few fine and medium roots; continuous clay films on faces of peds; common coarse pinkish gray (7.5YR 6/2) soft iron depletions pedogenic between peds; 42 percent gravel and 18 percent rhyolite cobbles; very strongly acid; clear smooth boundary.

4Btx<sup>1</sup>—55 to 64 inches; strong brown (7.5YR 5/6) extremely cobbly loam; weak medium platy structure parting to weak fine subangular blocky; very firm, brittle; few fine roots; continuous clay films on faces of peds; 40 percent gravel and 30 percent rhyolite cobbles; very strongly acid; abrupt smooth boundary.

4Btx<sup>2</sup>—64 to 73 inches; strong brown (7.5YR 4/6) extremely cobbly loam; few medium prominent reddish brown (5YR 5/3) and few fine distinct yellowish red (5YR 4/6) mottles; weak fine subangular blocky structure; very firm, brittle; few fine roots; few coarse pinkish gray (7.5YR 6/2) soft iron depletions pedogenic between peds; 35 percent gravel and 30 percent rhyolite cobbles; very strongly acid.

#### Range in Characteristics

*Depth to the 2Btx horizon:* 26 to 34 inches

*Depth to bedrock:* More than 60 inches

#### *A horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—35 to 60 percent

Reaction—very strongly acid to moderately acid

#### *E and BE horizons:*

Color—hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Content of rock fragment—15 to 50 percent

Reaction—very strongly acid to moderately acid

#### *Bt horizon:*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 to 6; and chroma of 4 to 6

Redoximorphic features—iron segregations in shades of brown or gray

Texture of the fine-earth fraction—silt loam

Content of rock fragments—35 to 60 percent

Reaction—very strongly acid or strongly acid

#### *2Btx horizon:*

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 2 to 6

Redoximorphic features—iron segregations in shades of brown or gray

Texture of the fine-earth fraction—silt loam or loam

Content of rock fragments—25 to 75 percent

Reaction—extremely acid or very strongly acid

#### *3Bt horizon:*

Color—hue of 7.5YR, 5YR, or 2.5YR; value of 3 to 5; and chroma of 4 to 6

Texture of the fine-earth fraction—loam or clay loam

Content of rock fragments—15 to 60 percent

Reaction—very strongly acid or strongly acid

## Malden Series

*Depth class:* Very deep

*Drainage class:* Excessively drained

*Permeability:* Rapid

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Sandy alluvial sediments

*Slope range:* 0 to 3 percent

*Elevation:* 360 feet

*Taxonomic classification:* Mixed, thermic Typic Udipsamments

#### Typical Pedon

Malden loamy fine sand, in an area of Malden loamy fine sand, 0 to 3 percent slopes; in a cultivated field; 1,250 feet south and 350 feet east of the northwest corner of sec. 31, T. 29 N., R. 11 E.; USGS Dongola, Missouri, topographic quadrangle; UTM coordinates 4,113,820 meters Northing and 243,700 meters Easting, Zone 16, NAD27.

Ap—0 to 6 inches; dark yellowish brown (10YR 3/4) loamy fine sand; weak fine subangular blocky structure; very friable; many very fine roots; slightly acid; clear smooth boundary.

Bw1—6 to 23 inches; strong brown (7.5YR 4/6) loamy sand; weak fine and medium subangular blocky structure; very friable; common very fine roots; strongly acid; gradual smooth boundary.

Bw2—23 to 37 inches; strong brown (7.5YR 4/6) loamy sand; weak fine and medium subangular blocky structure; very friable; moderately acid; gradual smooth boundary.

C1—37 to 50 inches; strong brown (7.5YR 4/6) sand; single grain; loose; moderately acid; clear smooth boundary.

C2—50 to 80 inches; brown (7.5YR 4/4) sand; single grain; loose; moderately acid.

#### Range in Characteristics

#### *Ap horizon:*

Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 3 or 4

Texture of the fine-earth fraction—loamy fine sand  
 Content of rock fragments—none  
 Reaction—strongly acid to neutral

*Bw horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 4 to 6  
 Texture of the fine-earth fraction—loamy sand or loamy fine sand  
 Content of rock fragments—none  
 Reaction—strongly acid to slightly acid

*C horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6  
 Texture of the fine-earth fraction—sand or fine sand  
 Content of rock fragments—none  
 Reaction—strongly acid to slightly acid

## **Marquand Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow

*Landform:* Hillslopes

*Position on the landform:* Footslopes

*Parent material:* Silty and loamy slope alluvium derived from loess, colluvium, and alluvium

*Slope range:* 3 to 8 percent

*Elevation:* 700 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Aquic Hapludults

### **Typical Pedon**

Marquand silt loam, 3 to 8 percent slopes, in a cultivated field; 2,300 feet north and 650 feet west of southeast corner of sec. 1, T. 29 N., R. 7 E.; in Wayne County; USGS Gipsy, Missouri, topographic quadrangle; UTM coordinates 4,121,800 meters Northing and 746,520 meters Easting, Zone 15, NAD27.

Ap—0 to 10 inches; dark yellowish brown (10YR 4/4) silt loam, very pale brown (10YR 7/4), dry; weak medium platy structure parting to moderate very fine granular; friable; many very fine to medium roots; many very fine to fine vesicular and common medium tubular pores; few fine iron-manganese concretions; moderately acid; abrupt wavy boundary.

Bt1—10 to 17 inches; yellowish brown (10YR 5/6) silty clay loam; moderate very fine and fine subangular blocky structure; friable; many very fine to fine roots; many very fine to fine vesicular and few medium tubular pores; few faint clay films on faces

of peds; few fine iron-manganese concretions; very strongly acid; clear wavy boundary.

Bt2—17 to 24 inches; pale brown (10YR 6/3) silty clay loam; moderate very fine and fine angular blocky structure; friable; many very fine roots; few very fine to fine vesicular and few medium tubular pores; few distinct light gray (10YR 7/1) silt coats and few faint clay films on faces of peds; many fine and medium prominent grayish brown (10YR 5/2) iron depletions; common fine and medium prominent reddish yellow (7.5YR 6/8) masses of oxidized iron; very strongly acid; gradual wavy boundary.

2Bt3—24 to 34 inches; yellowish brown (10YR 5/6) and pale brown (10YR 6/3) silty clay loam; weak medium prismatic structure parting to moderate very fine and fine angular blocky; firm; few very fine roots; common very fine to fine vesicular pores; few faint clay films on faces of peds; many fine and medium prominent grayish brown (10YR 5/2) iron depletions; common fine and medium prominent brownish yellow (10YR 6/8) masses of oxidized iron; common fine prominent iron-manganese concretions; very strongly acid; gradual wavy boundary.

2Bt4—34 to 43 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to moderate very fine and fine angular blocky; firm; few very fine and fine vesicular pores; few faint clay films on faces of peds; many fine and medium prominent grayish brown (10YR 5/2) iron depletions; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron; common fine iron-manganese concretions; very strongly acid; gradual wavy boundary.

2Bt5—43 to 52 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent yellowish brown (10YR 5/6) silt loam; weak medium prismatic structure parting to moderate very fine and fine angular blocky; firm; few very fine and fine vesicular pores; few distinct clay films on faces of peds; many fine and medium distinct grayish brown (10YR 5/2) iron depletions; common fine iron-manganese concretions; very strongly acid; gradual wavy boundary.

3Bt6—52 to 67 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium angular blocky structure; very firm; few very fine and fine vesicular pores; common faint clay films on faces of peds; many fine prominent grayish brown (10YR 5/2) iron depletions; common fine distinct masses of oxidized iron; very strongly acid; gradual wavy boundary.

3Bt7—67 to 80 inches; 90 percent red (2.5YR 4/6) and 10 percent yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium angular blocky structure; very firm; few very fine vesicular pores; common faint clay films on faces of peds; many medium prominent light brownish gray (10YR 6/2) iron depletions; common fine prominent reddish yellow (7.5YR 6/8) masses of oxidized iron; 2 percent subangular chert gravel; very strongly acid.

#### Range in Characteristics

*Thickness of the solum:* More than 60 inches

*A or Ap horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 1 percent

Reaction—moderately acid or slightly acid

*E horizon:*

Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 8

Texture of the fine-earth fraction—silt loam or silt

Content of rock fragments—0 to 1 percent

Reaction—moderately acid or slightly acid

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 1 percent

Reaction—very strongly acid to moderately acid

*2Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—silty clay loam or silt loam

Content of rock fragments—0 to 7 percent

Reaction—very strongly acid or strongly acid

*3Bt horizon:*

Color—hue of 2.5YR to 10YR, value of 3 to 6, and chroma of 4 to 8

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—clay loam, silt loam, or silty clay loam

Content of rock fragments—0 to 15 percent

Reaction—very strongly acid or strongly acid

## Memphis Series

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* Ridges and hillslopes

*Position on the landform:* Summits, backslopes, and footslopes

*Parent material:* Loess

*Slope range:* 3 to 15 percent

*Elevation:* 520 feet

*Taxonomic classification:* Fine-silty, mixed, active, thermic Typic Hapludalfs

### Typical Pedon

Memphis silt loam, 5 to 9 percent slopes, eroded, in a pasture; 2,400 feet south and 50 feet east of the northwest corner of sec. 28, T. 26 N., R. 11 E.; in Stoddard County; USGS Dexter, Missouri, topographic quadrangle; UTM coordinates 4,083,955 meters Northing and 243,400 meters Easting, Zone 16, NAD27.

Ap—0 to 6 inches; dark yellowish brown (10YR 4/4) silt loam, very pale brown (10YR 7/3), dry; weak very fine and fine granular structure; friable; many very fine and fine roots; common very fine and fine pores; slightly acid; abrupt smooth boundary.

BA—6 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular and weak fine and medium subangular blocky structure; friable; many very fine and fine roots; few fine vesicular and many very fine and fine tubular pores; 30 percent wormcasts; moderately acid; clear smooth boundary.

Bt1—12 to 19 inches; dark yellowish brown (10YR 4/6) silt loam; weak fine subangular blocky structure; friable; common very fine and fine roots; common fine vesicular and many very fine and fine tubular pores; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; 1 percent wormcasts; strongly acid; gradual smooth boundary.

Bt2—19 to 38 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; few fine vesicular and common very fine and fine tubular pores; few light gray (10YR 7/1) silt coats on faces of peds, few black stains on faces of peds, and few faint brown (10YR 4/3) clay films; very strongly acid; gradual smooth boundary.

Bt3—38 to 58 inches; yellowish brown (10YR 5/6) silty clay loam; weak fine and medium subangular blocky structure; firm; few very fine and fine roots; few fine vesicular and few very fine and fine tubular

pores; common brown (10YR 4/3) clay films and silt coats on faces of peds; very strongly acid; gradual smooth boundary.

Bt4—58 to 72 inches; dark yellowish brown (10YR 4/6) silt loam; few fine prominent gray (10YR 6/1) and few fine prominent light brownish gray (10YR 6/2) iron depletions; weak fine and medium subangular blocky structure; firm; few fine and medium roots; few fine vesicular and common very fine and fine tubular pores; few light gray (10YR 7/1) silt coats and few faint brown (10YR 4/3) clay films; very strongly acid.

#### Range in Characteristics

##### *Ap* horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 5, chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—very strongly acid to neutral

##### *BA* or *Bt* horizon (upper part):

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—very strongly acid to neutral

##### *Bt* horizon:

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—none

Reaction—very strongly acid to moderately acid

##### *C* horizon:

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—strongly acid to moderately acid

## **Minnith Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderately slow

*Landform:* Hillslopes

*Position on the landform:* Summits, shoulders, and backslopes

*Parent material:* Loess and loamy residuum from sandstone

*Slope range:* 8 to 30 percent

*Elevation:* 450 feet

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

#### Typical Pedon

Minnith silt loam, 8 to 15 percent slopes, in a fescue pasture; 3,750 feet east and 1,900 feet south of the northwest corner of sec. 15, T. 36 N., R. 9 E.; (within survey 93) in St. Genevieve County; USGS Minnith, Missouri, topographic quadrangle; UTM coordinates 4,190,540 meters Northing and 762,150 meters Easting, Zone 15, NAD27.

Ap—0 to 7 inches; dark brown (10YR 4/3) silt loam, very pale brown (10YR 7/3) dry; moderate fine and very fine granular structure; friable; many fine and very fine roots; neutral; clear smooth boundary.

E—7 to 12 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure parting to moderate fine granular; friable; common fine and very fine roots; slightly acid; clear smooth boundary.

BE—12 to 18 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and very fine subangular blocky structure; friable; common fine and very fine roots; medium acid; clear smooth boundary.

Bt1—18 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; common fine and very fine roots; common faint clay films on faces of peds; common thin clay depletions; strongly acid; clear smooth boundary.

Bt2—24 to 34 inches; dark yellowish brown (10YR 4/4) silty clay loam, weak medium prismatic structure parting to moderate fine subangular blocky; firm; common very fine and fine roots; common distinct clay films on faces of peds; common thin clay depletions; very strongly acid; gradual smooth boundary.

2Bt3—34 to 48 inches; dark yellowish brown (10YR 4/4) clay loam; weak fine subangular blocky structure; firm; few very fine roots; few distinct clay films on faces of peds; common medium distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual smooth boundary.

2Bt4—48 to 59 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; firm; few very fine roots; few faint clay films on faces of peds; common coarse distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual smooth boundary.

2C—59 to 85 inches; strong brown (7.5YR 5/6) loam; massive except for few vertical faces; firm; few very fine roots; few faint clay flows on vertical faces; common medium prominent pinkish gray (7.5YR

6/2) clay depletions; common fine black stains; medium acid; abrupt wavy boundary.  
R—85 inches; sandstone.

### Range in Characteristics

*Depth to the 2Bt horizon:* 24 to 40 inches

*Ap or A horizon:*

Color—hue of 10YR, value of 3 or 4, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Reaction—strongly acid to neutral

*E or BE horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam

Reaction—strongly acid to neutral

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Reaction—very strongly acid to neutral

*2Bt horizon:*

Color—hue of 5YR, 7.5YR, or 10YR; value of 4 or 5; and chroma of 3 to 8

Redoximorphic features—iron depletions or segregations in shades of brown, gray, or yellow

Texture of the fine-earth fraction—loam or clay loam

Content of rock fragments—0 to 5 percent

Reaction—very strongly acid to neutral

*2C horizon:*

Color—hue of 5YR, 7.5YR, or 10YR; value of 4 or 5; and chroma of 3 to 6

Redoximorphic features—iron depletions or segregations in shades of brown, gray, or yellow

Texture of the fine-earth fraction—sandy clay loam, loam, or clay loam

Content of rock fragments—0 to 5 percent

Reaction—strongly acid to neutral

## Moniteau Series

*Depth class:* Very deep

*Drainage class:* Poorly drained

*Permeability:* Moderately slow

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Silty alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 460 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Typic Endoaqualfs

*Taxadjunct features:* The Moniteau soils in the survey area have an active clay activity class, rather than superactive as defined by the Moniteau series.

This difference, however, does not affect the usefulness or behavior of the soils.

### Typical Pedon

Moniteau silt loam, 0 to 3 percent slopes, rarely flooded, in a pasture; 4,200 feet east and 400 feet north of the southwest corner of sec. 1, T. 30 N., R. 7 E.; in Wayne County; USGS Allbright, Missouri, topographic quadrangle; UTM coordinates 4,131,112 meters Northing and 746,473 meters Easting, Zone 15, NAD27.

Ap—0 to 6 inches; brown (10YR 5/3) silt loam, light gray (10YR 7/2), dry; moderate very fine and fine granular structure; friable; strongly acid; clear smooth boundary.

Eg—6 to 15 inches; grayish brown (10YR 5/2) and gray (10YR 5/1) silt loam, very pale brown (10YR 8/2), dry; moderate very fine and fine subangular blocky structure; friable; many fine prominent dark yellowish brown (10YR 4/6) iron-manganese masses; strongly acid; gradual smooth boundary.

Btg1—15 to 33 inches; gray (10YR 5/1) and grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine angular blocky; friable; few faint clay films on faces of peds; many fine and medium prominent dark yellowish brown (10YR 4/6) iron-manganese masses; neutral; abrupt smooth boundary.

Btg2—33 to 52 inches; grayish brown (10YR 5/2) and gray (10YR 5/1) silt loam; moderate medium prismatic structure parting to moderate fine angular blocky; firm; few faint clay films on faces of peds; many fine and medium prominent dark yellowish brown (10YR 4/6) iron-manganese masses; 1 percent chert gravel; neutral; clear smooth boundary.

Btg3—52 to 62 inches; grayish brown (10YR 5/2) silt loam; moderate medium prismatic structure parting to moderate fine angular blocky; firm; many fine prominent dark yellowish brown (10YR 4/6) iron-manganese masses; many fine distinct masses of oxidized iron; 2 percent chert gravel; slightly alkaline; gradual wavy boundary.

Btg4—62 to 72 inches; grayish brown (10YR 5/2) silt loam; moderate medium prismatic structure parting to moderate fine angular blocky; firm; many fine prominent dark yellowish brown (10YR 4/6) iron-manganese masses; many fine distinct

masses of oxidized iron; 2 percent chert gravel; slightly alkaline; gradual wavy boundary.

2Btg5—72 to 78 inches; grayish brown (10YR 5/2) gravelly loam; moderate medium prismatic structure parting to moderate fine angular blocky; firm; many fine prominent light yellowish brown (10YR 6/4) iron-manganese masses; many fine distinct masses of oxidized iron; 20 percent chert gravel; slightly alkaline.

#### Range in Characteristics

*Thickness of the solum:* 36 to 60 inches or more

#### *A or Ap horizon:*

Color—hue of 10YR, value of 4 or 5, and chroma of 1 to 3

Texture of the fine-earth fraction—silt loam

Reaction—strongly acid to neutral

#### *Eg or E horizon:*

Color—hue of 10YR, value of 4 to 7, and chroma of 1 or 2

Texture of the fine-earth fraction—silt loam

Reaction—very strongly acid to slightly

#### *Btg horizon:*

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 3 percent

Reaction—very strongly acid to neutral

#### *2Btg horizon and Cg horizon (if it occurs):*

Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—silt loam, clay loam, or silty clay loam

Content of rock fragments—0 to 30 percent

Reaction—strongly acid to slightly alkaline

### **Oaklimeter Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate

*Landform:* Lowlands

*Position on the landform:* Natural levees

*Parent material:* Silty alluvium

*Slope range:* 0 to 1 percent

*Elevation:* 350 feet

*Taxonomic classification:* Coarse-silty, mixed, active, thermic Fluvaquentic Dystrudepts

#### Typical Pedon

Oaklimeter silt loam, 0 to 1 percent slopes, in a cultivated field; 300 feet north and 1,950 feet west of the southeast corner of sec. 20, T. 28 N., R 9 E.; USGS Sturdivant, Missouri, topographic quadrangle; UTM coordinates 4,106,540 meters Northing and 760,060 meters Easting, Zone 15, NAD27.

Ap—0 to 9 inches; 50 percent dark yellowish brown (10YR 4/4) and 50 percent yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; friable; neutral; clear smooth boundary.

Bw1—9 to 25 inches; light yellowish brown (10YR 6/4) silt loam; moderate fine subangular blocky structure; friable; very few pale brown (10YR 6/3) silt coats and very few brown (7.5YR 4/3) clay films; many fine black (10YR 2/1) iron-manganese masses; strongly acid; gradual smooth boundary.

Bw2—25 to 36 inches; 50 percent dark yellowish brown (10YR 4/4) and 50 percent yellowish brown (10YR 5/4) silt loam; strong medium prismatic structure parting to moderate fine subangular blocky; friable; many fine black (10YR 2/1) iron-manganese masses; very strongly acid; clear smooth boundary.

BEb—36 to 47 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent light yellowish brown (10YR 6/4) silt loam; strong medium prismatic structure parting to moderate medium subangular blocky; friable; many fine black (10YR 2/1) iron-manganese masses; common strong brown (7.5YR 5/8) masses of oxidized iron; strongly acid; gradual smooth boundary.

Btg1—47 to 63 inches; 50 percent gray (10YR 6/1) and 50 percent yellowish brown (10YR 5/4) silty clay loam; strong medium prismatic structure parting to moderate medium subangular blocky; friable; few faint dark yellowish brown (10YR 4/4) clay films on all faces of peds; many strong brown (7.5YR 5/8) masses of oxidized iron; common fine black (10YR 2/1) iron-manganese masses; strongly acid; gradual smooth boundary.

Btg2—63 to 75 inches; grayish brown (10YR 5/2) silty clay loam; weak fine and medium subangular blocky structure; friable; few distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; many strong brown (7.5YR 5/8) masses of oxidized iron; common fine black (10YR 2/1) iron-manganese masses; strongly acid; clear smooth boundary.

BC—75 to 92 inches; yellowish brown (10YR 5/4) silt

loam; weak fine and medium subangular blocky structure; friable; many strong brown (7.5YR 5/8) masses of oxidized iron; common fine black (10YR 2/1) iron-manganese masses; strongly acid.

### Range in Characteristics

#### horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—very strongly acid or strongly acid, unless limed

#### Bw horizon:

Color—hue of 7.5 YR or 10YR, value of 4 or 5, and chroma of 3 or 4

Redoximorphic features—iron depletions in shades of gray in some pedons

Texture of the fine-earth fraction—silt loam or silt

Content of rock fragments—none

Reaction—very strongly acid or strongly acid, unless limed

#### BEb or EBb horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 4

Redoximorphic features—iron-manganese stains and masses

Texture of the fine-earth fraction—silt or silt loam

Content of rock fragments—none

Reaction—very strongly acid or strongly acid

#### Bt horizon (if it occurs):

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2

Redoximorphic features—iron-manganese stains and masses

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—very strongly acid or strongly acid

#### BC horizon:

Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 or 4

Redoximorphic features—iron-manganese stains and masses

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—none

Reaction—very strongly acid or strongly acid

## Poynor Series

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* Hillslopes

*Position on the landform:* Shoulders, footslopes, and summits

*Parent material:* Gravelly colluvium over clayey residuum from dolostone

*Slope range:* 8 to 15 percent

*Elevation:* 650 feet

*Taxonomic classification:* Loamy-skeletal over clayey, siliceous, semiactive, mesic Typic Paleudults

### Typical Pedon

Poynor gravelly silt loam, in an area of Poynor-Clarksville-Scholten complex, 8 to 15 percent slopes, stony, in a hardwood forest; 1,900 feet north and 1,100 feet east of the southwest corner of sec. 22, T. 29 N., R. 7 E.; in Wayne County; USGS Lowndes, Missouri, topographic quadrangle; UTM coordinates 4,116,510 meters Northing and 742,204 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; slightly decomposed plant material; abrupt wavy boundary.

A—1 to 3 inches; dark grayish brown (10YR 4/2) gravelly silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; very friable; many very fine to fine roots, common medium roots and few coarse roots; many fine tubular pores; 1 percent chert stones, 5 percent chert cobbles, and 25 percent chert gravel; strongly acid; clear smooth boundary.

E—3 to 12 inches; yellowish brown (10YR 5/4) very gravelly silt loam, very pale brown (10YR 7/3) dry; moderate fine subangular blocky structure; very friable; few coarse roots and common very fine to medium roots; many fine tubular pores; 5 percent chert cobbles and 30 percent chert gravel; very strongly acid; clear wavy boundary.

Bt1—12 to 23 inches; strong brown (7.5YR 4/6) extremely gravelly silty clay loam; moderate very fine and fine angular blocky structure; firm; common very fine to fine roots, few medium and coarse roots; many fine tubular pores; common distinct clay films on faces of peds; 5 percent chert cobbles and 60 percent chert gravel; very strongly acid; clear wavy boundary.

2Bt2—23 to 40 inches; 50 percent reddish brown (2.5YR 4/4) and 50 percent yellowish brown (10YR 5/4) gravelly clay; weak medium prismatic structure parting to moderate fine angular blocky; very firm; few very fine to coarse roots; common fine tubular pores; common distinct clay films on faces of peds; 2 percent chert cobbles and 18

percent chert gravel; very strongly acid; gradual wavy boundary.

3Bt3—40 to 60 inches; 50 percent reddish brown (2.5YR 4/4) and 50 percent yellowish brown (10YR 5/4) very stony clay; few medium and coarse prominent light brownish gray (10YR 6/2) mottles; weak medium prismatic structure parting to moderate very fine and fine angular blocky; very firm; few fine roots and few coarse roots; common fine tubular pores; common distinct clay films on faces of peds; 5 percent chert cobbles, 10 percent chert stones, and 20 percent chert gravel; very strongly acid; gradual wavy boundary.

3Bt4—60 to 80 inches; 50 percent reddish brown (2.5YR 4/4) and 50 percent yellowish brown (10YR 5/4) very gravelly clay; common medium and coarse prominent light brownish gray (10YR 6/2) mottles; moderate fine and medium angular blocky structure; very firm; few fine roots and few coarse roots; common fine tubular pores; common distinct clay films on faces of peds; 35 percent chert gravel; very strongly acid.

#### Range in Characteristics

*Depth to the 2Bt horizon:* 14 to 40 inches

*Depth to bedrock:* 80 inches or more

#### *A horizon:*

Color—hue of 10YR, value of 2 to 6, and chroma of 1 to 4

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—15 to 35 percent

Reaction—extremely acid to moderately acid

#### *E horizon:*

Color—hue of 10YR, value of 2 to 6, and chroma of 1 to 4

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—20 to 50 percent

Reaction—extremely acid to moderately acid

#### *Bt or BE horizon (if it occurs):*

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—35 to 75 percent

Reaction—very strongly acid or strongly acid

#### *2Bt horizon:*

Color—hue of 2.5YR to 10YR, value of 3 to 5, and chroma of 3 to 8

Texture of the fine-earth fraction—clay

Content of rock fragments—0 to 20 percent

Reaction—very strongly acid or strongly acid

#### *3Bt horizon:*

Color—hue of 2.5YR to 10YR, value of 3 to 5, and chroma of 3 to 8 with gray seams

Texture of the fine-earth fraction—clay

Content of rock fragments—0 to 35 percent

Reaction—extremely acid to strongly acid

## Relfe Series

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Excessively drained

*Permeability:* Rapid

*Landform:* River valleys

*Position on the landform:* Low and high flood plains

*Parent material:* Gravelly alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 520 feet

*Taxonomic classification:* Sandy-skeletal, siliceous, mesic Mollic Udifluvents

#### Typical Pedon

Relfe gravelly sandy loam, 0 to 3 percent slopes, frequently flooded, in a forest; 1,500 feet south and 2,800 feet west of the northeast corner of sec. 28, T. 32 N., R. 8 E.; in Madison County; USGS Marquand topographic quadrangle; UTM coordinates 4,146,349 meters Northing and 750,332 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 6 inches; dark yellowish brown (10YR 3/4) gravelly sandy loam, brown (10YR 5/3) dry; weak very fine granular structure; very friable; many very fine and fine roots; many very fine interstitial pores; 16 percent chert gravel and 2 percent chert cobbles; neutral; clear wavy boundary.

C1—6 to 15 inches; dark yellowish brown (10YR 4/6) very gravelly coarse sand; single grain; loose; common very fine to coarse roots; many very fine interstitial pores; 38 percent chert gravel; neutral; clear wavy boundary.

C2—15 to 28 inches; brown (10YR 5/3) extremely gravelly coarse sand; single grain; loose; common very fine and fine roots; many very fine interstitial pores; 65 percent chert gravel and 3 percent chert cobbles; neutral; clear wavy boundary.

C3—28 to 64 inches; yellowish brown (10YR 5/4) very gravelly coarse sand; single grain; very friable; few very fine and fine roots; many very fine interstitial pores; 48 percent chert gravel and 5 percent chert cobbles; neutral.

### Range in Characteristics

*Depth to bedrock:* 60 inches or more

*A or Ap horizon:*

Color—hue of 10YR or 7.5YR, value of 3, and chroma of 2 to 4

Texture of the fine-earth fraction—coarse sandy loam or sandy loam

Content of rock fragments—0 to 35 percent

Reaction—strongly acid to neutral

*C horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6

Texture of the fine-earth fraction—coarse sand, loamy coarse sand, or sand

Content of rock fragments—35 to 75 percent

Reaction—strongly acid to neutral

## Rueter Series

*Depth class:* Very deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderate

*Landform:* Hillslopes

*Position on the landform:* Backslopes

*Parent material:* Colluvium over residuum derived from cherty dolostone

*Slope range:* 15 to 35 percent

*Elevation:* 480 feet

*Taxonomic classification:* Loamy-skeletal, siliceous, active, mesic Typic Paleudalfs

### Typical Pedon

Rueter very gravelly silt loam, in an area of Alred-Rueter complex, 15 to 35 percent slopes, very stony, in a hardwood forest; 2,200 feet north and 1,750 feet east of the southwest corner of sec. 11, T. 28 N., R. 5 E.; in Wayne County; USGS Greenville SW, Missouri, topographic quadrangle; UTM coordinates 4,110,020 meters Northing and 724,470 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; slightly decomposed plant material; abrupt wavy boundary.

A—1 to 3 inches; brown (10YR 4/3) very gravelly silt loam; moderate very fine and fine granular structure; very friable; many very fine to fine roots, common medium roots and common coarse roots; many very fine to fine and common medium interstitial pores; 35 percent subangular chert gravel; very strongly acid; clear smooth boundary.

E—3 to 9 inches; brown (10YR 5/3) gravelly silt loam; weak very fine subangular blocky structure; friable;

many very fine to fine roots, common medium roots and common coarse roots; many very fine to fine and common medium tubular pores; 25 percent subangular chert gravel; very strongly acid; clear smooth boundary.

BE—9 to 15 inches; brown (7.5YR 5/4) very gravelly silt loam; moderate very fine and fine subangular blocky structure; friable; many very fine to fine roots, common medium roots and few coarse roots; many very fine and fine tubular pores; 35 percent subangular chert gravel; very strongly acid; clear wavy boundary.

Bt1—15 to 24 inches; 80 percent strong brown (7.5YR 5/6) and 20 percent yellowish red (5YR 4/6) very gravelly silt loam; moderate very fine and fine subangular blocky structure; firm; few very fine to fine roots and few medium roots; many very fine and fine tubular pores; common distinct clay films on faces of peds and few prominent very pale brown (10YR 7/3) silt coats; 50 percent subangular chert gravel; very strongly acid; clear wavy boundary.

Bt2—24 to 38 inches; strong brown (7.5YR 4/6) extremely gravelly loam; moderate very fine and fine subangular blocky structure; firm; few very fine to medium roots; many very fine and fine tubular pores; common distinct clay films on faces of peds and few prominent very pale brown (10YR 7/3) silt coats; common fine prominent black (10YR 2/1) iron-manganese masses; 5 percent subangular chert cobbles and 55 percent subangular chert gravel; very strongly acid; gradual wavy boundary.

2Bt3—38 to 46 inches; 65 percent strong brown (7.5YR 4/6) and 35 percent red (2.5YR 4/6) very gravelly clay loam; moderate fine subangular blocky structure; firm; few very fine and fine roots; many very fine and fine tubular pores; common prominent clay films on faces of peds; 10 percent subangular chert cobbles and 45 percent subangular chert gravel; strongly acid; clear wavy boundary.

3Bt4—46 to 59 inches; 70 percent red (2.5YR 4/6) and 30 percent strong brown (7.5YR 5/8) clay; strong fine and medium angular blocky structure; very firm; few very fine and fine roots; many very fine and fine tubular pores; common prominent clay films on faces of peds; 14 percent subangular chert gravel; strongly acid; gradual wavy boundary.

3Bt5—59 to 70 inches; 50 percent strong brown (7.5YR 5/8) and 50 percent red (2.5YR 4/6) gravelly clay; moderate fine angular blocky structure; firm; few very fine and fine roots; common very fine and fine tubular pores; common

prominent clay films on faces of peds; 20 percent subangular chert gravel; strongly acid; gradual wavy boundary.

3Bt6—70 to 80 inches; 75 percent red (2.5YR 4/6) and 25 percent yellowish red (5YR 5/8) gravelly clay; moderate fine angular blocky structure; very firm; few very fine and fine roots; common very fine and fine tubular pores; common prominent clay films on faces of peds; 5 percent subangular chert cobbles and 15 percent subangular chert gravel; strongly acid.

#### Range in Characteristics

*Thickness of the solum:* More than 60 inches

*Depth to bedrock:* More than 60 inches

#### A horizon:

Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—35 to 60 percent

Reaction—very strongly acid to moderately acid

#### E horizon:

Color—hue of 10YR, value of 4 to 7, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—20 to 50 percent

Reaction—very strongly acid to moderately acid

#### BE and Bt horizons:

Color—hue of 10YR to 2.5YR, value of 3 to 6, and chroma of 3 to 8

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—35 to 75 percent

Reaction—very strongly acid or strongly acid

#### 2Bt horizon:

Color—hue of 10YR to 10R, value of 3 to 7, and chroma of 1 to 8

Texture of the fine-earth fraction—clay loam, silty clay loam, silty clay, or clay

Content of rock fragments—30 to 60 percent

Reaction—strongly acid or moderately acid

#### 3Bt horizon:

Color—hue of 10YR to 10R, value of 3 to 7, and chroma of 1 to 8

Texture of the fine-earth fraction—clay

Content of rock fragments—5 to 60 percent

Reaction—strongly acid or moderately acid

### Sandbur Series

*Depth class:* Very deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Rapid

*Landform:* River valleys

*Position on the landform:* Low flood plains

*Parent material:* Loamy alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 470 feet

*Taxonomic classification:* Coarse-loamy, siliceous, superactive, nonacid, mesic Mollic Udifluvents

#### Typical Pedon

Sandbur fine sandy loam, in an area of Relfe-Sandbur complex, 0 to 3 percent slopes, frequently flooded, in a hardwood forest; 500 feet west and 400 feet north of the southeast corner of sec. 26, T. 30 N., R. 5 W.; in Shannon County; USGS Round Spring, Missouri, topographic quadrangle; UTM coordinates 4,124,640 meters Northing and 637,460 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 7 inches; dark brown (10YR 3/3) fine sandy loam, brown (10YR 5/3), dry; weak fine granular structure; very friable; many fine and medium roots; many very fine interstitial pores; 15 percent chert gravel; moderately acid; clear smooth boundary.

C1—7 to 15 inches; brown (10YR 4/3) fine sandy loam; weak fine granular structure; very friable; many fine roots and common medium roots; many very fine interstitial pores; moderately acid; clear smooth boundary.

C2—15 to 25 inches; dark brown (7.5YR 3/4) fine sandy loam; weak fine granular structure; very friable; common fine roots; many very fine interstitial pores; moderately acid; clear smooth boundary.

C3—25 to 38 inches; brown (7.5YR 4/3) fine sandy loam; moderate medium prismatic structure; very friable; common fine and medium roots; many very fine interstitial pores; moderately acid; clear smooth boundary.

C4—38 to 50 inches; brown (7.5YR 4/3) fine sandy loam; single grain; loose; common fine and medium roots; many very fine interstitial pores; moderately acid; clear smooth boundary.

2C5—50 to 60 inches; dark brown (7.5YR 3/4) very gravelly sandy loam; single grain; loose; few fine and medium roots; many very fine interstitial pores; 50 percent rounded chert gravel; moderately acid.

### Range in Characteristics

#### *A or Ap horizon:*

Color—hue of 10YR, value of 3, and chroma of 2 or 3

Texture of the fine-earth fraction—fine sandy loam

Content of rock fragments—0 to 15 percent

Reaction—moderately acid to neutral

#### *C horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 6

Texture of the fine-earth fraction—stratified fine sand, loamy fine sand, fine sandy loam, loam, or silt loam

Content of rock fragments—0 to 15 percent

Reaction—moderately acid to neutral

#### *2C horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 1 to 6

Texture of the fine-earth fraction—loamy sand, loamy fine sand, or sandy loam

Content of rock fragments—35 to 75 percent

Reaction—moderately acid to neutral

## Scholten Series

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate above the fragipan; very slow in the fragipan and moderate below the fragipan

*Landform:* Hillslopes

*Position on the landform:* Backslopes and shoulders

*Parent material:* Gravelly colluvium derived from cherty dolostone

*Slope range:* 3 to 45 percent

*Elevation:* 680 feet

*Taxonomic classification:* Loamy-skeletal, siliceous, active, mesic Typic Fragiudults

### Typical Pedon

Scholten gravelly silt loam, in an area of Yelton-Scholten complex, 8 to 15 percent slopes, in a hardwood forest; 3,050 feet south and 700 feet west of the northeast corner of sec. 4, T. 29 N., R. 8 E.; USGS Gipsy, Missouri, topographic quadrangle; UTM coordinates 4,121,945 meters Northing and 751,358 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 4 inches; brown (10YR 4/3) gravelly silt loam; moderate very fine and fine granular structure; very friable; common very fine to medium roots; 15

percent subangular chert gravel; strongly acid; clear wavy boundary.

E—4 to 9 inches; yellowish brown (10YR 5/4) gravelly silt loam; moderate very fine and fine subangular blocky structure; very friable; common very fine to medium roots; 20 percent subangular chert gravel; very strongly acid; clear wavy boundary.

Bt1—9 to 19 inches; strong brown (7.5YR 4/6) very gravelly silty clay loam; moderate very fine and fine subangular blocky structure; firm; few very fine to medium roots; common faint brown (7.5YR 4/4) clay films on all faces of peds and few yellowish brown (10YR 5/4) silt coats; 5 percent subangular chert cobbles and 30 percent subangular chert gravel; very strongly acid; abrupt wavy boundary.

2Btx—19 to 29 inches; 95 percent light yellowish brown (10YR 6/4) and 5 percent red (2.5YR 4/6) extremely gravelly silt loam; weak very coarse prismatic structure; very firm; few very fine roots; few very fine tubular pores; 80 percent brittle; few distinct dark yellowish brown (10YR 4/4) clay films; common light brownish gray (10YR 6/2) iron depletions; 15 percent subangular chert cobbles and 45 percent subangular chert gravel; very strongly acid; gradual broken boundary.

3Bt1—29 to 44 inches; 70 percent strong brown (7.5YR 5/6) and 30 percent red (2.5YR 4/8) gravelly clay; weak very fine and fine angular blocky structure; firm; few very fine roots; 40 percent brittle; few distinct dark yellowish brown (10YR 4/4) clay films; 5 percent subangular chert cobbles and 15 percent subangular chert gravel; very strongly acid; gradual wavy boundary.

3Bt2—44 to 60 inches; 70 percent red (2.5YR 4/8) and 30 percent strong brown (7.5YR 5/6) gravelly clay; moderate very fine and fine angular blocky structure; firm; few very fine roots; few prominent dark yellowish brown (10YR 4/4) clay films; 5 percent subangular chert cobbles and 10 percent subangular chert gravel.

### Range in Characteristics

*Depth to the 2Btx horizon:* 14 to 36 inches

#### *Ap or A horizon:*

Color—hue of 10YR, value of 3 to 5, chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Content of rock fragments—15 to 60 percent

Reaction—extremely acid to moderately acid

#### *E horizon:*

Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—20 to 50 percent  
Reaction—extremely acid to moderately acid

*Bt horizon:*

Color—hue of 10YR to 5YR, value of 4 to 6,  
chroma of 4 to 6  
Redoximorphic features—iron segregations in  
shades of gray or brown just above the fragipan  
in some pedons  
Texture of the fine-earth fraction—loam, silt loam,  
clay loam, or silty clay loam  
Content of rock fragments—30 to 60 percent  
Reaction—very strongly acid or strongly acid

*2Btx horizon:*

Color—hue of 10YR to 2.5YR, value of 4 to 6,  
chroma of 3 to 6  
Redoximorphic features—iron segregations in  
shades of red, brown, or gray  
Texture of the fine-earth fraction—loam, silt loam,  
clay loam, or silty clay loam  
Content of rock fragments—30 to 75 percent  
Reaction—very strongly acid or strongly acid

*3Bt horizon:*

Color—hue of 2.5YR to 7.5YR, value of 3 to 6, and  
chroma of 4 to 8  
Redoximorphic features—iron segregations in  
shades of brown, yellow, or gray  
Texture of the fine-earth fraction—clay loam, silty  
clay loam, silty clay, or clay  
Content of rock fragments—12 to 60 percent  
Reaction—very strongly acid or strongly acid

## Secesh Series

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate

*Landform:* River valleys

*Position on the landform:* High flood plains and low  
stream terraces

*Parent material:* About 2 feet of loamy alluvium over  
gravelly residuum or alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 610 feet

*Taxonomic classification:* Fine-loamy, siliceous,  
active, mesic Ultic Hapludalfs

### Typical Pedon

Secesh gravelly silt loam, in an area of Tilk-Secesh complex, 0 to 3 percent slopes, occasionally flooded, in a pasture; 2,800 feet east and 2,200 feet north of the southwest corner of sec. 9, T. 29 N., R. 7 E.; USGS Lowndes, Missouri, topographic quadrangle;

UTM coordinates 4,119,908 meters Northing and 741,047 meters Easting, Zone 15, NAD27.

Ap1—0 to 4 inches; dark brown (10YR 3/3) gravelly silt loam, brown (10YR 5/3) dry; moderate very fine and fine granular structure; very friable; many very fine and fine roots; many fine tubular pores; 15 percent chert gravel; strongly acid; clear smooth boundary.

Ap2—4 to 10 inches; dark yellowish brown (10YR 3/4) silt loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine subangular blocky structure; very friable; many very fine and fine roots; many fine tubular pores; 10 percent chert gravel; moderately acid; abrupt smooth boundary.

Bt1—10 to 16 inches; dark yellowish brown (10YR 4/4) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; few faint clay films and few prominent black (10YR 2/1) organic stains on faces of peds; 10 percent chert gravel; moderately acid; clear wavy boundary.

Bt2—16 to 26 inches; brown (7.5YR 4/4) gravelly silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; few faint clay films on faces of peds; 15 percent chert gravel; strongly acid; gradual irregular boundary.

2Bt3—26 to 36 inches; brown (7.5YR 4/4) gravelly loam; moderate very fine and fine subangular blocky structure; friable; few very fine and fine roots; many fine tubular pores; few faint clay films on faces of peds; 30 percent chert gravel; strongly acid; clear wavy boundary.

2BC—36 to 54 inches; brown (7.5YR 4/4) very gravelly coarse sandy loam; moderate very fine and fine subangular blocky structure; friable; few very fine and fine roots; many fine tubular pores; few faint clay films on faces of peds; 5 percent chert cobbles and 45 percent chert gravel; strongly acid; gradual wavy boundary.

2C—54 to 80 inches; dark yellowish brown (10YR 4/4) extremely gravelly sandy clay loam; massive; friable; many tubular pores; many fine prominent black (10YR 2/1) iron-manganese masses; 20 percent chert cobbles and 50 percent chert gravel; strongly acid.

### Range in Characteristics

*Thickness of the solum:* 21 to more than 60 inches

*Ap or A horizon:*

Color—hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 15 percent  
Reaction—strongly acid to slightly acid

*AB horizon (if it occurs):*

Color—hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 2 to 4  
Texture of the fine-earth fraction—loam or silt loam  
Content of rock fragments—0 to 15 percent  
Reaction—strongly acid or moderately acid

*Bt horizon:*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 or 5; and chroma of 4 to 8  
Texture of the fine-earth fraction—loam or silt loam  
Content of rock fragments—0 to 25 percent  
Reaction—very strongly acid to moderately acid

*2Bt horizon:*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 or 5; and chroma of 4 to 8  
Texture of the fine-earth fraction—sandy loam, loam, sandy clay loam, or silt loam  
Content of rock fragments—5 to 50 percent  
Reaction—very strongly acid to moderately acid

*2BC or 2C horizon:*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 or 5; and chroma of 4 to 8  
Texture of the fine-earth fraction—coarse sandy loam, sandy loam, sandy clay loam, loam, or silt loam  
Content of rock fragments—35 to 75 percent  
Reaction—very strongly acid to moderately acid

## Syenite Series

*Depth class:* Moderately deep (20 to 40 inches)

*Drainage class:* Well drained

*Permeability:* Moderately slow

*Landform:* Mountains

*Position on the landform:* Shoulders and backslopes

*Parent material:* Loess and the underlying loamy residuum from granite

*Slope range:* 8 to 25 percent

*Elevation:* 1,005 feet

*Taxonomic classification:* Fine-loamy, mixed, active, mesic Typic Hapludults

### Typical Pedon

Syenite silt loam; in an area of Hassler-Syenite complex, 8 to 25 percent slopes, bouldery, in a forest; 550 feet south and 1,700 feet east of the northwest corner of sec. 32, T. 34 N., R. 6 E.; in Madison County; USGS Rhodes Mountain topographic quadrangle; UTM coordinates 4,165,709 meters

Northing and 729,669 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed leaves, twigs, and roots.

A—1 to 4 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate very fine granular structure; very friable; many very fine to medium roots; 7 percent granite gravel, 2 percent granite cobbles, and 1 percent granite stones; very strongly acid; abrupt wavy boundary.

E—4 to 9 inches; yellowish brown (10YR 5/4) silt loam, light yellowish brown (10YR 6/4) dry; weak thin platy structure parting to weak fine granular; friable; many very fine roots and few medium and coarse; 8 percent granite gravel and 2 percent granite cobbles; very strongly acid; clear wavy boundary.

Bt1—9 to 14 inches; strong brown (7.5YR 4/6) gravelly loam; moderate very fine subangular blocky structure; friable; common very fine to medium roots and few coarse; few faint clay films on faces of peds and few distinct brown (10YR 4/3) silt coats; 25 percent granite gravel, 4 percent granite cobbles, and 1 percent granite stones; very strongly acid; clear wavy boundary.

Bt2—14 to 19 inches; dark yellowish brown (10YR 4/6) gravelly loam; moderate very fine subangular blocky structure; friable; common very fine and fine roots and few medium; few faint clay films; 20 percent granite gravel and 5 percent granite boulders; very strongly acid; abrupt wavy boundary.

2Bt3—19 to 29 inches; yellowish brown (10YR 5/6) bouldery loam; weak fine subangular blocky structure; firm; common very fine and fine roots; few distinct clay films and common light gray (10YR 7/2) silt coats and few dark grayish brown (10YR 4/2) silt coats; 5 percent granite gravel and 10 percent granite boulders; very strongly acid; abrupt wavy boundary.

2R—29 inches; granite bedrock.

### Range in Characteristics

*Depth to bedrock:* 20 to 40 inches

*A horizon:*

Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 10 percent

Reaction—very strongly acid to moderately acid

*E horizon:*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam  
 Content of rock fragments—0 to 10 percent  
 Reaction—very strongly acid to moderately acid

**Bt horizon:**

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6  
 Texture of the fine-earth fraction—loam, silt loam, clay loam, or silty clay loam  
 Content of rock fragments—0 to 30 percent  
 Reaction—very strongly acid or strongly acid

**2Bt or 2BC horizon (if it occurs):**

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 or 4  
 Texture of the fine-earth fraction—loam  
 Content of rock fragments—5 to 30 percent  
 Reaction—very strongly acid or strongly acid

**Tilk Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderately rapid

*Landform:* River valleys

*Position on the landform:* Low stream terraces

*Parent material:* Loamy and sandy alluvium with a high content of rock fragments

*Slope range:* 0 to 5 percent

*Elevation:* 590 feet

*Taxonomic classification:* Loamy-skeletal, siliceous, active, mesic Ultic Hapludalfs

**Typical Pedon**

Tilk very gravelly coarse sandy loam, 0 to 3 percent slopes, rarely flooded, in a hardwood forest; 650 feet south and 2,400 feet east of the northwest corner of sec. 35, T. 33 N., R. 5 E.; in Madison County; USGS Rhodes Mountain topographic quadrangle; UTM coordinates 4,154,115 meters Northing and 724,190 meters Easting, Zone 15, NAD 27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A1—1 to 2 inches; very dark grayish brown (10YR 3/2) very gravelly coarse sandy loam, pale brown (10YR 6/3) dry; moderate fine granular structure; very friable; many very fine to fine roots and few medium roots; 10 percent chert cobbles and 50 percent chert gravel; moderately acid; abrupt smooth boundary.

A2—2 to 8 inches; dark brown (10YR 3/3) very gravelly loam, pale brown (10YR 6/3) dry; moderate very fine granular structure; friable; many very fine roots, common fine, medium and few coarse roots;

10 percent chert cobbles and 39 percent chert gravel; strongly acid; clear smooth boundary.  
 E—8 to 16 inches; brown (10YR 4/3) extremely gravelly loam; weak fine subangular blocky structure parting to moderate fine granular; friable; common very fine to coarse roots; 2 percent chert stones, 15 percent chert cobbles, and 45 percent chert gravel; very strongly acid; clear smooth boundary.

Bt1—16 to 24 inches; brown (7.5YR 4/4) very cobbly loam; moderate very fine subangular blocky structure; friable; common very fine to fine roots, few medium and coarse roots; common distinct dark yellowish brown (10YR 4/6) clay films; 2 percent chert stones, 15 percent chert cobbles, and 23 percent chert gravel; very strongly acid; clear smooth boundary.

Bt2—24 to 36 inches; strong brown (7.5YR 4/6) extremely gravelly loam; moderate fine subangular blocky structure; friable; few very fine to coarse roots; few distinct dark yellowish brown (10YR 4/6) clay films; 5 percent chert stones, 20 percent chert cobbles, and 48 percent chert gravel; very strongly acid; gradual wavy boundary.

2BC—36 to 47 inches; dark yellowish brown (10YR 4/4) extremely stony coarse sandy loam; weak fine subangular blocky structure; friable; few fine and medium roots; many prominent dark brown (7.5YR 3/4) clay films on rock fragments; 15 percent chert stones, 5 percent chert cobbles, and 50 percent chert gravel; strongly acid; gradual wavy boundary.

2C—47 to 70 inches; dark yellowish brown (10YR 4/4) extremely gravelly coarse sandy loam; massive; friable; few very fine roots; 10 percent chert stones, 15 percent chert cobbles, and 45 percent chert gravel; strongly acid.

**Range in Characteristics**

*Thickness of the solum:* 36 to 70 inches

**A horizon:**

Color—hue of 10YR or 7.5YR, value of 2 or 3, and chroma of 2 to 4

Texture of the fine-earth fraction—sandy loam or loam

Content of rock fragments—35 to 60 percent  
 Reaction—strongly acid to slightly acid

**E horizon:**

Color—hue of 10YR or 7.5YR, value of 4, and chroma of 3 or 4

Texture of the fine-earth fraction—loam or coarse sandy loam

Content of rock fragments—35 to 75 percent

Reaction—very strongly acid to moderately acid

*Bt horizon:*

Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 3 to 6

Texture of the fine-earth fraction—sandy loam or loam

Content of rock fragments—35 to 75 percent

Reaction—very strongly acid to moderately acid

*2BC and 2C horizons:*

Color—hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 4 to 6

Texture of the fine-earth fraction—coarse sandy loam, sandy loam, or loamy coarse sand

Content of rock fragments—35 to 75 percent

Reaction—strongly acid or moderately acid

## **Waben Series**

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Well drained

*Permeability:* Moderately rapid

*Landform:* River valleys

*Position on the landform:* Stream terraces and alluvial-colluvial fans

*Parent material:* Very cherty alluvium and colluvium

*Slope range:* 3 to 15 percent

*Elevation:* 570 feet

*Taxonomic classification:* Loamy-skeletal, siliceous, semiactive, mesic Typic Paleudults

*Taxadjunct features:* The Waben soils in this survey area have low base saturation and are Paleudults, rather than Hapludalfs, as defined in the Waben series. This difference, however, does not affect the usefulness or behavior of the soils.

### **Typical Pedon**

Waben gravelly silt loam, in an area of Aslinger-Waben complex, 3 to 15 percent slopes, in a pasture; 1,675 feet east and 1,100 feet south of the northwest corner of sec. 9, T. 31 N., R. 5 E.; in Madison County; USGS Des Arc NE topographic quadrangle; UTM coordinates 4,140,516 meters Northing and 720,889 meters Easting, Zone 15, NAD 27.

Ap—0 to 6 inches; dark brown (10YR 3/3) gravelly silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; very friable; many very fine and fine roots; 11 percent subrounded chert gravel and 5 percent subrounded chert cobbles; slightly acid; abrupt wavy boundary.

Bt1—6 to 15 inches; dark yellowish brown (10YR 4/4) very gravelly silt loam; moderate very fine and fine subangular blocky structure; friable; common very

fine and fine roots; 41 percent subrounded chert gravel and 15 percent subrounded chert cobbles; slightly acid; clear wavy boundary.

2Bt2—15 to 28 inches; yellowish brown (10YR 5/6) extremely gravelly silt loam; moderate very fine subangular blocky structure; friable; few very fine and fine roots; very few prominent black (10YR 2/1) manganese or iron-manganese stains on rock fragments and few faint discontinuous clay films on faces of peds; 55 percent subrounded chert gravel and 15 percent subrounded chert cobbles; moderately acid; clear wavy boundary.

2Bt3—28 to 34 inches; strong brown (7.5YR 5/6) very gravelly loam; moderate very fine and fine subangular blocky structure; firm; few prominent black (10YR 2/1) manganese or iron-manganese stains on rock fragments and common faint discontinuous clay films on faces of peds; 45 percent subrounded chert gravel and 10 percent subrounded chert cobbles; strongly acid; clear wavy boundary.

2Bt4—34 to 43 inches; strong brown (7.5YR 4/6) very gravelly loam; moderate very fine and fine subangular blocky structure; firm; few prominent light yellowish brown (10YR 6/4) silt coats and very few prominent black (10YR 2/1) manganese or iron-manganese stains on rock fragments and common distinct discontinuous clay films on faces of peds; few fine faint yellowish red (5YR 4/6) masses of iron accumulation; 38 percent subangular chert gravel and 7 percent subangular chert cobbles; strongly acid; gradual wavy boundary.

2Bt5—43 to 54 inches; strong brown (7.5YR 4/6) very gravelly loam; moderate very fine subangular blocky structure; firm; very few prominent black (10YR 2/1) manganese or iron-manganese stains on rock fragments and many distinct discontinuous clay films on faces of peds; 31 percent subangular chert gravel and 5 percent subangular chert cobbles; strongly acid; gradual wavy boundary.

3Bt6—54 to 63 inches; strong brown (7.5YR 5/6) very gravelly clay loam; moderate very fine subangular blocky structure; firm; very few prominent black (10YR 2/1) manganese or iron-manganese stains on rock fragments and many distinct discontinuous clay films on faces of peds; common fine and medium faint yellowish red (5YR 5/6) masses of iron accumulation; 42 percent subangular chert gravel and 5 percent subangular chert cobbles; strongly acid; gradual wavy boundary.

3Bt7—63 to 73 inches; strong brown (7.5YR 5/6)

extremely gravelly clay loam; moderate very fine and fine subangular blocky structure; firm; few prominent black (10YR 2/1) manganese or iron-manganese stains on rock fragments and common distinct discontinuous clay films on faces of peds; many fine and medium faint yellowish red (5YR 5/6) masses of iron accumulation; 55 percent subangular chert gravel and 10 percent subangular chert cobbles; strongly acid; clear wavy boundary.

3Bt8—73 to 84 inches; yellowish red (5YR 5/6) very gravelly clay loam; moderate fine subangular blocky structure; firm; very few prominent black (10YR 2/1) manganese or iron-manganese stains on rock fragments and common distinct discontinuous clay films on faces of peds; 32 percent angular chert gravel and 7 percent angular chert cobbles; strongly acid.

#### Range in Characteristics

*Thickness of the solum:* More than 80 inches

*Depth to bedrock:* More than 80 inches

#### *A or Ap horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—15 to 35 percent

Reaction—strongly acid to slightly acid

#### *E or BE horizon (if it occurs):*

Color—hue of 10YR, value of 4 to 6, and chroma of 3 or 4

Texture of the fine-earth fraction—silt loam or loam

Content of rock fragments—25 to 80 percent

Reaction—strongly acid to slightly acid

#### *Bt horizon:*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 or 5; and chroma of 4 to 6

Redoximorphic features—iron concentrations in shades of brown

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—35 to 70 percent

Reaction—strongly acid to slightly acid

#### *2Bt or 3Bt horizon:*

Color—hue of 10YR, 7.5YR, or 5YR; value of 4 or 5; and chroma of 4 to 6

Redoximorphic features—iron concentrations in shades of brown

Texture of the fine-earth fraction—loam, silt loam, or clay loam

Content of rock fragments—35 to 70 percent

Reaction—strongly acid or moderately acid

## **Wakeland Series**

*Depth class:* Very deep

*Drainage class:* Somewhat poorly drained

*Permeability:* Moderate

*Landform:* River valleys

*Position on the landform:* Low flood plains

*Parent material:* Silty alluvium

*Slope range:* 0 to 2 percent

*Elevation:* 380 feet

*Taxonomic classification:* Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents

### Typical Pedon

Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, in a cultivated field; 1,800 feet south and 1,200 feet east of the northwest corner of sec. 30, T. 27 N., R. 5 E.; in Wayne County; USGS Williamsville, Missouri, topographic quadrangle; UTM coordinates 4,093,530 meters Northing and 716,840 meters Easting, Zone 15, NAD27.

Ap—0 to 6 inches; brown (10YR 5/3) silt loam; moderate very fine and fine subangular blocky structure; very friable; common very fine and fine roots; many fine tubular pores; common fine distinct brown (7.5YR 4/4) masses of oxidized iron; moderately acid; clear smooth boundary.

Bw1—6 to 15 inches; brown (10YR 5/3) silt loam; weak very fine and fine subangular blocky structure; friable; common very fine and fine roots; many fine tubular pores; many medium prominent black (10YR 2/1) iron-manganese masses; common medium prominent dark reddish brown (5YR 3/4) masses of oxidized iron; slightly acid; gradual smooth boundary.

Bw2—15 to 24 inches; brown (10YR 5/3) silt loam; weak very fine and fine subangular blocky structure; friable; few very fine and fine roots; many fine tubular pores; many medium distinct gray (10YR 5/1) iron depletions; common fine prominent strong brown (7.5YR 4/6) masses of oxidized iron; common fine prominent black (10YR 2/1) iron-manganese masses; slightly acid; clear wavy boundary.

Bg1—24 to 33 inches; 60 percent gray (10YR 5/1) and 40 percent brown (10YR 5/3) silt loam; weak very fine and fine subangular blocky structure; friable; few very fine roots; many fine tubular pores; common fine prominent strong brown (7.5YR 4/6) masses of oxidized iron; common fine prominent dark brown (7.5YR 3/3) iron-manganese masses; slightly acid; gradual wavy boundary.

Bg2—33 to 39 inches; 70 percent gray (10YR 5/1) and 30 percent brown (10YR 5/3) silt loam; weak very

fine and fine subangular blocky structure; friable; few very fine roots; many fine tubular pores; common fine prominent strong brown (7.5YR 4/6) masses of oxidized iron; common fine prominent dark brown (7.5YR 3/3) iron-manganese masses; slightly acid; clear wavy boundary.

Bg3—39 to 49 inches; 70 percent gray (10YR 6/1) and 30 percent brown (10YR 5/3) silt loam; weak very fine and fine subangular blocky structure; friable; many fine tubular pores; common fine prominent strong brown (7.5YR 4/6) masses of oxidized iron; common fine prominent dark brown (7.5YR 3/3) iron-manganese masses; slightly acid; gradual wavy boundary.

Bg4—49 to 58 inches; gray (2.5Y 5/1) silt loam; weak very fine and fine subangular blocky structure; friable; many fine tubular pores; common fine prominent dark gray (10YR 4/1) iron-manganese masses; strongly acid; clear smooth boundary.

Ab1—58 to 76 inches; dark gray (2.5Y 4/1) silt loam; weak very fine and fine subangular blocky structure; friable; many fine tubular pores; common fine prominent black (10YR 2/1) iron-manganese masses; strongly acid; clear smooth boundary.

Ab2—76 to 80 inches; black (2.5Y 2/1) silt loam; weak very fine and fine subangular blocky structure; friable; many fine tubular pores; very strongly acid.

#### Range in Characteristics

##### *Ap* or *A* horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Reaction—moderately acid to neutral

##### *Bw* horizon:

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 1 to 4

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—silt loam

Reaction—moderately acid to neutral

##### *Bg* horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 6

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—silt loam; thin strata of fine sandy loam or sandy loam below a depth of 40 inches in some pedons

Reaction—moderately acid to neutral

##### *Ab* horizon:

Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 6

Redoximorphic features—iron segregations in shades of brown, yellow, or gray

Texture of the fine-earth fraction—silt loam

Reaction—very strongly acid to neutral

## Wideman Series

*Depth class:* Very deep

*Drainage class:* Excessively drained

*Permeability:* Moderately rapid

*Landform:* River valleys

*Position on the landform:* High flood plains

*Parent material:* Sandy alluvium

*Slope range:* 0 to 3 percent

*Elevation:* 830 feet

*Taxonomic classification:* Sandy, siliceous, mesic

Typic Udifluvents

#### Typical Pedon

Wideman fine sandy loam, 0 to 3 percent slopes, occasionally flooded, in a hay field; 1,980 feet south and 1,107 feet east of the northwest corner of sec. 13, T. 26 N., R. 5 E.; in Butler County; USGS Hendrickson, Missouri, topographic quadrangle; UTM coordinates 4,087,120 meters Northing and 724,780 meters Easting, Zone 15.

Ap—0 to 9 inches; brown (10YR 4/3) fine sandy loam; pale brown (10YR 6/3) dry; weak medium platy structure; very friable; many fine roots; many fine interstitial pores; few wormcasts; moderately acid; abrupt smooth boundary.

C1—9 to 13 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; very friable; many fine roots; many fine interstitial pores; few wormcasts; moderately acid; abrupt wavy boundary.

C2—13 to 16 inches; dark yellowish brown (10YR 4/4) loamy sand; massive; very friable; common fine roots; many fine interstitial pores; few wormcasts; moderately acid; abrupt wavy boundary.

C3—16 to 21 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; very friable; common fine roots; many fine interstitial pores; moderately acid; abrupt wavy boundary.

C4—21 to 60 inches; yellowish brown (10YR 5/4) loamy fine sand; massive; very friable; few fine roots; many fine interstitial pores; slightly acid.

**Range in Characteristics***A horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—sandy loam

Reaction—strongly acid to neutral

*C horizon:*

Color—hue of 10YR or 7.5YR, value of 4 to 7, and chroma of 2 to 6

Texture of the fine-earth fraction—loamy sand or fine sand with thin strata of loamy very fine sand or finer textures

Content of rock fragments—none; thin lenses that contain 1 to 75 percent gravel in some pedons

Reaction—strongly acid to neutral

**Wilbur Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate

*Landform:* River valleys

*Position on the landform:* Low flood plains

*Parent material:* Silty alluvium

*Slope range:* 0 to 2 percent

*Elevation:* 510 feet

*Taxonomic classification:* Coarse-silty, mixed, superactive, mesic Fluvaquentic Eutrudepts

**Typical Pedon**

Wilbur silt loam, 0 to 2 percent slopes, frequently flooded, in a cultivated field; 900 feet south and 1,300 feet west of the northeast corner of survey 220, T. 30 N., R. 13 E.; in Cape Girardeau County; USGS Gordonville, Missouri, topographic quadrangle; UTM coordinates 4,131,908 meters Northing and 264,915 meters Easting, Zone 16, NAD27.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

Bw—9 to 29 inches; brown (10YR 5/3) silt loam; common medium distinct light brownish gray (10YR 6/2) iron depletions; few fine faint brown (7.5YR 4/4) iron concentrations; weak fine granular structure; friable; few fine roots; few fine pores; slightly acid; clear smooth boundary.

C1—29 to 48 inches; brown (10YR 5/3) silt loam; common medium distinct light gray (10YR 7/2) iron depletions; few fine faint brown (7.5YR 4/4) iron concentrations; massive; friable; many fine pores; moderately acid; clear smooth boundary.

C2—48 to 60 inches; brown (10YR 5/3) silt loam;

many medium distinct strong brown (7.5YR 5/6) iron concentrations; many medium distinct light brownish gray (10YR 6/2) iron depletions; weak fine subangular blocky; friable; few black stains; moderately acid.

**Range in Characteristics***Ap horizon:*

Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—moderately acid to neutral

*Bw horizon:*

Color—hue of 10YR, value of 4 to 6, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—moderately acid to neutral

*C or Cg horizon:*

Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 6

Texture of the fine-earth fraction—silt loam

Reaction—moderately acid to neutral

**Winfield Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate

*Landform:* Ridges

*Position on the landform:* Summits

*Parent material:* Loess

*Slope range:* 3 to 8 percent

*Elevation:* 480 feet

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

**Typical Pedon**

Winfield silt loam, 3 to 8 percent slopes, eroded, in a cultivated field; 300 feet east and 300 feet south of the northwest corner of sec. 9, T. 27 N., R. 8 E.; in Wayne County; USGS McGee, Missouri, topographic quadrangle; UTM coordinates 4,099,180 meters Northing and 748,820 meters Easting, Zone 15, NAD27.

Ap1—0 to 3 inches; dark brown (10YR 3/3) silt loam; moderate very fine and fine granular structure; very friable; common very fine roots; common medium vesicular and common very fine vesicular pores; strongly acid; clear smooth boundary.

Ap2—3 to 6 inches; brown (10YR 4/3) silt loam;

moderate very fine and fine granular structure; very friable; common very fine roots; common medium vesicular and common very fine vesicular pores; strongly acid; clear smooth boundary.

- Bt1—6 to 20 inches; yellowish brown (10YR 5/6) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many very fine vesicular pores; few distinct clay films on faces of peds; strongly acid; abrupt smooth boundary.
- Bt2—20 to 26 inches; yellowish brown (10YR 5/6) silty clay loam; moderate very fine and fine subangular blocky structure; firm; few very fine roots; common very fine vesicular pores; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and few prominent light gray (10YR 7/1) silt coats; many medium prominent gray (10YR 5/1) iron depletions; common fine distinct strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.
- Bt3—26 to 34 inches; yellowish brown (10YR 5/6) silt loam; moderate very fine and fine subangular blocky structure; firm; few very fine roots; common very fine vesicular pores; few prominent light gray (10YR 7/1) silt coats and few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; many medium prominent gray (10YR 5/1) iron depletions; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.
- Bt4—34 to 52 inches; brownish yellow (10YR 6/6) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine vesicular pores; few prominent light gray (10YR 7/1) silt coats and few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; many medium prominent gray (10YR 5/1) iron depletions; common fine and medium distinct strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.
- Btg—52 to 60 inches; light brownish gray (10YR 6/2) silt loam; moderate very fine and fine subangular blocky structure; friable; common very fine vesicular pores; few prominent light gray (10YR 7/1) silt coats and few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; many fine and medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid.

#### Range in Characteristics

*Thickness of the solum:* 25 to 65 inches

*Ap or A horizon:*

Color—hue of 10YR, value of 3 to 5, and chroma of 2 or 3

Texture of the fine-earth fraction—silt loam

Reaction—strongly acid to neutral

*E horizon (if it occurs):*

Color—hue of 10YR, value of 4 to 6, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Reaction—strongly acid to slightly acid

*BE horizon (if it occurs):*

Color—hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Reaction—strongly acid to slightly acid

*Bt horizon (upper part):*

Color—hue of 7.5YR, 10YR, or 2.5Y; value of 4 to 6; and chroma of 1 to 6

Redoximorphic features—iron depletions

Texture of the fine-earth fraction—silt loam or silty clay loam

Reaction—very strongly acid to moderately acid

*Bt (lower part), Btg, or Cg horizon:*

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4

Redoximorphic features—iron depletions

Texture of the fine-earth fraction—silt loam

Reaction—strongly acid to neutral

## Wrengart Series

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderately slow

*Landform:* Ridges and hillslopes

*Position on the landform:* Summits, shoulders, and backslopes

*Parent material:* Fine-silty loess over gravelly residuum derived from cherty dolostone

*Slope range:* 2 to 25 percent

*Elevation:* 760 feet

*Taxonomic classification:* Fine-silty, mixed, active, mesic Fragic Oxyaquic Hapludalfs

### Typical Pedon

Wrengart silt loam, 9 to 14 percent slopes, eroded, in a hayfield; 800 feet south and 1,650 feet east of the northwest corner of sec. 11, T. 33 N., R. 10 E.; USGS Sedgewickville, Missouri, topographic quadrangle; UTM coordinates 4,161,540 meters Northing and 242,925 meters Easting, Zone 16, NAD27.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam; weak very fine granular structure; friable;

common very fine and fine roots; many very fine and fine vesicular pores; moderately acid; clear smooth boundary.

BA—5 to 8 inches; dark yellowish brown (10YR 4/4) silt loam; weak very fine subangular blocky structure; friable; common very fine and fine roots; common very fine to fine vesicular and common medium vesicular pores; slightly acid; clear smooth boundary.

Bt1—8 to 17 inches; yellowish brown (10YR 5/6) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine and fine roots; common very fine to fine vesicular and common medium vesicular pores; common distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds; very strongly acid; gradual smooth boundary.

Bt2—17 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine and fine roots; common fine vesicular and common medium tubular pores; few faint dark yellowish brown (10YR 4/4) clay films on all faces of peds and few distinct pale brown (10YR 6/3) silt coats; very strongly acid; clear smooth boundary.

Bt3—22 to 39 inches; light yellowish brown (10YR 5/4) silty clay loam; moderate coarse prismatic structure; firm; common very fine and fine roots; common very fine to fine vesicular and common medium tubular pores; few distinct dark yellowish brown (10YR 4/4) clay films on all faces of peds and few distinct light brownish gray (10YR 6/2) silt coats; many fine distinct light brownish gray (10YR 6/2) iron depletions; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron; 1 percent chert gravel; very strongly acid; clear smooth boundary.

2Btx—39 to 55 inches; yellowish brown (10YR 5/6) silt loam; massive; very firm; few very fine roots; many very fine to fine vesicular and common medium tubular pores; few distinct dark grayish brown (10YR 4/2) clay films on all faces of peds and few prominent light brownish gray (10YR 6/2) silt coats; 40 percent brittle; very strongly acid; gradual smooth boundary.

2Bt1—55 to 73 inches; strong brown (7.5YR 5/6) extremely gravelly silt loam; weak fine subangular blocky structure; firm; few faint clay films on all faces of peds and few prominent light yellowish brown (10YR 6/4) silt coats; 5 percent chert cobbles and 65 percent chert gravel; strongly acid; gradual irregular boundary.

2Bt2—73 to 82 inches; 60 percent reddish yellow (7.5YR 6/8) and 40 percent red (2.5YR 4/8) very

gravelly clay loam; weak fine subangular blocky structure; firm; few faint clay films on all faces of peds; 5 percent chert cobbles and 30 percent chert gravel; strongly acid.

### Range in Characteristics

#### *A horizon:*

Color—hue of 10R, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—none

Reaction—strongly acid to neutral

#### *BA or BE horizon:*

Color—hue of 10R, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 7 percent

Reaction—moderately acid to neutral

#### *Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 to 6

Texture of the fine-earth fraction—silt loam or silty clay loam

Content of rock fragments—0 to 5 percent

Reaction—very strongly acid to neutral

#### *2Btx horizon:*

Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 to 6

Texture of the fine-earth fraction—loam, silt loam, or silty clay loam

Content of rock fragments—0 to 35 percent

Reaction—extremely acid to neutral

#### *2Bt horizon:*

Color—hue of 5YR, 7.5YR, or 10YR; value of 3 to 6; and chroma of 2 to 6

Texture of the fine-earth fraction—silt loam, clay loam, or silty clay loam

Content of rock fragments—35 to 70 percent

Reaction—strongly acid to neutral

#### *3Bt horizon (if it occurs):*

Color—hue of 2.5YR to 10YR, value of 3 to 8, and chroma of 2 to 8

Texture of the fine-earth fraction—silty clay or clay

Content of rock fragments—7 to 35 percent

Reaction—strongly acid to neutral

## **Yelton Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate above the fragipan; slow in the fragipan

*Landform:* Ridges and hillslopes

*Position on the landform:* Summits and backslopes

*Parent material:* Loess over colluvium from cherty dolomite and sandstone

*Slope range:* 8 to 15 percent

*Elevation:* 730 feet

*Taxonomic classification:* Fine-loamy, siliceous, active, mesic Typic Fragiudults

### Typical Pedon

Yelton silt loam, in an area of Yelton-Scholten complex, 8 to 15 percent slopes, in a hardwood forest; 2,050 feet north and 1,050 feet west of the southeast corner of sec. 12, T. 30 N., R. 8 E.; USGS Glenallen, Missouri, topographic quadrangle; UTM coordinates 4,130,580 meters Northing and 755,980 meters Easting, Zone 15, NAD27.

Oi—0 to 1 inch; partially decomposed organic matter; abrupt smooth boundary.

A—1 to 2 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; very friable; 5 percent chert gravel; very strongly acid; abrupt wavy boundary.

E—2 to 7 inches; brownish yellow (10YR 6/6) silt loam; moderate fine subangular blocky structure; friable; 5 percent chert gravel; very strongly acid; clear wavy boundary.

Bt1—7 to 22 inches; yellowish red (5YR 5/6) silty clay loam; moderate fine subangular blocky structure; firm; few distinct reddish brown (5YR 4/4) clay films on all faces of peds; 5 percent chert gravel; very strongly acid; clear smooth boundary.

Bt2—22 to 26 inches; dark yellowish brown (10YR 4/4) gravelly silty clay loam; moderate medium subangular blocky structure; firm; few faint brown (7.5YR 4/4) clay films on all faces of peds; many light brownish gray (10YR 6/2) iron depletions; common yellowish brown (10YR 5/8) masses of oxidized iron; 15 percent chert gravel; very strongly acid; abrupt smooth boundary.

2Btx1—26 to 34 inches; yellowish brown (10YR 5/4) extremely gravelly loam; moderate very coarse prismatic structure; very firm; 80 percent brittle; few faint dark yellowish brown (10YR 4/4) clay films on all faces of peds; common light brownish gray (10YR 6/2) iron depletions; common yellowish brown (10YR 5/8) masses of oxidized iron; 60 percent chert gravel; very strongly acid; gradual smooth boundary.

2Btx2—34 to 44 inches; yellowish brown (10YR 5/4) extremely gravelly loam; moderate very coarse prismatic structure; very firm; 80 percent brittle; few faint dark yellowish brown (10YR 4/4) clay

films on all faces of peds; common light brownish gray (10YR 6/2) iron depletions; common yellowish brown (10YR 5/8) masses of oxidized iron; 60 percent chert gravel; very strongly acid; clear wavy boundary.

3Bt1—44 to 65 inches; 50 percent red (2.5YR 4/6) and 50 percent brownish yellow (10YR 6/8) clay; weak very fine and fine subangular blocky; very firm; few faint reddish brown (2.5YR 4/4) clay films on all faces of peds; 5 percent chert gravel and 5 percent chert cobbles; diffuse broken boundary.

3Bt2—65 to 80 inches; 50 percent red (2.5YR 4/8) and 50 percent brownish yellow (10YR 6/8) sandy loam; weak fine subangular blocky; very firm; few faint clay films on all faces of peds; 5 percent chert cobbles and 5 percent chert gravel; very strongly acid.

### Range in Characteristics

*Depth to the fragipan:* 18 to 27 inches

*Ap or A horizon:*

Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 10 percent

Reaction—very strongly acid to slightly acid

*E or BE horizon (if it occurs):*

Color—hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 3 to 6

Texture of the fine-earth fraction—silt loam

Content of rock fragments—0 to 10 percent

Reaction—very strongly acid to slightly acid

*Bt horizon:*

Color—hue of 10YR to 5YR, value of 3 to 6, and chroma of 3 to 8

Texture of the fine-earth fraction—silty clay loam, clay loam, or loam

Content of rock fragments—3 to 30 percent

Reaction—extremely acid to strongly acid

*2Btx horizon:*

Color—hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 2 to 8

Texture of the fine-earth fraction—loam or silt loam

Content of rock fragments—0 to 60 percent

Reaction—extremely acid to strongly acid

*3Bt horizon:*

Color—hue of 10YR to 10R, value of 3 to 7, and chroma of 2 to 8

Texture of the fine-earth fraction—sandy loam, sandy clay loam, clay loam, or clay

Content of rock fragments—0 to 60 percent

Reaction—extremely acid to strongly acid

# Formation of the Soils

---

This section relates the soils in the survey area to the major factors of soil formation. It also describes the geology and physiography of the survey area.

## Factors of Soil Formation

Soil is the product of soil-forming processes acting on accumulated or deposited geologic material. The characteristics of the soil are determined by the type of parent material; the plant and animal life on and in the soil; the climate under which the soil-forming factors were active; topography, or lay of the land; and the length of time these forces have been active.

The parent material affects the kind of soil profile that is formed and in extreme cases determines it almost entirely. Plant and animal life are the active factors of soil formation. The climate determines the amount of water available for leaching and the amount of heat for physical and chemical changes. Together, climate and plant and animal life act on the parent material and slowly change it to a natural body that has genetically related horizons. Topography commonly modifies these other factors. Finally, time is required for changes in the parent material to result in the formation of a soil. Generally, a long time is required for the development of distinct soil horizons.

These factors of soil formation are all so closely interrelated in their effects on the soil that few generalizations can be made about the effect of any one factor unless conditions are specified for the others. Soil formation is complex, and many processes of soil development are still unknown.

## Parent Material

Parent material is the unconsolidated mass from which soil is formed. It determines the chemical and mineral composition of the soil. The soils in Bollinger County formed in loess, residuum, colluvium, alluvium, or in a combination of these materials.

Residuum consists primarily of material weathered from one of the different kinds of rock that occur in the area—granite, sandstone, or cherty dolostone. Shallow soils generally form solely in residuum. Gasconade soils, for example, are underlain at a shallow depth by

dolostone. Deeper soils generally have some loess or colluvium deposits in the upper part of the profile, but have a layer of residuum at some depth within the soil profile.

Colluvium, or hillslope sediment, is the debris which has accumulated on slopes from the weathering of rock. Aslinger, Cornwall, and Waben soils formed in thick colluvial deposits. The upper part of most deep and very deep soils on hillsides consists of colluvium. Killarney and Frenchmill soils formed in colluvium from granite.

Loess is a silty material deposited by the wind. Auxvasse, Memphis, and Winfield soils formed in thick loess. Older, stable parts of the landscape have thin deposits of loess, or have had them in the past. Commonly, the thickness is 18 to 32 inches. The upper part of the Captina, Crider, Deible, Hildebrecht, Minnith, and Wrengart soils is loess. On other, more sloping and less stable parts of the landscape, loess has been eroded from or mixed with the surface layer.

Alluvium is material transported by water and deposited in the nearly level or gently sloping flood plains along rivers and streams. The Castor River and the Whitewater River are major streams. The alluvial material was washed from the watersheds of these rivers and streams and their tributaries. It ranges from silt to sand and gravel. Relfe soils have a high content of gravel and sand. Haymond, Jamesfin, and Wilbur soils are silty. Gladden soils are loamy.

Stream terraces are older flood plains that are now higher than the immediate flood plain because of downcutting of the stream channels to a lower elevation. Bearthicket and Secesh soils formed in old alluvium.

Most deep soils in Bollinger County formed in a combination of loess, colluvium, and residuum. For example, in the Hildebrecht soil, the parent materials are loess (0 to 31 inches), colluvium (31 to 52 inches), and residuum (52 to 80 inches). On the steep slopes, loess is mixed with the gravelly colluvium to a depth of about 18 inches. Parent materials in the Clarksville soil are colluvium that is mixed with loess (0 to 21 inches), a second layer of colluvium (21 to 43 inches), and residuum (43 to 66 inches). The colluvium and residuum formed from cherty dolostone. Alred and

Rueter soils also formed in colluvium and residuum from cherty dolostone.

## Living Organisms

Plants and animals living on or in the soil are active in the soil-forming process. Plants furnish organic material to the soil and bring up plant nutrients from underlying layers to the surface layer. As plants die and decay, they contribute organic matter to the soil. Bacteria and fungi decompose the plant remains and help to incorporate the organic matter into the soil. Burrowing animals and insects loosen and mix various soil horizons.

Trees and other plants in the forest community have significantly affected soil formation (Pritchett, 1979). Mature trees require a large root system for support and a supply of water and nutrients. As the roots decay, soil material from the upper horizons fills the old root channels. The result is pockets of dark material in many forested soils, such as Clarksville soils. The soil in these old root channels has more humus and is more porous than the surrounding soil. Old root channels are most prevalent in the upper part of the subsoil, generally within a depth of about 1.5 feet.

When trees are blown down during periods of high winds, a large amount of soil is unearthed with the roots. These tree-tip mounds are common in the survey area. They alter the topography on a small scale. Although only a small area is affected by one tree, over a period of many years the surface layer is mixed with the underlying soil. The accumulation of this mixing can greatly affect soil formation.

In a relatively short time, human activities have greatly affected the processes of soil formation. The major alterations have resulted in vegetation, drainage of wet areas, and accelerated erosion. Row crops have replaced native grasses and many forested areas. Nearly all of the flood plains and much of the upland areas are now farmed. These changes have increased food production but have had an adverse effect in terms of sustained productivity. Accelerated erosion continues to reduce the potential of many upland soils, and the loss of cropland to urban development is virtually irreversible.

## Climate

Climate has been and still is an important factor of soil formation. Geologic erosion, plant and animal life, and, in more recent times, accelerated erosion all have varied with the climate.

The glacial periods that so greatly affected the soil-forming processes were a result of climatic changes. Thousands of years of cold temperatures resulted in glaciers that moved into the area. Several soil-forming periods have occurred since the last ice sheet left northern Missouri. Geologic evidence indicates that the climate was colder and wetter than the present climate during some soil-forming periods and was warmer during others. The warmer weather and high winds resulted in severe geologic erosion, and much of the area was covered by loess.

High temperatures and adequate rainfall encourage rapid chemical and physical changes. When calcium carbonate and other soluble salts are removed by leaching, soil fertility declines. This type of climate is conducive to the breakdown of minerals and the relocation of clay within the soil. The clay is moved downward into the soil profile, and this downward movement results in the formation of the subsoil.

## Topography

Topography, or relief, affects soil formation through its influence on drainage, runoff, the rate of water infiltration, and geologic erosion. Topography is characterized by the length, shape, aspect, and degree of slope. It is important in determining the pattern and distribution of soils.

The amount of water entering the soil depends on slope, permeability, and the intensity of rainfall. Because runoff is rapid in steep areas, very little water passes through the soil and soil formation is slow. Geologic erosion almost keeps pace with the soil-forming processes. In gently sloping areas, runoff is slow, erosion is minimal, and most of the water passes through the soil. Leaching, the translocation of clay, and other soil-forming processes are intensified in these areas. Soils in these areas generally show maximum profile development.

Soils on steep, south-facing slopes receive more direct sunlight and are drier than similar soils on north-facing slopes. Drier conditions influence soil formation by affecting the kind of vegetation, the susceptibility to erosion, and the cycles of freezing and thawing.

## Time

The degree of profile development is dependent on the length of time that the parent material has been in place and subject to the soil-forming processes. Older soils show the effects of leaching and clay movement and have developed distinct horizons. Young soils show little profile development.

The youngest soils in Bollinger County formed in alluvium. Relfe soils, for example, show little profile development. Alluvial material is added to the surface nearly every year. Bearthicket, Deible, and Secesh soils are older alluvial soils. They are on stream terraces and show moderate profile development.

The oldest soils in the survey area formed in areas at the highest elevations in the county. Captina soils are examples. They have well developed, distinct horizons. The carbonates originally present in their parent material have been leached to a great depth, leaving the soil quite acid throughout. Clay has been concentrated in distinct subsoil horizons through translocation by water. Captina soils have a distinct

fragipan. Although the formation of the fragipan is obscure, it is clear that some time is required for its formation.

Most of the soils in Bollinger County are intermediate in age. Clarksville and Alred soils formed on steep slopes. They have an eluviated subsurface horizon and translocated clay in the subsoil horizons.

The age of a soil, as expressed in profile characteristics, is not necessarily a reflection of time in years, but is a result of the interaction of various soil-forming factors over periods of time. The age is influenced by topography and climate. It is determined by the degree of profile development and not by the years the soil material has existed.



# References

---

- American Association of State Highway and Transportation Officials (AASHTO). 2000. Standard specifications for transportation materials and methods of sampling and testing. 20th edition, 2 volumes.
- American Society for Testing and Materials (ASTM). 2001. Standard classification of soils for engineering purposes. ASTM Standard D 2487-00.
- Beilmann, A., and L. Brenner. 1951. The recent intrusion of forests in the ozarks. *Annals of the Missouri Botanical Garden*.
- Bollinger County agri-facts. 1992.
- Brandle, J.R., D.L. Hintz, and J.W. Sturrock (Editors). 1988. *Windbreak technology*. Elsevier Science Publications.
- Guyette, Rich, and E. McGinnes. 1982. Fire history of a Missouri glade in Missouri. *Transactions of the Missouri Academy of Science*.
- Nelson, Paul. 1987. The terrestrial natural communities of Missouri. Missouri Natural Areas Committee. Department of Natural Resources.
- Pritchett, William L. 1979. Properties and management of forest soils.
- Robinette, G.O. 1972. *Plants/people/and environmental quality*. U.S. Department of the Interior, National Park Service.
- Scholten, H. 1988. Farmstead shelterbelts—protection against wind and snow. University of Minnesota Publication CD-BU-0468.
- Soil Survey Division Staff. 1993. *Soil survey manual*. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
- Soil Survey Staff. 1998. *Keys to soil taxonomy*. 8th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Soil Survey Staff. 1999. *Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys*. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
- United States Department of Agriculture. 2003. *National Soil Survey Handbook*, title 430-VI. [Online] Available: <http://soils.usda.gov/technical/handbook/>.
- United States Department of Agriculture, Soil Conservation Service. 1961. *Land capability classification*. U.S. Department of Agriculture Handbook 210.



# Glossary

---

**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.** The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

**Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.

**Alpha,alpha-dipyridyl.** A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

**Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.

**Area reclaim** (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

**Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.

**Aspect.** The direction in which a slope faces.

**Association, soil.** A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in

inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low .....	0 to 3
Low .....	3 to 6
Moderate .....	6 to 9
High .....	9 to 12
Very high .....	more than 12

**Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

**Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

**Base slope.** A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

**Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

**Bedding system.** A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

**Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

**Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

**Board foot.** A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board 1 foot wide, 1 foot long, and 1 inch thick before finishing.

**Bottom land.** The normal flood plain of a stream, subject to flooding.

- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Cable yarding.** A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.
- California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- 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.
- Channeled.** Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.
- 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.** Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
- Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Clayey soil.** Silty clay, sandy clay, or clay.
- Clearcut.** A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from the adjacent stands.
- 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.
- Closed depression.** A low area completely surrounded by higher ground and having no natural outlet.
- 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.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- Commercial forest.** Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

**Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

**Concretions.** Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

**Conservation cropping system.** Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

**Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

**Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

**Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

**Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

**Cover crop.** A close-growing crop grown primarily to

improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

**Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

**Cropping system.** Growing crops according to a planned system of rotation and management practices.

**Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

**Crown.** The upper part of a tree or shrub, including the living branches and their foliage.

**Culmination of the mean annual increment (CMAI).** The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

**Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.

**Decreasers.** The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

**Deep to water** (in tables). Deep to permanent water during the dry season.

**Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.

**Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

**Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

**Depth to bedrock** (in tables). Bedrock is too near the surface for the specified use.

**Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

**Divided-slope farming.** A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a

crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

**Dolostone.** A carbonate sedimentary rock consisting chiefly (more than 50 percent by weight or by areal percentages under the microscope) of the mineral dolomite.

**Dominant trees.** Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

**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.** An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

**Draw.** A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

**Droughty (in tables).** Soil holds too little water for plants during dry periods.

**Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

**Ecological site.** An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

**Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material

through eluviation are eluvial; those that have received material are illuvial.

**Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

**Eolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

**Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

**Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

**Erodes easily (in tables).** Soil is easily eroded by water.

**Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

*Erosion (geologic).* Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

*Erosion (accelerated).* Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

**Erosion pavement.** A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

**Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

**Even aged.** Refers to a stand of trees in which only small differences in age occur between individual trees. A range of 20 years is allowed.

**Fan terrace.** A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

**Fast intake (in tables).** The rapid movement of water into the soil.

**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 oven-dry 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.** 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.

**Flaggy soil material.** Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

**Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

**Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

**Flooding** (in tables). Soil flooded by moving water from stream overflow or runoff.

**Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.

**Foothill.** A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

**Footslope.** The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

**Forb.** Any herbaceous plant not a grass or a sedge.

**Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.

**Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

**Fragipan.** A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

**Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

**Graded stripcropping.** Growing crops in strips that grade toward a protected waterway.

**Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

**Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

**Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

**Ground water.** Water filling all the unblocked pores of the material below the water table.

**Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

**Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

**Hard to pack** (in tables). Difficult to compact using regular earthwork construction equipment.

**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 out.** To form a flower head.

**Head slope.** A geomorphic component of hills

consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

**Heavy metal.** Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

**High erodibility** (in tables). Soil has an erodibility index greater than 8 and is very susceptible to erosion by water.

**High-residue crops.** Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

**Hill.** A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

**Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:  
*O horizon.*—An organic layer of fresh and decaying plant residue.

*A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon.*—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected

by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*—Soft, consolidated bedrock beneath the soil.

*R layer.*—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic soil groups.** Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Igneous rock.** Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are rhyolite, 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.

**Increasesers.** Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasesers commonly are the shorter plants and the less palatable to livestock.

**Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Infrequent flooding** (in tables). Flooding occurs at an interval that limits riparian plant species.

**Intake rate.** The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time.

Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2 .....	very low
0.2 to 0.4 .....	low
0.4 to 0.75 .....	moderately low
0.75 to 1.25 .....	moderate
1.25 to 1.75 .....	moderately high
1.75 to 2.5 .....	high
More than 2.5 .....	very high

**Interfluve.** An elevated area between two drainageways that sheds water to those drainageways.

**Intermittent stream.** A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

**Invaders.** On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

**Iron depletions.** Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

**Irrigation.** Application of water to soils to assist in production of crops. Methods of irrigation are:

*Basin.*—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

*Border.*—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

*Controlled flooding.*—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

*Corrugation.*—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

*Drip (or trickle).*—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

*Furrow.*—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

*Sprinkler.*—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

*Subirrigation.*—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

**Karst** (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

**Knoll.** A small, low, rounded hill rising above adjacent landforms.

**K<sub>sat</sub>.** Saturated hydraulic conductivity. (See Permeability.)

**Landslide.** The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

**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.

**Loamy soil.** Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

**Loess.** Fine grained material, dominantly of silt-sized particles, deposited by wind.

**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.

**Masses.** Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

**Mean annual increment (MAI).** The average annual increase in volume of a tree during the entire life of the tree.

**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.

**Merchantable trees.** Trees that are of sufficient size to be economically processed into wood products.

**Micro-high.** An area that is 2 to 12 inches higher than the adjacent micro-low.

**Micro-low.** An area that is 2 to 12 inches lower than the adjacent micro-low.

**Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

**Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.

**Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.

**Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.

**Moderately deep soil.** A soil that is 20 to 40 inches deep over bedrock.

**Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.

**Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

**Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

**Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the

greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Mountain.** A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

**Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

**Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

**Nodules.** Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

**Nose slope.** A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

**Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low .....	less than 0.5 percent
Low .....	0.5 to 1.0 percent
Moderately low .....	1.0 to 2.0 percent
Moderate .....	2.0 to 4.0 percent
High .....	4.0 to 8.0 percent
Very high .....	more than 8.0 percent

**Overstory.** The trees in a forest that form the upper crown cover.

**Oxbow.** The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

- Parent material.** The unconsolidated organic and mineral material in which soil forms.
- Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.
- Pedimentation.** A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.
- Pedon.** The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.
- Percolation.** The movement of water through the soil.
- Percolates slowly** (in tables). The slow movement of water through the soil adversely affects the specified use.
- 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.
- Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.
- Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
- Plateau.** An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

- 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.
- Poor filter** (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.
- Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
- Potential native plant community.** See Climax plant community.
- 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 in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid .....	less than 3.5
Extremely acid .....	3.5 to 4.4
Very strongly acid .....	4.5 to 5.0
Strongly acid .....	5.1 to 5.5
Moderately acid .....	5.6 to 6.0
Slightly acid .....	6.1 to 6.5
Neutral .....	6.6 to 7.3
Slightly alkaline .....	7.4 to 7.8
Moderately alkaline .....	7.9 to 8.4
Strongly alkaline .....	8.5 to 9.0
Very strongly alkaline .....	9.1 and higher

**Redoximorphic concentrations.** Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or

manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

**Redoximorphic depletions.** Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

**Redoximorphic features.** Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

**Reduced matrix.** A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

**Regolith.** The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

**Relict stream terrace.** One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

**Relief.** The elevations or inequalities of a land surface, considered collectively.

**Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

**Rill.** A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

**Riser.** The relatively short, steeply sloping area below a terrace tread that grades to a lower terrace tread or base level.

**Riverwash.** Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

**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.

**Rock outcrop.** Exposures of bare bedrock other than lava flows and rock-lined pits.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

**Rubble land.** Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

**Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sandstone.** Sedimentary rock containing dominantly sand-sized particles.

**Sandy soil.** Sand or loamy sand.

**Saprolite.** Unconsolidated residual material underlying the soil and grading to hard bedrock below.

**Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

**Sawlogs.** Logs of suitable size and quality for the production of lumber.

**Scarification.** The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

**Scribner's log rule.** A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

**Seasonal wetness** (in tables). The soil may be wet during the period of desired use. This usually occurs during the winter and early spring.

**Seasonally ponded** (in tables). Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration. Generally occurs during the winter and early spring.

**Sedimentary plain.** An extensive nearly level to gently rolling or moderately sloping area that is underlain by sedimentary bedrock and that has a slope of 0 to 8 percent.

**Sedimentary rock.** Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate,

formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

**Sedimentary uplands.** Land areas of bedrock formed from water- or wind-deposited sediments. They are higher on the landscape than the flood plain.

**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, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Shale.** Sedimentary rock formed by the hardening of a clay deposit.

**Shallow soil.** A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

**Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

**Shelterwood system.** A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

**Shoulder.** The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

**Shoulder slope.** The uppermost inclined surface at the top of a hillside. It is the transition zone from the backslope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

**Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Side slope.** A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

**Silica.** A combination of silicon and oxygen. The mineral form is called quartz.

**Silica-sesquioxide ratio.** The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

**Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

**Siltstone.** Sedimentary rock made up of dominantly silt-sized particles.

**Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

**Sinkhole.** A depression in the landscape where limestone has been dissolved.

**Site class.** A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

**Site curve (50-year).** A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant and codominant trees that are 50 years old or are 50 years old at breast height.

**Site curve (100-year).** A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant and codominant trees that are 100 years old or are 100 years old at breast height.

**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.

**Skid trails.** Pathways along which logs are dragged to a common site for loading onto a logging truck.

**Slash.** The branches, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

**Slick spot.** A small area of soil having a puddle,

crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

**Slickensides.** Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

**Slippage** (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

**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** (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

**Slope alluvium.** Sediment gradually transported on slopes of mountains or hills primarily by alluvial processes and characterized by particle sorting. 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. Sorting of rounded or subrounded pebbles or cobbles and burnished peds distinguish these materials from unsorted colluvial deposits.

**Small stones** (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of 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 over periods of time.

**Soil reaction** (in tables). A measure of acidity or alkalinity of a soil, expressed in pH values, which indicates that the soil reaction is either too high or too low for the intended use.

**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.

**Species.** A single, distinct kind of plant or animal having certain distinguishing characteristics.

**Stickiness (surface)** (in tables). The soil is slippery and sticky when wet and slow to dry.

**Stone line.** A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Strath terrace.** A surface cut formed by the erosion of hard or semiconsolidated bedrock and thinly mantled with stream deposits.

**Stream channel.** The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

**Stream terrace.** One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy*

(laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**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.

**Tailwater.** The water directly downstream of a structure.

**Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

**Terrace.** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

**Terrace** (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

**Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.” The abbreviations (see table 17) are *C*—*clay*, *CL*—*clay loam*, *COS*—*coarse sand*, *COSL*—*coarse sandy loam*, *FS*—*fine sand*, *FSL*—*fine sandy loam*, *L*—*loam*, *LCOS*—*loamy coarse sand*, *LFS*—*loamy fine sand*, *LS*—*loamy sand*, *LVFS*—*loamy very fine sand*, *S*—*sand*, *SC*—*sandy clay*, *SCL*—*sandy clay loam*, *Sl*—*silt*, *SIC*—*silty clay*, *SICL*—*silty clay loam*, *SIL*—*silt loam*, *SL*—*sandy loam*, and *VFSL*—*very fine sandy loam*. Terms used in lieu of texture descriptions are *BR*—*bedrock* and *SPM*—*slightly decomposed plant material*. The texture modifiers that may apply to textural classes are *BY*—*bouldery*, *CB*—*cobbly*, *CBV*—*very cobbly*, *CBX*—*extremely cobbly*, *FLX*—*extremely flaggy*, *GR*—*gravelly*, *GRV*—*very gravelly*, *GRX*—*extremely gravelly*, *SR*—*stratified*, *STV*—*very stony*, and *STX*—*extremely stony*.

**Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

**Toeslope.** The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

**Too acid** (in tables). The soil is so acid that growth of plants is restricted.

**Too clayey** (in tables). The soil is slippery and sticky when wet and slow to dry.

**Too sandy** (in tables). The soil is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

**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.

**Trafficability.** The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

**Tread.** The relatively flat surface that was cut or built by stream or wave action.

**Tuff.** A compacted deposit that is 50 percent or more volcanic ash and dust.

**Unstable fill** (in tables). Risk of caving or sloughing on banks of fill material.

**Upland.** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

**Valley.** An elongated depressional area primarily developed by stream action.

**Valley fill.** In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

**Variiegation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

**Very deep soil.** A soil that is more than 60 inches deep over bedrock.

**Very shallow soil.** A soil that is less than 10 inches deep over bedrock.

**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.

**Water-spreading.** Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.

**Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

**Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

**Wetness** (in tables). The soil is wet during the period of desired use.

**Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

**Windthrow.** The uprooting and tipping over of trees by the wind.

# Tables

---

Table 1.--Temperature and Precipitation  
(Recorded in the period 1961-90 at Marble Hill, Missouri)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have--		Average number of growing degree days*	2 years in 10 will have--			Average number of days with 0.10 inch or more	Average snowfall
				Maximum temperature higher than--	Minimum temperature lower than--		Average	Less than--	More than--		
°F	°F	°F	°F	°F	Units	In	In	In	In	In	
January-----	42.4	20.3	31.3	69	-13	8	2.85	1.00	4.39	5	4.9
February-----	47.5	24.4	36.0	73	-5	14	3.15	1.57	4.52	5	4.4
March-----	59.0	34.3	46.7	81	9	84	5.12	2.54	7.36	7	1.7
April-----	69.9	43.8	56.9	87	22	240	4.14	2.11	5.91	6	0.0
May-----	78.2	52.3	65.3	92	31	472	4.70	2.46	6.66	7	0.0
June-----	86.1	60.6	73.3	98	42	700	3.63	2.09	5.00	6	0.0
July-----	89.8	65.1	77.4	101	49	847	4.04	1.66	6.06	5	0.0
August-----	88.2	62.7	75.5	101	46	787	4.02	2.24	5.59	5	0.0
September---	81.4	55.8	68.6	95	34	558	3.76	1.35	5.76	5	0.0
October-----	71.7	43.3	57.5	89	22	262	3.04	1.13	4.82	5	0.0
November----	58.2	34.6	46.4	80	12	72	4.17	1.98	6.06	6	0.6
December----	45.9	25.1	35.5	70	-2	13	4.18	1.89	6.15	6	1.8
Yearly:											
Average---	68.2	43.5	55.9	---	---	---	---	---	---	---	---
Extreme---	106	-23	---	102	-14	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,056	46.80	39.11	53.86	68	13.4

\* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall  
(Recorded in the period 1961-90 at Marble Hill, Missouri)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 13	Apr. 26	May 10
2 year in 10 later than--	Apr. 8	Apr. 21	May 4
5 year in 10 later than--	Mar. 30	Apr. 11	Apr. 23
First freezing temperature in fall:			
1 yr in 10 earlier than--	Oct. 17	Oct. 5	Sept. 27
2 yr in 10 earlier than--	Oct. 23	Oct. 10	Oct. 1
5 yr in 10 earlier than--	Nov. 4	Oct. 20	Oct. 9

Table 3.--Growing Season

(Recorded in the period 1961-90 at Marble Hill, Missouri)

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	199	167	147
8 years in 10	206	175	154
5 years in 10	218	191	168
2 years in 10	231	207	182
1 year in 10	238	215	189

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
60033	Wrengart silt loam, 5 to 9 percent slopes, eroded-----	18,956	4.8
60046	Minnith silt loam, 15 to 30 percent slopes-----	838	0.2
60053	Winfield silt loam, 3 to 8 percent slopes, eroded-----	12	*
60054	Minnith silt loam, 8 to 15 percent slopes-----	2,274	0.6
60055	Winfield silt loam, 2 to 5 percent slopes-----	110	*
66000	Moniteau silt loam, 0 to 3 percent slopes, occasionally flooded-----	680	0.2
66054	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded-----	2,434	0.6
66055	Haymond silt loam, 0 to 3 percent slopes, occasionally flooded-----	3,605	0.9
73055	Alred-Rueter complex, 15 to 35 percent slopes, very stony-----	2,518	0.6
73100	Wrengart silt loam, 2 to 5 percent slopes-----	2,828	0.7
73101	Wrengart silt loam, 5 to 9 percent slopes-----	14,720	3.7
73139	Poynor-Clarksville-Scholten complex, 8 to 15 percent slopes, stony-----	9,294	2.3
73140	Clarksville-Scholten complex, 15 to 45 percent slopes, very stony-----	58,522	14.7
73141	Firebaugh silt, 3 to 8 percent slopes-----	70	*
73145	Crider silt loam, 3 to 8 percent slopes, eroded-----	569	0.1
73146	Marquand silt loam, 3 to 8 percent slopes-----	1,205	0.3
73150	Caneyville-Bucklick complex, 8 to 15 percent slopes, rocky-----	289	*
73151	Caneyville-Gasconade-Bucklick complex, 15 to 25 percent slopes, rocky---	187	*
73156	Alred-Gepp complex, 8 to 15 percent slopes, stony-----	8,441	2.1
73157	Captina silt loam, 3 to 8 percent slopes-----	12,422	3.1
73223	Coulstone-Bender complex, 15 to 50 percent slopes, very stony-----	23	*
73264	Alred-Wrengart complex, 14 to 35 percent slopes, very stony, rocky-----	86,162	21.7
73265	Captina-Scholten complex, 3 to 8 percent slopes-----	10,584	2.7
73266	Hildebrecht silt loam, 8 to 15 percent slopes, eroded-----	13,068	3.3
73267	Yelton-Scholten complex, 8 to 15 percent slopes-----	12,113	3.0
73269	Brussels-Gasconade-Rock outcrop complex, 30 to 90 percent slopes, very bouldery-----	1,308	0.3
73270	Wrengart silt loam, 9 to 14 percent slopes, eroded-----	16,698	4.2
73343	Captina silt loam, 3 to 8 percent slopes, eroded-----	7,785	2.0
73344	Captina silt loam, 8 to 15 percent slopes, eroded-----	4,588	1.2
73345	Hildebrecht silt loam, 5 to 9 percent slopes-----	5,310	1.3
73346	Hildebrecht silt loam, 5 to 9 percent slopes, eroded-----	5,998	1.5
74644	Deible silt loam, 1 to 3 percent slopes-----	924	0.2
74646	Cornwall silt loam, 3 to 8 percent slopes-----	2,514	0.6
74648	Aslinger silt loam, 3 to 8 percent slopes-----	230	*
74649	Aslinger-Waben complex, 3 to 15 percent slopes-----	2,738	0.7
74679	Higdon silt loam, 0 to 3 percent slopes, rarely flooded-----	1,211	0.3
74680	Moniteau silt loam, 0 to 3 percent slopes, rarely flooded-----	1,236	0.3
74685	Auxvasse silt loam, 2 to 5 percent slopes-----	833	0.2
75379	Kaintuck loam, 0 to 3 percent slopes, frequently flooded-----	570	0.1
75381	Bearthicket silt loam, 0 to 3 percent slopes, rarely flooded-----	2,439	0.6
75395	Jamesfin silt loam, 0 to 3 percent slopes, occasionally flooded-----	2,284	0.6
75408	Secesh silt loam, 0 to 3 percent slopes, rarely flooded-----	1,293	0.3
75409	Relfe sandy loam, 0 to 3 percent slopes, occasionally flooded-----	24	*
75411	Tilk very gravelly sandy loam, 0 to 3 percent slopes, rarely flooded-----	461	0.1
75416	Gladden loam, 0 to 3 percent slopes, occasionally flooded-----	478	0.1
75417	Relfe-Sandbur complex, 0 to 3 percent slopes, frequently flooded-----	6,523	1.6
75426	Gabriel silt loam, 0 to 3 percent slopes, rarely flooded-----	98	*
75428	Tilk, occasionally flooded-Cornwall-Poynor complex, 3 to 15 percent slopes-----	2,162	0.5
75429	Tilk-Secesh complex, 0 to 3 percent slopes, occasionally flooded-----	12,975	3.3
75430	Wideman fine sandy loam, 0 to 3 percent slopes, occasionally flooded-----	1,047	0.3
75451	Gladden silt loam, 0 to 3 percent slopes, occasionally flooded-----	660	0.2
75467	Wilbur silt loam, 0 to 3 percent slopes, frequently flooded-----	789	0.2
75468	Elsah silt loam, 0 to 3 percent slopes, occasionally flooded-----	7,565	1.9
77000	Killarney-Frenchmill complex, 15 to 45 percent slopes, rubbly-----	36	*
77002	Delassus silt loam, 3 to 8 percent slopes-----	12	*
77005	Hassler-Syenite complex, 8 to 25 percent slopes, bouldery-----	14	*
77008	Hassler silt loam, 3 to 15 percent slopes, stony-----	11	*
80000	Calhoun silt loam, 0 to 1 percent slopes-----	14,849	3.7
80001	Oaklimeter silt loam, 0 to 1 percent slopes-----	2,364	0.6
82000	Dubbs silt loam, 0 to 1 percent slopes-----	1,389	0.3
82001	Amagon silt loam, 0 to 1 percent slopes, frequently ponded-----	458	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
82002	Forestdale silty clay loam, 0 to 1 percent slopes, frequently ponded----	674	0.2
82005	Malden loamy fine sand, 0 to 3 percent slopes-----	826	0.2
82006	Bosket fine sandy loam, 1 to 5 percent slopes-----	658	0.2
82007	Bosket loam, 0 to 3 percent slopes, occasionally flooded-----	144	*
82009	Forestdale silty clay loam, 0 to 1 percent slopes-----	908	0.2
82010	Amagon silt loam, 0 to 1 percent slopes-----	3,260	0.8
82011	Crowley silt loam, 0 to 1 percent slopes-----	297	*
86000	Dubbs silt loam, 0 to 3 percent slopes, occasionally flooded-----	915	0.2
86001	Calhoun silt loam, 0 to 1 percent slopes, occasionally flooded-----	5,722	1.4
86002	Falaya silt loam, 0 to 1 percent slopes, occasionally flooded-----	4,710	1.2
86003	Amagon silt loam, 0 to 1 percent slopes, occasionally flooded-----	1,899	0.5
86004	Forestdale silty clay loam, 0 to 1 percent slopes, occasionally flooded--	2,169	0.5
90000	Memphis silt loam, 3 to 8 percent slopes, eroded-----	327	*
90001	Memphis silt loam, 8 to 15 percent slopes, severely eroded-----	472	0.1
99001	Water-----	1,930	0.5
99003	Miscellaneous water-----	7	*
99007	Dam-----	2	*
99015	Udorthents-Water complex-----	517	0.1
	Total-----	397,235	100.0

\* Less than 0.1 percent.

Table 5.--Land Capability and Yields per Acre of Crops

(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	Grain sorghum	Soybeans	Winter wheat
		Bu	Bu	Bu	Bu
60033: Wrengart-----	3e	86	75	32	36
60046: Minnith-----	6e	---	---	---	---
60053: Winfield-----	3e	92	90	36	40
60054: Minnith-----	3e	87	76	32	35
60055: Winfield-----	2e	125	103	40	52
66000: Moniteau-----	3w	90	80	35	41
66054: Wakeland-----	3w	105	90	36	40
66055: Haymond-----	2w	115	95	39	42
73055: Alred-----	7s	---	---	---	---
Rueter-----	7s	---	---	---	---
73100: Wrengart-----	2e	119	104	44	48
73101: Wrengart-----	3e	113	99	42	46
73139: Poynor-----	6e	---	---	---	---
Clarksville-----	6e	---	---	---	---
Scholten-----	6e	---	---	---	---
73140: Clarksville-----	7s	---	---	---	---
Scholten-----	7s	---	---	---	---
73141: Firebaugh-----	3e	80	75	32	35
73145: Crider-----	3e	100	85	45	55
73146: Marquand-----	3e	85	75	35	47

Table 5.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Land capability	Corn	Grain sorghum	Soybeans	Winter wheat
		Bu	Bu	Bu	Bu
73150:					
Caneyville-----	4e	75	66	---	42
Bucklick-----	4e	80	70	---	44
73151:					
Caneyville-----	6e	---	---	---	---
Gasconade-----	6e	---	---	---	---
Bucklick-----	6e	---	---	---	---
73156:					
Alred-----	6s	---	---	---	---
Gepp-----	4e	---	---	---	---
73157:					
Captina-----	3e	80	75	32	35
73223:					
Coulstone-----	7e	---	---	---	---
Bender-----	7e	---	---	---	---
73264:					
Alred-----	7s	---	---	---	---
Wrengart-----	6e	---	---	---	---
73265:					
Captina-----	3e	80	75	32	35
Scholten-----	6e	---	---	---	---
73266:					
Hildebrecht-----	4e	70	62	25	26
73267:					
Yelton-----	4e	70	---	---	---
Scholten-----	6e	---	---	---	---
73269:					
Brussels-----	7s	---	---	---	---
Gasconade-----	7s	---	---	---	---
Rock outcrop-----	8s	---	---	---	---
73270:					
Wrengart-----	4e	95	85	35	40
73343:					
Captina-----	3e	80	75	32	35
73344:					
Captina-----	4e	60	55	---	25
73345:					
Hildebrecht-----	3e	85	80	32	35

Table 5.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Land capability	Corn	Grain sorghum	Soybeans	Winter wheat
		Bu	Bu	Bu	Bu
73346: Hildebrecht-----	3e	82	77	30	33
74644: Deible-----	4w	90	70	30	35
74646: Cornwall-----	3e	80	80	25	30
74648: Aslinger-----	3e	75	70	29	33
74649: Aslinger-----	4e	70	64	25	31
Waben-----	4s	---	54	---	28
74679: Higdon-----	2w	100	80	35	40
74680: Moniteau-----	3w	90	80	35	41
74685: Auxvasse-----	3w	110	90	40	45
75379: Kaintuck-----	3w	65	52	27	29
75381: Bearthicket-----	1	125	110	45	40
75395: Jamesfin-----	2w	115	95	40	44
75408: Secesh-----	2s	80	72	43	40
75409: Relfe-----	4s	55	48	---	26
75411: Tilk-----	3s	70	54	---	31
75416: Gladden-----	2w	90	70	30	35
75417: Relfe-----	4s	---	---	---	---
Sandbur-----	3w	---	5	---	---
75426: Gabriel-----	4w	95	81	45	50
75428: Tilk-----	3s	70	54	---	31
Cornwall-----	4e	80	64	25	30
Poynor-----	6e	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Land capability	Corn	Grain sorghum	Soybeans	Winter wheat
		Bu	Bu	Bu	Bu
75429:					
Tilk-----	3s	70	54	---	25
Secesh-----	2s	80	57	---	40
75430:					
Wideman-----	3s	60	50	26	30
75451:					
Gladden-----	2w	75	60	25	30
75467:					
Wilbur-----	2w	110	95	37	40
75468:					
Elsah-----	2s	90	80	28	38
77000:					
Killarney-----	7s	---	---	---	---
Frenchmill-----	7s	---	---	---	---
77002:					
Delassus-----	3e	80	70	27	30
77005:					
Hassler-----	6e	---	---	---	---
Syenite-----	7s	---	---	---	---
77008:					
Hassler-----	4e	65	45	---	22
80000:					
Calhoun-----	3w	110	90	35	40
80001:					
Oaklimeter-----	2w	125	100	40	45
82000:					
Dubbs-----	2e	135	110	45	50
82001:					
Amagon-----	4w	---	---	---	---
82002:					
Forestdale-----	4w	---	---	---	---
82005:					
Malden-----	3s	55	47	20	22
82006:					
Bosket-----	3e	90	80	35	48
82007:					
Bosket-----	2w	85	80	32	45
82009:					
Forestdale-----	3w	110	90	30	35
82010:					
Amagon-----	3w	120	100	40	45

Table 5.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Land capability	Corn	Grain sorghum	Soybeans	Winter wheat
		Bu	Bu	Bu	Bu
82011: Crowley-----	3w	115	95	30	45
86000: Dubbs-----	2w	130	105	42	45
86001: Calhoun-----	4w	100	80	32	35
86002: Falaya-----	2w	125	100	40	45
86003: Amagon-----	3w	110	95	37	40
86004: Forestdale-----	4w	100	85	27	30
90000: Memphis-----	3e	90	85	35	40
90001: Memphis-----	6e	70	60	30	35
99001. Water					
99003. Miscellaneous water					
99007. Dam					
99015: Udorthents. Water.					

Table 6.--Pasture and Hayland Groups and Yields per Acre of Hay 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	Pasture and hayland group	Alfalfa hay	Caucasian bluestem	Orchardgrass -red clover	Tall fescue	Warm-season grasses
		Tons	Tons	Tons	Tons	Tons
60033: Wrengart-----	LyP	4.4	5.8	4.8	5.0	5.8
60046: Minnith-----	LyU	9.5	8.0	7.4	6.7	8.0
60053: Winfield-----	LyU	9.5	8.0	7.4	6.7	8.0
60054: Minnith-----	LyU	9.5	8.0	7.4	6.7	8.0
60055: Winfield-----	LyU	9.5	8.0	7.4	6.7	8.0
66000: Moniteau-----	WLB	---	---	7.1	8.1	9.5
66054: Wakeland-----	WLO	---	---	8.5	8.0	9.5
66055: Haymond-----	LyO	8.9	8.9	7.4	6.8	9.2
73055: Alred-----	GNS	---	---	---	---	---
Rueter-----	GNS	---	---	---	---	---
73100: Wrengart-----	LyP	4.4	5.8	4.8	5.0	5.8
73101: Wrengart-----	LyP	4.4	5.8	4.8	5.0	5.8
73139: Poynor-----	GrU	6.2	7.1	5.8	5.3	6.8
Clarksville-----	GrU	6.2	7.1	5.8	5.3	6.8
Scholten-----	GrP	2.2	2.7	1.1	2.2	2.7
73140: Clarksville-----	GNS	---	---	---	---	---
Scholten-----	GNS	---	---	---	---	---
73141: Firebaugh-----	LyU	9.5	8.0	7.4	6.7	8.0
73145: Crider-----	LyU	9.5	8.0	7.4	6.7	8.0
73146: Marquand-----	LyU	9.5	8.0	7.4	6.7	8.0

Table 6.--Pasture and Hayland Groups and Yields per Acre of Hay and Pasture--Continued

Map symbol and soil name	Pasture and hayland group	Alfalfa hay	Caucasian bluestem	Orchardgrass -red clover	Tall fescue	Warm-season grasses
		Tons	Tons	Tons	Tons	Tons
73150:						
Caneyville-----	MDU	5.8	6.7	5.8	5.3	6.8
Bucklick-----	CyU	7.5	8.0	7.5	7.0	7.5
73151:						
Caneyville-----	GNS	---	---	---	---	---
Gasconade-----	GNS	---	---	---	---	---
Bucklick-----	GNS	---	---	---	---	---
73156:						
Alred-----	GrU	6.2	7.1	5.8	5.3	6.8
Gepp-----	GrU	6.2	7.1	5.8	5.3	6.8
73157:						
Captina-----	LyP	4.4	5.8	4.8	5.0	5.8
73223:						
Coulstone-----	GNS	---	---	---	---	---
Bender-----	GNS	---	---	---	---	---
73264:						
Alred-----	GNS	---	---	---	---	---
Wrengart-----	GNS	---	---	---	---	---
73265:						
Captina-----	LyP	4.4	5.8	4.8	5.0	5.8
Scholten-----	GrP	2.2	2.7	1.1	2.2	2.7
73266:						
Hildebrecht-----	LyP	4.4	5.8	4.8	5.0	5.8
73267:						
Yelton-----	LyP	4.4	5.8	4.8	5.0	5.8
Scholten-----	GrP	2.2	2.7	1.1	2.2	2.7
73269:						
Brussels-----	GNS	---	---	---	---	---
Gasconade-----	GNS	---	---	---	---	---
Rock outcrop.						
73270:						
Wrengart-----	LyU	9.5	8.0	7.4	6.7	8.0
73343:						
Captina-----	LyP	4.4	5.8	4.8	5.0	5.8
73344:						
Captina-----	LyP	4.4	5.8	4.8	5.0	5.8
73345:						
Hildebrecht-----	LyP	4.4	5.8	4.8	5.0	5.8

Table 6.--Pasture and Hayland Groups and Yields per Acre of Hay and Pasture--Continued

Map symbol and soil name	Pasture and hayland group	Alfalfa hay	Caucasian bluestem	Orchardgrass -red clover	Tall fescue	Warm-season grasses
		Tons	Tons	Tons	Tons	Tons
73346: Hildebrecht-----	LyP	4.4	5.8	4.8	5.0	5.8
74644: Deible-----	WCB	---	---	7.1	8.0	9.2
74646: Cornwall-----	LyU	9.5	8.0	7.4	6.7	8.0
74648: Aslinger-----	LyO	8.9	8.9	7.4	6.8	9.2
74649: Aslinger-----	LyO	8.9	8.9	7.4	6.8	9.2
Waben-----	GrO	2.7	4.0	1.2	2.7	3.7
74679: Higdon-----	WLB	---	---	7.1	8.1	9.5
74680: Moniteau-----	WLB	---	---	7.1	8.1	9.5
74685: Auxvasse-----	WCU	---	---	7.1	8.0	9.2
75379: Kaintuck-----	LyO	8.9	8.9	7.4	6.8	9.2
75381: Bearthicket-----	LyO	8.9	8.9	7.4	6.8	9.2
75395: Jamesfin-----	LyO	8.9	8.9	7.4	6.8	9.2
75408: Secesh-----	LyO	8.9	8.9	7.4	6.8	9.2
75409: Relfe-----	SyO	3.5	3.0	3.2	3.2	3.3
75411: Tilk-----	GrO	2.7	4.0	1.2	2.7	3.7
75416: Gladden-----	LyO	8.9	8.9	7.4	6.8	9.2
75417: Relfe-----	SyO	2.0	2.3	1.6	3.0	2.4
Sandbur-----	LyO	6.6	7.0	5.2	6.8	7.4
75426: Gabriel-----	WLO	---	---	8.5	8.0	9.5
75428: Tilk-----	GrO	2.7	4.0	1.2	2.7	3.7
Cornwall-----	LyU	9.5	8.0	7.4	6.7	8.0
Poynor-----	GrU	6.2	7.1	5.8	5.3	6.8

Table 6.--Pasture and Hayland Groups and Yields per Acre of Hay and Pasture--Continued

Map symbol and soil name	Pasture and hayland group	Alfalfa hay	Caucasian bluestem	Orchardgrass -red clover	Tall fescue	Warm-season grasses
		Tons	Tons	Tons	Tons	Tons
75429:						
Tilk-----	GrO	2.7	4.0	1.2	2.7	3.7
Secesh-----	LyO	8.9	8.9	7.4	6.8	9.2
75430:						
Wideman-----	SyO	3.5	3.0	3.2	3.2	3.3
75451:						
Gladden-----	LyO	8.9	8.9	7.4	6.8	9.2
75467:						
Wilbur-----	WLO	---	---	8.5	8.0	9.5
75468:						
Elsah-----	GrO	2.7	4.0	1.2	2.7	3.7
77000:						
Killarney-----	GNS	---	---	---	---	---
Frenchmill-----	GNS	---	---	---	---	---
77002:						
Delassus-----	LyP	4.4	5.8	4.8	5.0	5.8
77005:						
Hassler-----	GrU	6.2	7.1	5.8	5.3	6.8
Syenite-----	MDU	5.8	6.7	5.8	5.3	6.8
77008:						
Hassler-----	GrU	6.2	7.1	5.8	5.3	6.8
80000:						
Calhoun-----	WLB	---	---	7.1	8.1	9.5
80001:						
Oaklimeter-----	WLB	---	---	7.1	8.1	9.5
82000:						
Dubbs-----	LyO	8.9	8.9	7.4	6.8	9.2
82001:						
Amagon-----	WLB	---	---	7.1	8.1	9.5
82002:						
Forestdale-----	WCB	---	---	---	---	---
82005:						
Malden-----	SyO	3.5	3.0	3.2	3.2	3.3
82006:						
Bosket-----	LyO	8.9	8.9	7.4	6.8	9.2
82007:						
Bosket-----	LyO	8.9	8.9	7.4	6.8	9.2
82009:						
Forestdale-----	WCB	---	---	7.1	8.0	9.2
82010:						
Amagon-----	WLB	---	---	7.1	8.1	9.5

Table 6.--Pasture and Hayland Groups and Yields per Acre of Hay and Pasture--Continued

Map symbol and soil name	Pasture and hayland group	Alfalfa hay	Caucasian bluestem	Orchardgrass -red clover	Tall fescue	Warm-season grasses
		Tons	Tons	Tons	Tons	Tons
82011: Crowley-----	WCB	---	---	7.1	8.0	9.2
86000: Dubbs-----	LyO	8.9	8.9	7.4	6.8	9.2
86001: Calhoun-----	WLB	---	---	7.1	8.1	9.5
86002: Falaya-----	WLO	---	---	8.5	8.0	9.5
86003: Amagon-----	WLB	---	---	7.1	8.1	9.5
86004: Forestdale-----	WCB	---	---	7.1	8.0	9.2
90000: Memphis-----	LyU	9.5	8.0	7.4	6.7	8.0
90001: Memphis-----	LyU	9.5	8.0	7.4	6.7	8.0
99001. Water						
99003. Miscellaneous water						
99007. Dam						
99015: Udorthents.  Water.						

Table 7.--Forest Productivity

(Site index is based on 50 years. Absence of an entry indicates that information was not available.)

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
60033: Wrengart-----	black oak-----	63	43	black oak, northern red oak, shortleaf pine, white oak
	northern red oak----	---	---	
	shagbark hickory----	---	---	
	white oak-----	53	43	
60046: Minnith-----	black oak-----	---	---	northern red oak, white oak
	northern red oak----	70	57	
	white oak-----	45	29	
60053: Winfield-----	black oak-----	69	51	green ash, northern red oak, white oak
	northern red oak----	60	43	
	white oak-----	60	43	
60054: Minnith-----	black oak-----	---	---	northern red oak, white oak
	northern red oak----	60	43	
	white oak-----	55	43	
60055: Winfield-----	black oak-----	65	43	black walnut, northern red oak, white oak
	northern red oak----	60	43	
	white oak-----	65	43	
66000: Moniteau-----	common hackberry----	---	---	eastern cottonwood, green ash, pin oak, silver maple
	eastern cottonwood--	---	---	
	pin oak-----	70	57	
	silver maple-----	---	---	
66054: Wakeland-----	green ash-----	90	63	American sycamore, baldcypress, green ash, red maple, silver maple
	hackberry-----	73	45	
	pin oak-----	90	72	
	silver maple-----	75	69	
66055: Haymond-----	green ash-----	90	63	American sycamore, baldcypress, green ash, red maple, silver maple
	hackberry-----	73	45	
	pin oak-----	90	72	
	silver maple-----	75	69	
73055: Alred-----	black oak-----	60	43	black oak, shortleaf pine, white oak
	shortleaf pine-----	60	86	
	white oak-----	56	43	
Rueter-----	black oak-----	53	43	black oak, shortleaf pine
	hickory-----	---	---	
	post oak-----	45	29	
73100: Wrengart-----	black oak-----	---	---	black oak, northern red oak, shortleaf pine, tuliptree
	northern red oak----	70	57	
	shortleaf pine-----	---	---	
	white oak-----	66	43	

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
73101: Wrengart-----	black oak-----	---	---	black oak, northern red oak, white oak
	northern red oak---	70	57	
	white oak-----	66	43	
73139: Poynor-----	black oak-----	60	43	black oak, shortleaf pine
	shortleaf pine-----	58	86	
	white oak-----	54	43	
Clarksville-----	black oak-----	61	43	black oak, northern red oak, shortleaf pine, white oak
	northern red oak---	---	---	
	shortleaf pine-----	58	86	
	white oak-----	55	43	
Scholten-----	black oak-----	50	29	black oak, eastern redcedar, shortleaf pine
	blackjack oak-----	---	---	
	hickory-----	---	---	
	post oak-----	---	---	
73140: Clarksville-----	black oak-----	61	43	black oak, northern red oak, shortleaf pine, white oak
	northern red oak---	---	---	
	shortleaf pine-----	58	86	
	white oak-----	55	43	
Scholten-----	black oak-----	50	29	black oak, eastern redcedar, shortleaf pine
	blackjack oak-----	---	---	
	hickory-----	---	---	
	post oak-----	---	---	
73141: Firebaugh-----	black oak-----	60	43	black oak, scarlet oak, shortleaf pine, white oak
	eastern redcedar---	---	---	
	post oak-----	---	---	
	scarlet oak-----	---	---	
	shortleaf pine-----	58	86	
	white oak-----	55	43	
73145: Crider-----	black oak-----	65	43	northern red oak, scarlet oak, white oak
	northern red oak---	65	43	
	scarlet oak-----	---	---	
	white oak-----	63	43	
73146: Marquand-----	black oak-----	65	43	black oak, northern red oak, white ash, white oak
	northern red oak---	---	---	
	white ash-----	---	---	
	white oak-----	63	43	
73150: Caneyville-----	black oak-----	56	43	black oak, scarlet oak
	eastern redcedar---	---	---	
	hickory-----	---	---	
	post oak-----	50	29	
	scarlet oak-----	---	---	
	white oak-----	---	---	

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity		Trees to manage	
	Common trees	Site index of wood fiber		
			cu ft/ac	
73150:				
Bucklick-----	black oak-----	56	43	black oak, scarlet oak
	northern red oak---	---	---	
	post oak-----	---	---	
	white oak-----	54	43	
73151:				
Caneyville-----	black oak-----	57	43	black oak, scarlet oak
	eastern redcedar---	44	43	
	hickory-----	---	---	
	post oak-----	50	29	
	scarlet oak-----	---	---	
	white oak-----	---	---	
Gasconade-----	blackjack oak-----	---	---	eastern redcedar
	chinkapin oak-----	40	29	
	eastern redcedar---	27	29	
	post oak-----	---	---	
Bucklick-----	black oak-----	56	43	black oak, scarlet oak
	northern red oak---	---	---	
	post oak-----	---	---	
	white oak-----	54	43	
73156:				
Alred-----	black oak-----	60	43	black oak,
	shortleaf pine-----	60	86	shortleaf pine,
	white oak-----	56	43	white oak
Gepp-----	black oak-----	58	43	black oak,
	shortleaf pine-----	55	86	shortleaf pine,
	white oak-----	55	43	white oak
73157:				
Captina-----	black oak-----	58	43	black oak, scarlet oak, shortleaf pine
	eastern redcedar---	---	---	
	northern red oak---	---	---	
	post oak-----	---	---	
	scarlet oak-----	---	---	
	shortleaf pine-----	60	86	
	white oak-----	54	43	
73223:				
Coulstone-----	black oak-----	56	43	black oak, scarlet oak, shortleaf pine
	scarlet oak-----	---	---	
	shortleaf pine-----	57	86	
	white oak-----	55	43	
Bender-----	black oak-----	52	29	black oak, scarlet oak, shortleaf pine
	scarlet oak-----	---	---	
	shortleaf pine-----	53	71	
	white oak-----	50	29	
73264:				
Alred-----	black oak-----	60	43	black oak,
	shortleaf pine-----	60	86	shortleaf pine,
	white oak-----	56	43	white oak
Wrengart-----	black oak-----	63	48	black oak, northern red oak, shortleaf pine, white oak
	northern red oak---	---	---	
	shagbark hickory---	---	---	
	white oak-----	58	38	

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
73265:				
Captina-----	black oak-----	58	43	black oak, scarlet oak, shortleaf pine
	eastern redcedar---	---	---	
	post oak-----	---	---	
	scarlet oak-----	---	---	
	shortleaf pine-----	60	86	
	white oak-----	54	43	
Scholten-----	black oak-----	50	29	black oak, eastern redcedar, shortleaf pine
	blackjack oak-----	---	---	
	hickory-----	---	---	
	post oak-----	---	---	
73266:				
Hilbrecht-----	black oak-----	60	43	black oak, northern red oak, shortleaf pine
	northern red oak----	---	---	
	post oak-----	---	---	
	white oak-----	54	43	
73267:				
Yelton-----	black oak-----	60	43	black oak, shortleaf pine
	white oak-----	55	43	
Scholten-----	black oak-----	50	29	black oak, eastern redcedar, shortleaf pine
	blackjack oak-----	---	---	
	hickory-----	---	---	
	post oak-----	---	---	
73269:				
Brussels-----	black oak-----	---	---	northern red oak, white oak
	northern red oak----	60	43	
	shagbark hickory----	---	---	
	white oak-----	58	---	
Gasconade-----	blackjack oak-----	---	---	eastern redcedar
	chinkapin oak-----	40	29	
	eastern redcedar---	27	29	
	post oak-----	---	---	
Rock outcrop.				
73270:				
Wrengart-----	black oak-----	63	43	black oak, northern red oak, shortleaf pine, white oak
	northern red oak----	---	---	
	shagbark hickory----	---	---	
	white oak-----	53	43	
73343:				
Captina-----	black oak-----	58	43	northern red oak, scarlet oak, shortleaf pine
	northern red oak----	---	---	
	scarlet oak-----	65	43	
	shortleaf pine-----	62	86	
	white oak-----	54	43	
73344:				
Captina-----	black oak-----	58	43	northern red oak, scarlet oak, shortleaf pine
	northern red oak----	---	---	
	scarlet oak-----	65	43	
	shortleaf pine-----	62	86	
	white oak-----	54	43	

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
73345: Hildebrecht-----	black oak-----	60	43	black oak, northern red oak, shortleaf pine
	northern red oak---	---	---	
	post oak-----	---	---	
	white oak-----	54	43	
73346: Hildebrecht-----	black oak-----	60	43	black oak, northern red oak, shortleaf pine
	northern red oak---	---	---	
	post oak-----	---	---	
	white oak-----	54	43	
74644: Deible-----	green ash-----	---	---	eastern cottonwood, green ash, pin oak, silver maple
	pin oak-----	76	57	
	silver maple-----	---	---	
74646: Cornwall-----	black oak-----	60	43	shortleaf pine, white oak
	eastern redcedar---	---	---	
	scarlet oak-----	60	43	
	shortleaf pine-----	---	---	
	white oak-----	---	---	
74648: Aslinger-----	black oak-----	60	43	scarlet oak, shortleaf pine
	scarlet oak-----	60	43	
	shortleaf pine-----	---	---	
	white oak-----	---	---	
74649: Aslinger-----	black oak-----	60	43	scarlet oak, shortleaf pine
	eastern redcedar---	---	---	
	scarlet oak-----	60	43	
	shortleaf pine-----	---	---	
	white oak-----	---	---	
Waben-----	black oak-----	---	---	eastern redcedar, shortleaf pine
	eastern redcedar---	40	43	
	post oak-----	---	---	
	shortleaf pine-----	---	---	
74679: Higdon-----	American sycamore---	---	---	black walnut, green ash, pecan, white oak
	black walnut-----	---	---	
	green ash-----	---	---	
	white oak-----	65	43	
74680: Moniteau-----	common hackberry---	---	---	eastern cottonwood, green ash, pin oak, silver maple
	eastern cottonwood---	---	---	
	pin oak-----	70	57	
	silver maple-----	---	---	
74685: Auxvasse-----	green ash-----	---	---	baldcypress, green ash, silver maple, sweetgum
	pin oak-----	76	---	
	silver maple-----	---	---	
	sweetgum-----	80	86	

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
75379: Kaintuck-----	American basswood---	---	---	American sycamore,
	American sycamore---	90	100	black walnut,
	black walnut-----	---	---	green ash,
	northern red oak---	---	---	northern red oak
75381: Bearthicket-----	American sycamore---	---	---	black walnut,
	black walnut-----	---	---	cherrybark oak,
	common hackberry---	---	---	green ash,
	pin oak-----	96	86	northern red oak,
	red maple-----	---	---	white oak
75395: Jamesfin-----	American sycamore---	90	100	black walnut,
	black walnut-----	---	---	eastern
	eastern cottonwood--	---	---	cottonwood, green
	river birch-----	---	---	ash
75408: Secesh-----	American sycamore---	---	---	American sycamore,
	black oak-----	---	---	black walnut,
	black walnut-----	---	---	shortleaf pine
	shortleaf pine-----	---	---	
	white oak-----	60	43	
75409: Relfe-----	American sycamore---	---	---	black oak,
	black oak-----	60	43	shortleaf pine
	shortleaf pine-----	---	---	
	white oak-----	55	43	
75411: Tilk-----	black oak-----	50	29	eastern redcedar,
	eastern redcedar---	---	---	shortleaf pine
	post oak-----	45	29	
	scarlet oak-----	50	29	
	shortleaf pine-----	55	86	
75416: Gladden-----	American sycamore---	85	86	black walnut,
	bitternut hickory---	---	---	northern red oak,
	black walnut-----	---	---	white ash, white
	blackgum-----	---	---	oak
	northern red oak---	---	---	
	white oak-----	75	57	
75417: Relfe-----	black oak-----	60	43	black oak,
	shortleaf pine-----	---	---	shortleaf pine
Sandbur-----	American basswood---	---	---	American sycamore,
	American sycamore---	---	---	black walnut,
	northern red oak---	---	---	green ash,
	river birch-----	---	---	northern red oak
	white oak-----	60	43	
75426: Gabriel-----	eastern cottonwood--	90	100	American sycamore,
	silver maple-----	80	29	eastern
				cottonwood, green
				ash, silver maple

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
75428:				
Tilk-----	black oak-----	50	29	eastern redcedar,
	eastern redcedar---	---	---	shortleaf pine
	post oak-----	45	29	
	scarlet oak-----	50	29	
	shortleaf pine-----	55	86	
Cornwall-----	black oak-----	60	43	scarlet oak,
	eastern redcedar---	---	---	shortleaf pine
	scarlet oak-----	60	43	
	shortleaf pine-----	---	---	
	white oak-----	---	---	
Poynor-----	black oak-----	60	43	black oak,
	shortleaf pine-----	58	86	shortleaf pine
	white oak-----	54	43	
75429:				
Tilk-----	black oak-----	50	29	eastern redcedar,
	eastern redcedar---	---	---	shortleaf pine
	post oak-----	45	29	
	scarlet oak-----	50	29	
	shortleaf pine-----	55	86	
Secesh-----	American sycamore---	---	---	American sycamore,
	black oak-----	---	---	black walnut,
	black walnut-----	---	---	shortleaf pine
	shortleaf pine-----	---	---	
	white oak-----	60	43	
75430:				
Wideman-----	American sycamore---	80	72	eastern cottonwood
	eastern cottonwood--	90	100	
75451:				
Gladden-----	American sycamore---	85	86	black walnut, green
	black walnut-----	---	---	ash, white oak
	shortleaf pine-----	---	---	
	white oak-----	75	57	
75467:				
Wilbur-----	bur oak-----	---	---	bur oak, green ash,
	green ash-----	85	58	swamp white oak
	pin oak-----	85	72	
	red maple-----	---	---	
	sycamore-----	90	100	
	tuliptree-----	---	---	
75468:				
Elsah-----	American sycamore---	---	---	black walnut, green
	red maple-----	---	---	ash, shortleaf
	southern red oak----	70	57	pine, tuliptree
	white oak-----	---	---	
77000:				
Killarney-----	northern red oak----	60	43	northern red oak,
	shortleaf pine-----	55	72	shortleaf pine
	white oak-----	55	43	
Frenchmill-----	northern red oak----	70	57	northern red oak,
	shortleaf pine-----	60	86	shortleaf pine,
	white oak-----	65	43	white oak

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
77002: Delassus-----	black oak-----	---	---	black oak, northern red oak, shortleaf pine
	northern red oak---	60	43	
	shortleaf pine-----	---	---	
	white oak-----	55	43	
77005: Hassler-----	black oak-----	48	29	black oak, scarlet oak, shortleaf pine
	northern red oak---	47	29	
	shortleaf pine-----	---	---	
	white oak-----	62	43	
Syenite-----	black oak-----	---	---	northern red oak, shortleaf pine, white oak
	northern red oak---	---	---	
	white oak-----	46	29	
77008: Hassler-----	black oak-----	---	---	black oak, northern red oak, shortleaf pine, white oak
	northern red oak---	60	43	
	shortleaf pine-----	---	---	
	white oak-----	47	29	
80000: Calhoun-----	green ash-----	---	---	green ash, pin oak, sweetgum
	pin oak-----	---	---	
	willow oak-----	---	---	
80001: Oaklimeter-----	black walnut-----	---	---	black walnut, cherrybark oak, eastern cottonwood, green ash, sweetgum
	cherrybark oak-----	100	143	
	eastern cottonwood--	100	---	
	green ash-----	90	---	
	sweetgum-----	100	---	
	willow oak-----	100	---	
82000: Dubbs-----	black walnut-----	---	---	black walnut, green ash, Shumard's oak, sweetgum
	eastern cottonwood--	100	129	
	green ash-----	80	57	
	Shumard's oak-----	100	72	
	willow oak-----	95	86	
82001: Amagon-----	cherrybark oak-----	90	114	cherrybark oak, eastern cottonwood, Shumard's oak, silver maple, willow oak
	eastern cottonwood--	100	129	
	green ash-----	80	57	
	silver maple-----	---	---	
	willow oak-----	100	100	
82002: Forestdale-----	eastern cottonwood--	---	---	American sycamore, eastern cottonwood, silver maple, sweetgum
	green ash-----	78	43	
	silver maple-----	---	---	
	sweetgum-----	---	---	
	willow oak-----	---	---	
82005: Malden-----	black oak-----	60	43	black oak, shortleaf pine
	hickory-----	---	---	
	white ash-----	---	---	

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
82006: Bosket-----	eastern cottonwood--	100	129	eastern cottonwood, green ash, sweetgum
	green ash-----	80	57	
	sweetgum-----	90	100	
	willow oak-----	90	86	
82007: Bosket-----	eastern cottonwood--	100	129	eastern cottonwood, green ash, sweetgum
	green ash-----	80	57	
	sweetgum-----	90	100	
	willow oak-----	90	86	
82009: Forestdale-----	eastern cottonwood--	---	---	American sycamore, eastern cottonwood, silver maple, sweetgum
	green ash-----	88	58	
	silver maple-----	---	---	
	sweetgum-----	---	---	
	willow oak-----	84	72	
82010: Amagon-----	eastern cottonwood--	100	129	eastern cottonwood, Shumard's oak, sweetgum, willow oak
	green ash-----	80	57	
	Shumard's oak-----	---	---	
	willow oak-----	84	72	
82011: Crowley-----	cherrybark oak-----	---	---	cherrybark oak, green ash, loblolly pine, shortleaf pine, water oak
	loblolly pine-----	80	114	
	sweetgum-----	---	---	
	water oak-----	---	---	
86000: Dubbs-----	black walnut-----	---	---	American sycamore, black walnut, eastern cottonwood, green ash, tuliptree
	eastern cottonwood--	100	129	
	green ash-----	80	57	
	Shumard's oak-----	82	56	
	sweetgum-----	---	---	
	willow oak-----	84	72	
86001: Calhoun-----	green ash-----	---	---	green ash, sweetgum, willow oak
	pin oak-----	84	72	
	sweetgum-----	75	80	
	willow oak-----	73	64	
86002: Falaya-----	bur oak-----	---	---	bur oak, eastern cottonwood, green ash, sweetgum
	eastern cottonwood--	95	114	
	green ash-----	85	58	
	sycamore-----	---	---	
86003: Amagon-----	eastern cottonwood--	100	129	eastern cottonwood, Shumard's oak, sweetgum, willow oak
	green ash-----	80	57	
	Shumard's oak-----	---	---	
	willow oak-----	89	72	

Table 7.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
86004: Forestdale-----	eastern cottonwood--	---	---	American sycamore, eastern cottonwood, silver maple, sweetgum
	green ash-----	88	58	
	silver maple-----	---	---	
	sweetgum-----	---	---	
	willow oak-----	84	72	
90000: Memphis-----	black oak-----	86	72	northern red oak, tuliptree, white oak
	northern red oak----	86	72	
	tuliptree-----	84	84	
	white oak-----	71	87	
90001: Memphis-----	black oak-----	86	72	northern red oak, tuliptree, white oak
	northern red oak----	86	72	
	tuliptree-----	84	84	
	white oak-----	71	87	
99001. Water				
99003. Miscellaneous water				
99007. Dam				
99015: Udorthents.				
Water.				

Table 8a.--Forest Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited low strength (moderately limited)	0.50
60046: Minnith-----	Slightly limited slope (slightly limited)	0.14	Limited slope (limited)	0.99	Moderately limited slope (moderately limited)	0.60	Moderately limited slope (moderately limited)	0.60	Very limited slope (very limited)	1.00
					low strength (moderately limited)	0.50			low strength (moderately limited)	0.50
60053: Winfield-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.26	Moderately limited low strength (moderately limited)	0.50
					seasonal wetness (slightly limited)	0.26			seasonal wetness (slightly limited)	0.26
60054: Minnith-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited)	0.76
									low strength (moderately limited)	0.50
60055: Winfield-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited low strength (moderately limited)	0.50
66000: Moniteau-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Limited seasonal wetness (limited)	0.91	Limited seasonal wetness (limited)	0.91	Limited seasonal wetness (limited)	0.91
					low strength (moderately limited)	0.50			flooding (moderately limited)	0.60
									low strength (moderately limited)	0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66054: Wakeland-----	Not limited		Not limited		Moderately limited low strength (moderately limited) seasonal wetness (moderately limited)	0.50 0.45	Moderately limited seasonal wetness (moderately limited)	0.45	Very limited flooding (very limited) low strength (moderately limited) seasonal wetness (moderately limited)	1.00 0.50 0.45
66055: Haymond-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60 0.50
73055: Alred-----	Moderately limited small stones (moderately limited) slope (slightly limited)	0.31 0.14	Limited slope (limited) surface stones (moderately limited) small stones (moderately limited)	0.99 0.38 0.31	Moderately limited slope (moderately limited)	0.60	Moderately limited slope (moderately limited) small stones (slightly limited)	0.60 0.12	Very limited slope (very limited) slippage potential (limited)	1.00 0.90
Rueter-----	Slightly limited small stones (slightly limited) slope (slightly limited)	0.28 0.14	Limited slope (limited) surface stones (moderately limited) small stones (slightly limited)	0.99 0.38 0.28	Moderately limited slope (moderately limited)	0.60	Moderately limited slope (moderately limited) small stones (slightly limited)	0.60 0.08	Very limited slope (very limited) slippage potential (limited)	1.00 0.90
73100: Wrengart-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited low strength (moderately limited)	0.50
73101: Wrengart-----	Not limited		Slightly limited slope (slightly limited)	0.20	Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited low strength (moderately limited) slope (slightly limited)	0.50 0.15

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73139:										
Poynor-----	Slightly limited small stones (slightly limited)	0.14	Moderately limited slope (moderately limited) small stones (slightly limited) surface stones (slightly limited)	0.47 0.14 0.02	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50
Clarksville---	Slightly limited small stones (slightly limited)	0.04	Moderately limited slope (moderately limited) small stones (slightly limited) surface stones (slightly limited)	0.47 0.04 0.02	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50
Scholten-----	Slightly limited small stones (slightly limited)	0.06	Moderately limited slope (moderately limited) small stones (slightly limited) surface stones (slightly limited)	0.47 0.06 0.02	Moderately limited low strength (moderately limited) seasonal wetness (moderately limited)	0.50 0.43	seasonal wetness (moderately limited)	0.43	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50
73140:										
Clarksville---	Slightly limited slope (slightly limited) small stones (slightly limited)	0.20 0.17	Very limited slope (very limited) surface stones (moderately limited) small stones (slightly limited)	1.00 0.38 0.17	Limited slope (limited) low strength (moderately limited)	0.79 0.50	Limited slope (limited)	0.79	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50
Scholten-----	Limited small stones (limited) slope (slightly limited)	0.80 0.14	Limited slope (limited) small stones (limited) surface stones (moderately limited)	0.99 0.80 0.38	Moderately limited slope (moderately limited)	0.60	Limited small stones (limited) slope (moderately limited)	0.80 0.60	Very limited slope (very limited) slippage potential (limited)	1.00 0.90

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73141: Firebaugh-----	Not limited		Slightly limited slope (slightly limited)	0.10	Slightly limited seasonal wetness (slightly limited)	0.23	Slightly limited seasonal wetness (slightly limited)	0.23	Moderately limited slippage potential (moderately limited) seasonal wetness (slightly limited)	0.50 0.23
73145: Crider-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50
73146: Marquand-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.15	Slightly limited seasonal wetness (slightly limited)	0.15	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.15
73150: Caneyville-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50
Bucklick-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151:										
Caneyville-----	Slightly limited slope (slightly limited)	0.07	Limited slope (limited)	0.80	Moderately limited low strength (moderately limited) slope (moderately limited)	0.50 0.31	Moderately limited slope (moderately limited)	0.31	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50
Gasconade-----	Moderately limited stickiness (surface) (moderately limited) large stones (moderately limited) slope (slightly limited)	0.50 0.42 0.07	Limited slope (limited) large stones (limited) stickiness (surface) (moderately limited)	0.80 0.76 0.50	Moderately limited low strength (moderately limited) stickiness (surface) (moderately limited) slope (moderately limited)	0.50 0.50 0.31	Moderately limited stickiness (surface) (moderately limited) large stones (moderately limited) slope (moderately limited)	0.50 0.42 0.31	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50
Bucklick-----	Slightly limited slope (slightly limited)	0.07	Limited slope (limited)	0.80	Moderately limited low strength (moderately limited) slope (moderately limited)	0.50 0.31	Moderately limited slope (moderately limited)	0.31	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50
73156:										
Alred-----	Not limited		Moderately limited slope (moderately limited) surface stones (slightly limited)	0.47 0.02	Not limited		Not limited		Limited slippage potential (limited) slope (limited)	0.90 0.76
Gepp-----	Moderately limited small stones (moderately limited)	0.31	Moderately limited slope (moderately limited) small stones (moderately limited) surface stones (slightly limited)	0.47 0.31 0.02	Not limited		Slightly limited small stones (slightly limited)	0.12	Limited slippage potential (limited) slope (limited)	0.90 0.76

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73157: Captina-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.15	Slightly limited seasonal wetness (slightly limited)		Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.15
73223: Coulstone-----	Limited large stones (limited) surface stones (moderately limited) very sandy (surface) (moderately limited)	0.61 0.58 0.50	Limited large stones >35% (very limited) slope (limited) surface stones (limited)	0.99 0.99 0.97	Moderately limited slope (moderately limited) very sandy (surface) (moderately limited)	0.60 0.50	Limited large stones (limited) slope (moderately limited)	0.61 0.60	Very limited slope (very limited) surface stones (moderately limited) very sandy (surface) (moderately limited)	1.00 0.58 0.50
Bender-----	Moderately limited large stones (moderately limited) very sandy (surface) (moderately limited) surface stones (moderately limited)	0.50 0.50 0.41	Very limited slope (very limited) large stones (limited) surface stones (limited)	1.00 0.86 0.78	Limited slope (limited) very sandy (surface) (moderately limited)	0.79 0.50	Limited slope (limited) large stones (moderately limited)	0.79 0.50	Very limited slope (very limited) very sandy (surface) (moderately limited) slippage potential (moderately limited)	1.00 0.50 0.50
73264: Alred-----	Slightly limited slope (slightly limited)	0.14	Limited slope (limited) surface stones (moderately limited)	0.99 0.38	Moderately limited slope (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited slope (moderately limited)	0.60	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50
Wrengart-----	Slightly limited slope (slightly limited)	0.07	Limited slope (limited)	0.80	Moderately limited low strength (moderately limited) slope (moderately limited) seasonal wetness (slightly limited)	0.50 0.31 0.10	Moderately limited slope (moderately limited) seasonal wetness (slightly limited)	0.31 0.10	Very limited slope (very limited) low strength (moderately limited) seasonal wetness (slightly limited)	1.00 0.50 0.10

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73265:										
Captina-----	Slightly limited small stones (slightly limited)	0.19	Slightly limited small stones (slightly limited) large stones (slightly limited) slope (slightly limited)	0.19 0.15 0.10	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.21	Slightly limited seasonal wetness (slightly limited)	0.21	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.21
Scholten-----	Slightly limited small stones (slightly limited)	0.11	Slightly limited small stones (slightly limited) slope (slightly limited)	0.11 0.10	Moderately limited low strength (moderately limited) seasonal wetness (moderately limited)	0.50 0.47	Moderately limited seasonal wetness (moderately limited)	0.47	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (moderately limited)	0.50 0.50 0.47
73266:										
Hildebrecht----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) low strength (moderately limited)	0.76 0.50
73267:										
Yelton-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.28	Slightly limited seasonal wetness (slightly limited)	0.28	Limited slope (limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.76 0.50 0.28
Scholten-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited) seasonal wetness (moderately limited)	0.50 0.47	Moderately limited seasonal wetness (moderately limited)	0.47	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73269:										
Brussels-----	Limited slope (limited stickiness (surface) (moderately limited)	0.72	Very limited slope (very limited) surface stones (limited) stickiness (surface) (moderately limited)	1.00	Very limited slope (very limited) large surface stones (moderately limited) stickiness (surface) (moderately limited)	1.00	Very limited slope (very limited) large surface stones (moderately limited) stickiness (surface) (moderately limited)	1.00	Very limited slope (very limited) slippage potential (limited) large surface stones (moderately limited)	1.00
Gasconade-----	Limited stickiness (surface) (limited) surface stones (moderately limited) slope (moderately limited)	0.75	Very limited slope (very limited) surface stones (limited) stickiness (surface) (limited)	1.00	Very limited slope (very limited) stickiness (surface) (limited) large surface stones (moderately limited)	1.00	Very limited slope (very limited) stickiness (surface) (limited) large surface stones (moderately limited)	1.00	Very limited slope (very limited) slippage potential (limited) stickiness (surface) (limited)	1.00
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
73270:										
Wrengart-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) low strength (moderately limited)	0.76
73343:										
Captina-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.21	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50
73344:										
Captina-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.21	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73345: Hildebrecht----	Not limited		Slightly limited slope (slightly limited)	0.20	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.15	Slightly limited seasonal wetness (slightly limited)	0.15	Moderately limited low strength (moderately limited) slope (slightly limited) seasonal wetness (slightly limited)	0.50 0.15 0.15
73346: Hildebrecht----	Not limited		Slightly limited slope (slightly limited)	0.20	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.15	Slightly limited seasonal wetness (slightly limited)	0.15	Moderately limited low strength (moderately limited) slope (slightly limited) seasonal wetness (slightly limited)	0.50 0.15 0.15
74644: Deible-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Limited low strength (moderately limited) seasonal wetness (slightly limited)	0.91 0.50	Limited seasonal wetness (limited)	0.91	Limited seasonal wetness (limited) slippage potential (moderately limited) low strength (moderately limited)	0.91 0.50 0.50
74646: Cornwall-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.15	Slightly limited seasonal wetness (slightly limited)	0.15	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.15
74648: Aslinger-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.20	Slightly limited seasonal wetness (slightly limited)	0.20	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.20

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74649: Aslinger-----	Not limited		Moderately limited slope (moderately limited)	0.34	Moderately limited low strength (moderately limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.20	Moderately limited slippage potential (moderately limited)	0.50
					seasonal wetness (slightly limited)	0.20			low strength (moderately limited)	0.50
									slope (moderately limited)	0.45
Waben-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited slippage potential (moderately limited)	0.50
									low strength (moderately limited)	0.50
74679: Higdon-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.29	Moderately limited slippage potential (moderately limited)	0.50
					seasonal wetness (slightly limited)	0.29			low strength (moderately limited)	0.50
									seasonal wetness (slightly limited)	0.29
74680: Moniteau-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Limited seasonal wetness (limited)	0.91	Limited seasonal wetness (limited)	0.91	Limited seasonal wetness (limited)	0.91
					low strength (moderately limited)	0.50			low strength (moderately limited)	0.50
74685: Auxvasse-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.29	Moderately limited low strength (moderately limited)	0.50
					seasonal wetness (slightly limited)	0.29			seasonal wetness (slightly limited)	0.29
75379: Kaintuck-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Very limited flooding (very limited)	1.00
									low strength (moderately limited)	0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75381: Bearthicket----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50
75395: Jamesfin-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60 0.50
75408: Secesh-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50
75409: Relfe-----	Not limited		Not limited		Not limited		Not limited		Moderately limited flooding (moderately limited)	0.60
75411: Tilk-----	Limited small stones (limited)	0.77	Limited small stones (limited)	0.77	Not limited		Limited small stones (limited)	0.78	Moderately limited slippage potential (moderately limited)	0.50
75416: Gladden-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited flooding (moderately limited) slippage potential (moderately limited) low strength (moderately limited)	0.60 0.50 0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75417:										
Relfe-----	Moderately limited small stones (moderately limited) very sandy (surface) (moderately limited)	0.58  0.50	Moderately limited small stones (moderately limited) very sandy (surface) (moderately limited)	0.58  0.50	Moderately limited very sandy (surface) (moderately limited)	0.50	Moderately limited small stones (moderately limited)	0.56	Very limited flooding (very limited) very sandy (surface) (moderately limited)	1.00  0.50
Sandbur-----	Not limited		Not limited		Not limited		Not limited		Very limited flooding (very limited)	1.00
75426:										
Gabriel-----	Not limited		Not limited		Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50  0.29	Slightly limited seasonal wetness (slightly limited)	0.29	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50  0.29
75428:										
Tilk-----	Slightly limited small stones (slightly limited)	0.11	Slightly limited small stones (slightly limited) large stones (slightly limited)	0.11  0.01	Not limited		Not limited		Moderately limited flooding (moderately limited) slippage potential (moderately limited)	0.60  0.50
Cornwall-----	Not limited		Moderately limited slope (moderately limited)	0.34	Moderately limited low strength (moderately limited) seasonal wetness (moderately limited)	0.50  0.34	Moderately limited seasonal wetness (moderately limited)	0.34	Moderately limited slippage potential (moderately limited) low strength (moderately limited) slope (moderately limited)	0.50  0.50  0.45
Poynor-----	Slightly limited small stones (slightly limited)	0.04	Moderately limited slope (moderately limited) small stones (slightly limited)	0.47  0.04	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76  0.50  0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75429:										
Tilk-----	Limited small stones (limited)	0.77	Limited small stones (limited)	0.77	Not limited		Limited small stones (limited)	0.77	Moderately limited flooding (moderately limited) slippage potential (moderately limited)	0.60  0.50
Secesh-----	Slightly limited large stones (slightly limited) small stones (slightly limited)	0.17  0.05	Moderately limited large stones (moderately limited) small stones (slightly limited)	0.45  0.05	Moderately limited low strength (moderately limited)	0.50	Slightly limited large stones (slightly limited)	0.17	Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50  0.50
75430:										
Wideman-----	Not limited		Not limited		Not limited		Not limited		Moderately limited flooding (moderately limited)	0.60
75451:										
Gladden-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60  0.50
75467:										
Wilbur-----	Not limited		Not limited		Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50  0.24	Slightly limited seasonal wetness (slightly limited)	0.24	Very limited flooding (very limited) low strength (moderately limited) seasonal wetness (slightly limited)	1.00  0.50  0.24
75468:										
Elsah-----	Slightly limited small stones (slightly limited)	0.04	Slightly limited small stones (slightly limited)	0.04	Moderately limited low strength (moderately limited)	0.50	Not limited		Very limited flooding (very limited) low strength (moderately limited)	1.00  0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77000:										
Killarney-----	Limited surface stones (limited) small stones (moderately limited) slope (slightly limited)	0.77 0.31 0.20	Very limited surface stones >15% (very limited) slope (very limited) small stones (moderately limited)	1.00 1.00 0.31	Very limited large surface stones (very limited) slope (limited) seasonal wetness (slightly limited)	1.00 0.79 0.10	Very limited large surface stones (very limited) slope (limited) small stones (slightly limited)	1.00 0.79 0.12	Very limited slope (very limited) large surface stones (very limited) surface stones (limited)	1.00 1.00 0.77
Frenchmill-----	Limited surface stones (limited) slope (slightly limited) small stones (slightly limited)	0.77 0.20 0.08	Very limited surface stones >15% (very limited) slope (very limited) large stones (slightly limited)	1.00 1.00 0.27	Very limited large surface stones (very limited) slope (limited)	1.00 0.79	Very limited large surface stones (very limited) slope (limited)	1.00 0.79	Very limited slope (very limited) large surface stones (very limited) surface stones (limited)	1.00 1.00 0.77
77002:										
Delassus-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.16	Slightly limited seasonal wetness (slightly limited)	0.16	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.16
77005:										
Hassler-----	Slightly limited slope (slightly limited)	0.02	Limited slope (limited) surface stones (slightly limited)	0.64 0.02	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited) slope (slightly limited)	0.50 0.17 0.10	Slightly limited seasonal wetness (slightly limited) slope (slightly limited)	0.17 0.10	Very limited slope (very limited) slippage potential (moderately limited) low strength (moderately limited)	1.00 0.50 0.50
Syenite-----	Slightly limited slope (slightly limited)	0.05	Limited slope (limited) surface stones (slightly limited)	0.72 0.02	Moderately limited low strength (moderately limited) slope (slightly limited)	0.50 0.20	Slightly limited slope (slightly limited)	0.20	Very limited slope (very limited) slippage potential (moderately limited) low strength (moderately limited)	1.00 0.50 0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value						
77008:										
Hassler-----	Not limited		Slightly limited slope (slightly limited)	0.30	Moderately limited low strength (moderately limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.17	Moderately limited slippage potential (moderately limited)	0.50
			surface stones (slightly limited)	0.02	seasonal wetness (slightly limited)	0.17			low strength (moderately limited)	0.50
									slope (moderately limited)	0.31
80000:										
Calhoun-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60
					low strength (moderately limited)	0.50			low strength (moderately limited)	0.50
80001:										
Oaklimeter----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Slightly limited seasonal wetness (slightly limited)	0.20	Moderately limited low strength (moderately limited)	0.50
					seasonal wetness (slightly limited)	0.20			seasonal wetness (slightly limited)	0.20
82000:										
Dubbs-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited low strength (moderately limited)	0.50
82001:										
Amagon-----	Limited seasonally ponded (limited)	0.80	Limited seasonally ponded (limited)	0.80	Very limited seasonal wetness (very limited)	1.00	Very limited seasonal wetness (very limited)	1.00	Very limited seasonal wetness (very limited)	1.00
	seasonal wetness (moderately limited)	0.60	seasonal wetness (moderately limited)	0.60	seasonally ponded (limited)	0.80	seasonally ponded (limited)	0.80	ponded (wetness) (very limited)	1.00
					low strength (moderately limited)	0.50			low strength (moderately limited)	0.50
82002:										
Forestdale----	Limited seasonally ponded (limited)	0.80	Limited seasonally ponded (limited)	0.80	Very limited seasonal wetness (very limited)	1.00	Very limited seasonal wetness (very limited)	1.00	Very limited seasonal wetness (very limited)	1.00
	seasonal wetness (moderately limited)	0.60	seasonal wetness (moderately limited)	0.60	seasonally ponded (limited)	0.80	seasonally ponded (limited)	0.80	ponded (wetness) (very limited)	1.00
	stickiness (surface) (moderately limited)	0.50	stickiness (surface) (moderately limited)	0.50	low strength (moderately limited)	0.50	stickiness (surface) (moderately limited)	0.50	low strength (moderately limited)	0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82005: Malden-----	Not limited		Not limited		Not limited		Not limited		Not Limited	
82006: Bosket-----	Not limited		Not limited		Not limited		Not limited		Not Limited	
82007: Bosket-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60  0.50
82009: Forestdale----	Moderately limited seasonal wetness (moderately limited) stickiness (surface) (moderately limited)	0.60  0.50	Moderately limited seasonal wetness (moderately limited) stickiness (surface) (moderately limited)	0.60  0.50	Very limited seasonal wetness (very limited) low strength (moderately limited) stickiness (surface) (moderately limited)	1.00  0.50  0.50	Very limited seasonal wetness (very limited) stickiness (surface) (moderately limited)	1.00  0.50	Very limited seasonal wetness (very limited) low strength (moderately limited) stickiness (surface) (moderately limited)	1.00  0.50  0.50
82010: Amagon-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Limited seasonal wetness (limited) low strength (moderately limited)	0.62  0.50	Limited seasonal wetness (limited)	0.62	Limited seasonal wetness (limited) low strength (moderately limited)	0.62  0.50
82011: Crowley-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited) low strength (moderately limited)	0.60  0.50	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited) low strength (moderately limited)	0.60  0.50
86000: Dubbs-----	Not limited		Not limited		Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60  0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86001: Calhoun-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited) flooding (moderately limited) low strength (moderately limited)	0.60 0.60 0.50
86002: Falaya-----	Moderately limited seasonal wetness (moderately limited)	0.60	Moderately limited seasonal wetness (moderately limited)	0.60	Limited seasonal wetness (limited) low strength (moderately limited)	0.62 0.50	Limited seasonal wetness (limited)	0.62	Limited seasonal wetness (limited) flooding (moderately limited) low strength (moderately limited)	0.62 0.60 0.50
86003: Amagon-----	Not limited		Not limited		Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.29	Slightly limited seasonal wetness (slightly limited)	0.29	Moderately limited flooding (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.60 0.50 0.29
86004: Forestdale----	Moderately limited seasonal wetness (moderately limited) stickiness (surface) (moderately limited)	0.60 0.50	Moderately limited seasonal wetness (moderately limited) stickiness (surface) (moderately limited)	0.60 0.50	Very limited seasonal wetness (very limited) low strength (moderately limited) stickiness (surface) (moderately limited)	1.00 0.50 0.50	Very limited seasonal wetness (very limited) stickiness (surface) (moderately limited)	1.00 0.50	Very limited seasonal wetness (very limited) flooding (moderately limited) low strength (moderately limited)	1.00 0.60 0.50
90000: Memphis-----	Not limited		Slightly limited slope (slightly limited)	0.10	Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited low strength (moderately limited)	0.50

Table 8a.--Forest Management--Continued

Map symbol and soil name	Hand planting		Mechanical planting		Use of harvesting equipment		Mechanical site preparation (surface)		Roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
90001: Memphis-----	Not limited		Moderately limited slope (moderately limited)	0.47	Moderately limited low strength (moderately limited)	0.50	Not limited		Limited slope (limited) low strength (moderately limited)	0.76 0.50
99001: Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99003: Miscellaneous water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99007: Dam-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99015: Udorthents-----	Not rated		Not rated		Not rated		Not rated		Not rated	
Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 8b.--Forest Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited)	0.80	Moderately limited low strength (moderately limited)	0.50	Not limited	
60046: Minnith-----	Very limited slope/erodibility (very limited)	1.00	Limited slope/erodibility (limited)	0.61	Limited low strength (limited)	0.80	Very limited slope (very limited) low strength (moderately limited)	1.00 0.50	Not limited	
60053: Winfield-----	Moderately limited slope/erodibility (moderately limited)	0.56	Slightly limited slope/erodibility (slightly limited)	0.12	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.26	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.26	Not limited	
60054: Minnith-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.29	Limited low strength (limited)	0.80	Limited slope (limited) low strength (moderately limited)	0.76 0.50	Not limited	
60055: Winfield-----	Moderately limited slope/erodibility (moderately limited)	0.39	Slightly limited slope/erodibility (slightly limited)	0.09	Limited low strength (limited)	0.80	Moderately limited low strength (moderately limited)	0.50	Not limited	
66000: Moniteau-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.05	Limited seasonal wetness (limited) low strength (limited)	0.91 0.80	Limited seasonal wetness (limited) flooding (moderately limited) low strength (moderately limited)	0.91 0.60 0.50	Limited seasonal wetness (limited) flooding (moderately limited)	0.91 0.60

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66054: Wakeland-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.01	Limited low strength (limited) seasonal wetness (moderately limited)	0.80 0.45	Very limited flooding (very limited) low strength (moderately limited) seasonal wetness (moderately limited)	1.00 0.50 0.45	Limited flooding (limited) seasonal wetness (moderately limited)	0.90 0.31
66055: Haymond-----	Slightly limited slope/erodibility (slightly limited)	0.17	Slightly limited slope/erodibility (slightly limited)	0.04	Limited low strength (limited)	0.80	Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited)	0.60
73055: Alred-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.49	Not limited		Very limited slope (very limited) slippage potential (limited)	1.00 0.90	Not limited	
Rueter-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.49	Not limited		Very limited slope (very limited) slippage potential (limited)	1.00 0.90	Not limited	
73100: Wrengart-----	Moderately limited slope/erodibility (moderately limited)	0.44	Slightly limited slope/erodibility (slightly limited)	0.10	Limited low strength (limited)	0.80	Moderately limited low strength (moderately limited)	0.50	Not limited	
73101: Wrengart-----	Limited slope/erodibility (limited)	0.78	Slightly limited slope/erodibility (slightly limited)	0.17	Limited low strength (limited)	0.80	Moderately limited low strength (moderately limited) slope (slightly limited)	0.50 0.15	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73139: Poynor-----	Limited slope/erodibility (limited)	0.75	Slightly limited slope/erodibility (slightly limited)	0.24	Limited low strength (limited)	0.80	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50	Not limited	
Clarksville---	Limited slope/erodibility (limited)	0.75	Slightly limited slope/erodibility (slightly limited)	0.24	Limited low strength (limited)	0.80	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50	Not limited	
Scholten-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.29	Limited low strength (limited) seasonal wetness (moderately limited)	0.80 0.43	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50	Slightly limited seasonal wetness (slightly limited) soil reaction (slightly limited)	0.26 0.12
73140: Clarksville---	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.59	Limited low strength (limited)	0.80	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50	Slightly limited soil reaction (slightly limited)	0.06
Scholten-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.49	Not limited		Very limited slope (very limited) slippage potential (limited)	1.00 0.90	Not limited	
73141: Firebaugh-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Slightly limited seasonal wetness (slightly limited)	0.23	Moderately limited slippage potential (moderately limited) seasonal wetness (slightly limited)	0.50 0.23	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73145: Crider-----	Moderately limited slope/erodibility (moderately limited)	0.56	Slightly limited slope/erodibility (slightly limited)	0.12	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50	Not limited	
73146: Marquand-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.15	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.15	Not limited	
73150: Caneyville-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.24	Limited low strength (limited)	0.80	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50	Not limited	
Bucklick-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.24	Limited low strength (limited)	0.80	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50	Not limited	
73151: Caneyville-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.39	Limited low strength (limited)	0.80	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151: Gasconade-----	Limited slope/erodibility (limited)	0.77	Moderately limited slope/erodibility (moderately limited)	0.39	Limited low strength (limited)	0.80	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50	Limited droughty (limited)	0.92
Bucklick-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.39	Limited low strength (limited)	0.80	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50	Not limited	
73156: Alred-----	Limited slope/erodibility (limited)	0.75	Slightly limited slope/erodibility (slightly limited)	0.24	Not limited		Limited slippage potential (limited) slope (limited)	0.90 0.76	Not limited	
Gepp-----	Limited slope/erodibility (limited)	0.75	Slightly limited slope/erodibility (slightly limited)	0.24	Not limited		Limited slippage potential (limited) slope (limited)	0.90 0.76	Not limited	
73157: Captina-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.15	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.15	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73223: Coulstone-----	Limited slope/erodibility (limited)	0.96	Moderately limited slope/erodibility (moderately limited)	0.49	Not limited		Very limited slope (very limited) surface stones (moderately limited) very sandy (surface) (moderately limited)	1.00 0.58 0.50	Very limited droughty (very limited)	1.00
Bender-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.59	Not limited		Very limited slope (very limited) slippage potential (moderately limited) very sandy (surface) (moderately limited)	1.00 0.50 0.50	Very limited droughty (very limited)	1.00
73264: Alred-----	Very limited slope/erodibility (very limited)	1.00	Limited slope/erodibility (limited)	0.61	Limited low strength (limited)	0.80	Very limited slope (very limited) slippage potential (limited) low strength (moderately limited)	1.00 0.90 0.50	Not limited	
Wrengart-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.49	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.10	Very limited slope (very limited) low strength (moderately limited) seasonal wetness (slightly limited)	1.00 0.50 0.10	Not limited	
73265: Captina-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.21	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.21	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73265: Scholten-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.12	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited)	0.50	Moderately limited seasonal wetness (moderately limited)	0.34
					seasonal wetness (moderately limited)	0.47	low strength (moderately limited)	0.50	seasonal wetness (moderately limited)	
73266: Hildebrecht----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.29	Limited low strength (limited)	0.80	Limited slope (limited)	0.76	low strength (moderately limited)	0.50
										Not limited
73267: Yelton-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.24	Limited low strength (limited)	0.80	Limited slope (limited)	0.76	low strength (moderately limited)	0.50
					seasonal wetness (slightly limited)	0.28	seasonal wetness (slightly limited)	0.28		Not limited
Scholten-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.29	Limited low strength (limited)	0.80	Limited slope (limited)	0.76	seasonal wetness (moderately limited)	0.34
					seasonal wetness (moderately limited)	0.47	slippage potential (moderately limited)	0.50	soil reaction (slightly limited)	0.12
							low strength (moderately limited)	0.50		
73269: Brussels-----	Very limited slope/erodibility (very limited)	1.00	Very limited slope/erodibility (very limited)	1.00	Not limited		Very limited slope (very limited)	1.00	slippage potential (limited)	0.90
							large surface stones (moderately limited)	0.60	soil reaction (slightly limited)	0.01

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73269: Gasconade-----	Very limited slope/erodibility (very limited)	1.00	Limited slope/erodibility (limited)	0.78	Not limited		Very limited slope (very limited) slippage potential (limited) stickiness (surface) (limited)	1.00 0.90 0.75	Limited droughty (limited) soil reaction (slightly limited)	0.89 0.01
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
73270: Wrengart-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.29	Limited low strength (limited)	0.80	Limited slope (limited) low strength (moderately limited)	0.76 0.50	Not limited	
73343: Captina-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.21	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.21	Not limited	
73344: Captina-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.29	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.21	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50	Not limited	
73345: Hildebrecht---	Limited slope/erodibility (limited)	0.78	Slightly limited slope/erodibility (slightly limited)	0.17	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.15	Moderately limited low strength (moderately limited) slope (slightly limited) seasonal wetness (slightly limited)	0.50 0.15 0.15	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73346: Hildebrecht----	Limited slope/erodibility (limited)	0.78	Slightly limited slope/erodibility (slightly limited)	0.17	Limited low strength (limited)	0.80	Moderately limited low strength (moderately limited)	0.50	Slightly limited soil reaction (slightly limited)	0.06
					seasonal wetness (slightly limited)	0.15	slope (slightly limited)	0.15		
							seasonal wetness (slightly limited)	0.15		
74644: Deible-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.05	Limited seasonal wetness (limited)	0.91	Limited seasonal wetness (limited)	0.91	Limited seasonal wetness (limited)	0.91
					low strength (limited)	0.80	slippage potential (moderately limited)	0.50		
							low strength (moderately limited)	0.50		
74646: Cornwall-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited)	0.50	Not limited	
					seasonal wetness (slightly limited)	0.15	low strength (moderately limited)	0.50		
							seasonal wetness (slightly limited)	0.15		
74648: Aslinger-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited)	0.50	Not limited	
					seasonal wetness (slightly limited)	0.20	low strength (moderately limited)	0.50		
							seasonal wetness (slightly limited)	0.20		
74649: Aslinger-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.22	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited)	0.50	Not limited	
					seasonal wetness (slightly limited)	0.20	low strength (moderately limited)	0.50		
							slope (moderately limited)	0.45		

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74649: Waben-----	Moderately limited slope/erodibility (moderately limited)	0.56	Slightly limited slope/erodibility (slightly limited)	0.10	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50	Slightly limited droughty (slightly limited)	0.01
74679: Higdon-----	Slightly limited slope/erodibility (slightly limited)	0.17	Slightly limited slope/erodibility (slightly limited)	0.04	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.29	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.29	Not limited	
74680: Moniteau-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.05	Limited seasonal wetness (limited) low strength (limited)	0.91 0.80	Limited seasonal wetness (limited) low strength (moderately limited)	0.91 0.50	Limited seasonal wetness (limited)	0.91
74685: Auxvasse-----	Moderately limited slope/erodibility (moderately limited)	0.44	Slightly limited slope/erodibility (slightly limited)	0.10	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.29	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.29	Not limited	
75379: Kaintuck-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.05	Limited low strength (limited)	0.80	Very limited flooding (very limited) low strength (moderately limited)	1.00 0.50	Limited flooding (limited)	0.90
75381: Bearthicket----	Slightly limited slope/erodibility (slightly limited)	0.17	Slightly limited slope/erodibility (slightly limited)	0.04	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75395: Jamesfin-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Limited low strength (limited)	0.80	Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited)	0.60
75408: Secesh-----	Slightly limited slope/erodibility (slightly limited)	0.09	Slightly limited slope/erodibility (slightly limited)	0.03	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50	Not limited	
75409: Relfe-----	Slightly limited slope/erodibility (slightly limited)	0.12	Slightly limited slope/erodibility (slightly limited)	0.04	Moderately limited low strength (moderately limited)	0.50	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited) droughty (moderately limited)	0.60 0.35
75411: Tilk-----	Slightly limited slope/erodibility (slightly limited)	0.08	Slightly limited slope/erodibility (slightly limited)	0.04	Not limited		Moderately limited slippage potential (moderately limited)	0.50	Slightly limited droughty (slightly limited)	0.11
75416: Gladden-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.04	Limited low strength (limited)	0.80	Moderately limited flooding (moderately limited) slippage potential (moderately limited) low strength (moderately limited)	0.60 0.50 0.50	Moderately limited flooding (moderately limited)	0.60
75417: Relfe-----	Slightly limited slope/erodibility (slightly limited)	0.12	Slightly limited slope/erodibility (slightly limited)	0.04	Not limited		Very limited flooding (very limited) very sandy (surface) (moderately limited)	1.00 0.50	Very limited droughty (very limited) flooding (limited)	1.00 0.90
Sandbur-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.04	Moderately limited low strength (moderately limited)	0.50	Very limited flooding (very limited)	1.00	Limited flooding (limited)	0.90

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75426: Gabriel-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.29	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.29	Not limited	
75428: Tilk-----	Slightly limited slope/erodibility (slightly limited)	0.12	Slightly limited slope/erodibility (slightly limited)	0.06	Not limited		Moderately limited flooding (moderately limited) slippage potential (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited) droughty (slightly limited)	0.60 0.18
Cornwall-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.18	Limited low strength (limited) seasonal wetness (moderately limited)	0.80 0.34	Moderately limited slippage potential (moderately limited) low strength (moderately limited) slope (moderately limited)	0.50 0.50 0.45	Slightly limited seasonal wetness (slightly limited)	0.11
Poynor-----	Moderately limited slope/erodibility (moderately limited)	0.46	Slightly limited slope/erodibility (slightly limited)	0.24	Limited low strength (limited)	0.80	Limited slope (limited) slippage potential (moderately limited) low strength (moderately limited)	0.76 0.50 0.50	Limited droughty (limited)	0.77
75429: Tilk-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.02	Moderately limited low strength (moderately limited)	0.50	Moderately limited flooding (moderately limited) slippage potential (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited)	0.60
Secesh-----	Slightly limited slope/erodibility (slightly limited)	0.09	Slightly limited slope/erodibility (slightly limited)	0.03	Limited low strength (limited)	0.80	Moderately limited slippage potential (moderately limited) low strength (moderately limited)	0.50 0.50	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75430: Wideman-----	Slightly limited slope/erodibility (slightly limited)	0.12	Slightly limited slope/erodibility (slightly limited)	0.04	Moderately limited low strength (moderately limited)	0.50	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited)	0.60
75451: Gladden-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Limited low strength (limited)	0.80	Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited)	0.60
75467: Wilbur-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.24	Very limited flooding (very limited) low strength (moderately limited) seasonal wetness (slightly limited)	1.00 0.50 0.24	Limited flooding (limited)	0.90
75468: Elsah-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.04	Limited low strength (limited)	0.80	Very limited flooding (very limited) low strength (moderately limited)	1.00 0.50	Limited flooding (limited)	0.90
77000: Killarney-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.59	Slightly limited seasonal wetness (slightly limited)	0.10	Very limited large surface stones (very limited) slope (very limited) surface stones (limited)	1.00 1.00 0.77	Not limited	
Frenchmill-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.59	Not limited		Very limited large surface stones (very limited) slope (very limited) surface stones (limited)	1.00 1.00 0.77	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77002: Delassus-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.16	Moderately limited slippage potential (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.50 0.16	Not limited	
77005: Hassler-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.31	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.17	Very limited slope (very limited) slippage potential (moderately limited) low strength (moderately limited)	1.00 0.50 0.50	Not limited	
Syenite-----	Very limited slope/erodibility (very limited)	1.00	Moderately limited slope/erodibility (moderately limited)	0.35	Limited low strength (limited)	0.80	Very limited slope (very limited) slippage potential (moderately limited) low strength (moderately limited)	1.00 0.50 0.50	Not limited	
77008: Hassler-----	Limited slope/erodibility (limited)	0.89	Slightly limited slope/erodibility (slightly limited)	0.16	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.17	Moderately limited slippage potential (moderately limited) low strength (moderately limited) slope (moderately limited)	0.50 0.50 0.31	Not limited	
80000: Calhoun-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.01	Limited low strength (limited) seasonal wetness (moderately limited)	0.80 0.60	Moderately limited seasonal wetness (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited seasonal wetness (moderately limited)	0.60

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
80001: Oaklimeter-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.01	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.20	Moderately limited low strength (moderately limited) seasonal wetness (slightly limited)	0.50 0.20	Not limited	
82000: Dubbs-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.01	Limited low strength (limited)	0.80	Moderately limited low strength (moderately limited)	0.50	Not limited	
82001: Amagon-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Very limited seasonal wetness (very limited) low strength (limited)	1.00 0.80	Very limited seasonal wetness (very limited) seasonally ponded (limited) low strength (moderately limited)	1.00 0.80 0.50	Very limited seasonal wetness (very limited)	1.00
82002: Forestdale-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Very limited seasonal wetness (very limited) low strength (limited)	1.00 0.80	Very limited seasonal wetness (very limited) seasonally ponded (limited) low strength (moderately limited)	1.00 0.80 0.50	Very limited seasonal wetness (very limited)	1.00
82005: Malden-----	Slightly limited slope/erodibility (slightly limited)	0.12	Slightly limited slope/erodibility (slightly limited)	0.04	Moderately limited low strength (moderately limited)	0.50	Not limited		Moderately limited droughty (moderately limited)	0.57
82006: Bosket-----	Slightly limited slope/erodibility (slightly limited)	0.19	Slightly limited slope/erodibility (slightly limited)	0.06	Moderately limited low strength (moderately limited)	0.50	Not limited		Not limited	
82007: Bosket-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.05	Limited low strength (limited)	0.80	Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited)	0.60

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82009: Forestdale-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.01	Very limited seasonal wetness (very limited) low strength (limited)	1.00 0.80	Very limited seasonal wetness (very limited) low strength (moderately limited) stickiness (surface) (moderately limited)	1.00 0.50 0.50	Very limited seasonal wetness (very limited)	1.00
82010: Amagon-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Limited low strength (limited) seasonal wetness (limited)	0.80 0.62	Limited seasonal wetness (limited) low strength (moderately limited)	0.62 0.50	Limited seasonal wetness (limited)	0.62
82011: Crowley-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.01	Limited low strength (limited) seasonal wetness (moderately limited)	0.80 0.60	Moderately limited seasonal wetness (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited seasonal wetness (moderately limited)	0.60
86000: Dubbs-----	Slightly limited slope/erodibility (slightly limited)	0.22	Slightly limited slope/erodibility (slightly limited)	0.05	Limited low strength (limited)	0.80	Moderately limited flooding (moderately limited) low strength (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited)	0.60
86001: Calhoun-----	Slightly limited slope/erodibility (slightly limited)	0.06	Slightly limited slope/erodibility (slightly limited)	0.01	Limited low strength (limited) seasonal wetness (moderately limited)	0.80 0.60	Moderately limited seasonal wetness (moderately limited) flooding (moderately limited) low strength (moderately limited)	0.60 0.60 0.50	Moderately limited flooding (moderately limited) seasonal wetness (moderately limited)	0.60 0.60

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86002: Falaya-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Limited low strength (limited) seasonal wetness (limited)	0.80 0.62	Limited seasonal wetness (limited) flooding (moderately limited) low strength (moderately limited)	0.62 0.60 0.50	Limited seasonal wetness (limited) flooding (moderately limited)	0.62 0.60
86003: Amagon-----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Limited low strength (limited) seasonal wetness (slightly limited)	0.80 0.29	Moderately limited flooding (moderately limited) low strength (moderately limited) seasonal wetness (slightly limited)	0.60 0.50 0.29	Moderately limited flooding (moderately limited)	0.60
86004: Forestdale----	Slightly limited slope/erodibility (slightly limited)	0.11	Slightly limited slope/erodibility (slightly limited)	0.02	Very limited seasonal wetness (very limited) low strength (limited)	1.00 0.80	Very limited seasonal wetness (very limited) flooding (moderately limited) low strength (moderately limited)	1.00 0.60 0.50	Very limited seasonal wetness (very limited) flooding (moderately limited)	1.00 0.60
90000: Memphis-----	Limited slope/erodibility (limited)	0.67	Slightly limited slope/erodibility (slightly limited)	0.15	Limited low strength (limited)	0.80	Moderately limited low strength (moderately limited)	0.50	Not limited	
90001: Memphis-----	Very limited slope/erodibility (very limited)	1.00	Slightly limited slope/erodibility (slightly limited)	0.29	Limited low strength (limited)	0.80	Limited slope (limited) low strength (moderately limited)	0.76 0.50	Not limited	

Table 8b.--Forest Management--Continued

Map symbol and soil name	Erosion on roads and trails		Off-road or off-trail erosion		Soil rutting		Log landings		Seedling survival	
	Rating class and limiting features	Value								
99001: Water-----	Not rated									
99003: Miscellaneous water-----	Not rated									
99007: Dam-----	Not rated									
99015: Udorthents----	Not rated									
Water-----	Not rated									

Table 9.--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
60033: Wrengart-----	Fragrant sumac	American plum; gray dogwood; southern arrowwood	Eastern redbud; eastern redcedar; Washington hawthorn	Green ash; northern red oak; tuliptree; white fir	Eastern white pine
60046: Minnith-----	Fragrant sumac	American plum; gray dogwood; southern arrowwood	Eastern redbud; eastern redcedar; Washington hawthorn	Green ash; northern red oak; tuliptree; white fir	Eastern white pine
60053: Winfield-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
60054: Minnith-----	Fragrant sumac	American plum; gray dogwood; southern arrowwood	Eastern redbud; eastern redcedar; Washington hawthorn	Green ash; northern red oak; tuliptree; white fir	Eastern white pine
60055: Winfield-----	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	Arborvitae; blue spruce; common persimmon; eastern redcedar; nannyberry; pecan; Washington hawthorn; white oak	Black walnut; blackgum; common hackberry; Douglas fir; green ash; northern red oak; Norway spruce; pin oak; tuliptree	Carolina poplar; eastern cottonwood; eastern white pine
66000: Moniteau-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
66054: Wakeland-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine
66055: Haymond-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine
73055: Alred-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---

Table 9.--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
73055: Rueter-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73100: Wrengart-----	Fragrant sumac	American plum; gray dogwood; southern arrowwood	Eastern redbud; eastern redcedar; Washington hawthorn	Green ash; northern red oak; tuliptree; white fir	Eastern white pine
73101: Wrengart-----	Fragrant sumac	American plum; gray dogwood; southern arrowwood	Eastern redbud; eastern redcedar; Washington hawthorn	Green ash; northern red oak; tuliptree; white fir	Eastern white pine
73139: Poynor-----	Fragrant sumac; ninebark; St. Johnswort	Eastern redcedar; possumhaw; roughleaf dogwood; Washington hawthorn	Arborvitae; bur oak; green hawthorn; post oak	Austrian pine; green ash; hackberry; honeylocust; pin oak	---
Clarksville-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Scholten-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73140: Clarksville-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Scholten-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73141: Firebaugh-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73145: Crider-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine

Table 9.--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
73146: Marquand-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
73150: Caneyville-----	Fragrant sumac; ninebark; St. Johnswort	Eastern redcedar; possumhaw; roughleaf dogwood; Washington hawthorn	Arborvitae; bur oak; green hawthorn; post oak	Austrian pine; green ash; hackberry; honeylocust; pin oak	---
Bucklick-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
73151: Caneyville-----	Fragrant sumac; ninebark; St. Johnswort	Eastern redcedar; possumhaw; roughleaf dogwood; Washington hawthorn	Arborvitae; bur oak; green hawthorn; post oak	Austrian pine; green ash; hackberry; honeylocust; pin oak	---
Gasconade.					
Bucklick-----	American hazelnut; fragrant sumac	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple; white oak	Northern red oak; tuliptree; white ash	Eastern white pine
73156: Alred-----	common ninebark; coralberry; fragrant sumac	eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Gepp-----	Fragrant sumac; ninebark; St. Johnswort	Eastern redcedar; possumhaw; roughleaf dogwood; Washington hawthorn	Arborvitae; bur oak; green hawthorn; post oak	Austrian pine; green ash; hackberry; honeylocust; pin oak	---
73157: Captina-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73223: Coulstone-----	Coralberry; fragrant sumac; ninebark	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---

Table 9.--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
73223: Bender-----	Coralberry; fragrant sumac; ninebark	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73264: Alred-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73264: Wrengart-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
73265: Captina-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Scholten-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73266: Hildebrecht-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73267: Yelton-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Scholten-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73269: Brussels-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Gasconade.					
Rock outcrop.					

Table 9.--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
73270: Wrengart-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
73343: Captina-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73344: Captina-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
73345: Hildebrecht-----	American plum; common lilac; fragrant sumac	Amur maple; gray dogwood; Washington hawthorn	Austrian pine; common hackberry; eastern redcedar; honeylocust; unknown; Virginia pine	---	
73346: Hildebrecht-----	American plum; common lilac; fragrant sumac	Amur maple; gray dogwood; Washington hawthorn	Austrian pine; common hackberry; eastern redcedar; honeylocust; unknown; Virginia pine	---	---
74644: Deible-----	Common buttonbush; common ninebark	Possumhaw; sandbar willow	Black willow; bur oak; green hawthorn	Baldcypress; green ash; pecan; red maple; swamp white oak; sweetgum	Eastern cottonwood; silver maple
74646: Cornwall-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
74648: Aslinger-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
74649: Aslinger-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---

Table 9.--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
74649: Waben-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
74679: Higdon-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine
74680: Moniteau-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
74685: Auxvasse-----	American plum; fragrant sumac	Blackhaw; gray dogwood	Eastern redcedar; nannyberry; Washington hawthorn	Baldcypress; green ash; sweetgum	Eastern white pine; pin oak
75379: Kaintuck-----	---	Amur honeysuckle; Amur maple; autumn olive; common lilac	Eastern redcedar	Austrian pine; common hackberry; eastern white pine; green ash; honeylocust; pin oak	Eastern cottonwood
75381: Bearthicket-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine
75395: Jamesfin-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine
75408: Secesh-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
75409: Relfe-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
75411: Tilk-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---

Table 9.--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
75416: Gladden-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine
75417: Relfe-----	Coralberry; fragrant sumac; ninebark	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Sandbur-----	Coralberry; flameleaf sumac	Eastern redcedar; gray dogwood; jack pine	Chinkapin oak; persimmon; post oak	Black oak; honeylocust	---
75426: Gabriel-----	Buttonbush	Possumhaw	Eastern arborvitae; eastern redcedar; nannyberry	Baldcypress; common hackberry; pin oak	Eastern cottonwood
75428: Tilk-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Cornwall-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Poynor-----	Common ninebark; fragrant sumac; St. Johnswort	Eastern redcedar; possumhaw; roughleaf dogwood; Washington hawthorn	Arborvitae; bur oak; green hawthorn; post oak	Austrian pine; green ash; hackberry; honeylocust; pin oak	---
75429: Tilk-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Secesh-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
75430: Wideman-----	Coralberry; eastern redcedar; flameleaf sumac	Eastern redcedar; gray dogwood; jack pine	Chinkapin oak; persimmon; post oak	Black oak; honeylocust	---
75451: Gladden-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine

Table 9.--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
75467: Wilbur-----	American plum; fragrant sumac	Blackhaw; gray dogwood	Eastern redcedar; nannyberry; Washington hawthorn	Baldcypress; green ash; sweetgum	Eastern white pine; pin oak
75468: Elsah-----	---	Amur honeysuckle; Amur maple; autumn olive; common lilac	Eastern redcedar	Austrian pine; common hackberry; eastern white pine; green ash; honeylocust; pin oak	Eastern cottonwood
77000: Killarney-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Frenchmill-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
77002: Delassus-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
77005: Hassler-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
Syenite-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
77008: Hassler-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
80000: Calhoun-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
80001: Oaklimeter-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine

Table 9.--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
82000: Dubbs-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
82001: Amagon-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
82002: Forestdale-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
82005: Malden-----	American plum; common lilac; fragrant sumac; gray dogwood	Autumn olive; Washington hawthorn	Blackjack oak; diospyros; eastern redcedar; jack pine	Eastern cottonwood	---
82006: Bosket-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
82007: Bosket-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
82009: Forestdale-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
82010: Amagon-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
82011: Crowley-----	Buttonbush; silky dogwood	Amur honeysuckle	Eastern redcedar	Baldcypress; green ash; loblolly pine; water oak	American sycamore; eastern cottonwood; pin oak; sweetgum

Table 9.--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
86000: Dubbs-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
86001: Calhoun-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
86002: Falaya-----	American hazelnut; common ninebark; wild hydrangea	American plum; blue spruce; possumhaw; roughleaf dogwood	Arborvitae; bur oak; green hawthorn; shingle oak	Austrian pine; baldcypress; hackberry; pin oak; red maple	American sycamore; eastern cottonwood; eastern white pine
86003: Amagon-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	---
86004: Forestdale-----	Common ninebark; coralberry; fragrant sumac	Eastern redbud; eastern redcedar; flowering dogwood; gray dogwood	Common serviceberry; persimmon; post oak; red pine; shingle oak; shortleaf pine	Black oak; mockernut hickory; northern red oak; white ash	
90000: Memphis-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
90001: Memphis-----	American hazelnut; fragrant sumac; southern arrowwood	American plum; blue spruce; eastern hophornbeam; eastern redbud; eastern redcedar; roughleaf dogwood	Arborvitae; common serviceberry; sugar maple	Northern red oak; tuliptree; white ash; white oak	Eastern white pine
99001. Water					
99003. Miscellaneous water					
99007. Dam					
99015: Udorthents.  Water.					

Table 10.--Recreational Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Slightly limited percs slowly (slightly limited)	0.13	Slightly limited percs slowly (slightly limited)	0.13	Limited slope (limited) percs slowly (slightly limited)	0.98  0.13	Not limited	
60046: Minnith-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited) slope (limited)	1.00  0.92
60053: Winfield-----	Limited wetness (limited)	0.81	Moderately limited wetness (moderately limited)	0.49	Limited wetness (limited) slope (limited)	0.81  0.78	Moderately limited wetness (moderately limited)	0.49
60054: Minnith-----	Limited slope (limited)	0.63	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited)	1.00
60055: Winfield-----	Not limited		Not limited		Slightly limited slope (slightly limited)	0.22	Not limited	
66000: Moniteau-----	Very limited flooding (very limited) wetness (very limited) percs slowly (slightly limited)	1.00  1.00  0.13	Very limited wetness (very limited) percs slowly (slightly limited)	1.00  0.13	Very limited wetness (very limited) flooding (moderately limited) percs slowly (slightly limited)	1.00  0.60  0.13	Very limited wetness (very limited)	1.00
66054: Wakeland-----	Very limited flooding (very limited) wetness (very limited)	1.00  1.00	Limited wetness (limited) flooding (moderately limited)	0.81  0.60	Very limited flooding (very limited) wetness (very limited)	1.00  1.00	Limited wetness (limited) flooding (moderately limited)	0.81  0.60
66055: Haymond-----	Very limited flooding (very limited)	1.00	Not limited		Moderately limited flooding (moderately limited)	0.60	Not limited	

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73055:								
Alred-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited small stones (very limited)	1.00	Limited slope (limited)	0.92
	small stones (very limited)	1.00	small stones (very limited)	1.00	slope (very limited)	1.00	large surface stones (limited)	0.70
	large surface stones (limited)	0.70	large surface stones (limited)	0.70	percs slowly (moderately limited)	0.39	small stones (slightly limited)	0.12
Rueter-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.92
	small stones (very limited)	1.00	small stones (very limited)	1.00	small stones (very limited)	1.00	large surface stones (limited)	0.70
	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large stones (limited)	0.80	small stones (slightly limited)	0.08
73100:								
Wrengart-----	Slightly limited percs slowly (slightly limited)	0.13	Slightly limited percs slowly (slightly limited)	0.13	Moderately limited slope (moderately limited)	0.40	Not limited	
					percs slowly (slightly limited)	0.13		
73101:								
Wrengart-----	Slightly limited percs slowly (slightly limited)	0.13	Slightly limited percs slowly (slightly limited)	0.13	Very limited slope (very limited)	1.00	Not limited	
					percs slowly (slightly limited)	0.13		
73139:								
Poynor-----	Limited small stones (limited)	0.69	Limited small stones (limited)	0.69	Very limited slope (very limited)	1.00	Slightly limited large surface stones (slightly limited)	0.17
	slope (limited)	0.63	slope (limited)	0.63	small stones (very limited)	1.00		
	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large stones (slightly limited)	0.06		
Clarksville-----	Limited slope (limited)	0.63	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Slightly limited large surface stones (slightly limited)	0.17
	small stones (moderately limited)	0.31	small stones (moderately limited)	0.31	small stones (very limited)	1.00		
	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17				
Scholten-----	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.78
	percs slowly (very limited)	1.00	wetness (limited)	0.78	slope (very limited)	1.00	large surface stones (slightly limited)	0.17
	slope (limited)	0.63	slope (limited)	0.63	percs slowly (very limited)	1.00		

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73140: Clarksville-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	small stones (limited)	0.82	small stones (limited)	0.82	small stones (very limited)	1.00	large surface stones (limited)	0.70
	large surface stones (limited)	0.70	large surface stones (limited)	0.70	too acid (moderately limited)	0.44		
Scholten-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited small stones (very limited)	1.00	Limited slope (limited)	0.92
	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	slope (very limited)	1.00	small stones (limited)	0.80
	small stones (very limited)	1.00	small stones (very limited)	1.00	percs slowly (very limited)	1.00	large surface stones (limited)	0.70
73141: Firebaugh-----	Limited wetness (limited)	0.65	Moderately limited percs slowly (moderately limited)	0.39	Limited slope (limited)	0.98	Moderately limited wetness (moderately limited)	0.39
	percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.39	wetness (limited)	0.65		
	too acid (slightly limited)	0.12	too acid (slightly limited)	0.12	percs slowly (moderately limited)	0.39		
73145: Crider-----	Not limited		Not limited		Limited slope (limited)	0.78	Not limited	
73146: Marquand-----	Moderately limited wetness (moderately limited)	0.37	Slightly limited wetness (slightly limited)	0.15	Limited slope (limited)	0.98	Slightly limited wetness (slightly limited)	0.15
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13	wetness (moderately limited)	0.37		
					percs slowly (slightly limited)	0.13		
73150: Caneyville-----	Limited slope (limited)	0.63	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Not limited	
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13	depth to bedrock (slightly limited)	0.30		
					percs slowly (slightly limited)	0.13		
Bucklick-----	Limited slope (limited)	0.63	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Not limited	

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151:								
Caneyville-----	Very limited slope (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited slope (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited slope (very limited) depth to bedrock (slightly limited) percs slowly (slightly limited)	1.00 0.28 0.13	Moderately limited slope (moderately limited)	0.50
Gasconade-----	Very limited too clayey (very limited) slope (very limited) shallow to bedrock (limited)	1.00 1.00 0.90	Very limited too clayey (very limited) slope (very limited) shallow to bedrock (limited)	1.00 1.00 0.90	Very limited slope (very limited) shallow to bedrock (very limited) too clayey (very limited)	1.00 1.00 1.00	Very limited too clayey (very limited) slope (moderately limited) large stones (moderately limited)	1.00 0.50 0.42
Bucklick-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Moderately limited slope (moderately limited)	0.50
73156:								
Alred-----	Limited slope (limited) percs slowly (moderately limited) large surface stones (slightly limited)	0.63 0.39 0.17	Limited slope (limited) percs slowly (moderately limited) large surface stones (slightly limited)	0.63 0.39 0.17	Very limited slope (very limited) percs slowly (moderately limited) small stones (moderately limited)	1.00 0.39 0.36	Slightly limited large surface stones (slightly limited)	0.17
Gepp-----	Very limited small stones (very limited) slope (limited) too acid (slightly limited)	1.00 0.63 0.30	Very limited small stones (very limited) slope (limited) too acid (slightly limited)	1.00 0.63 0.30	Very limited small stones (very limited) slope (very limited) too acid (slightly limited)	1.00 1.00 0.30	Slightly limited large surface stones (slightly limited) small stones (slightly limited)	0.17 0.12
73157:								
Captina-----	Moderately limited percs slowly (moderately limited) wetness (moderately limited)	0.39 0.35	Moderately limited percs slowly (moderately limited) wetness (slightly limited)	0.39 0.13	Limited slope (limited) percs slowly (moderately limited) wetness (moderately limited)	0.98 0.39 0.35	Slightly limited wetness (slightly limited)	0.13
73223:								
Coulstone-----	Very limited slope (very limited) large surface stones (limited) large stones (limited)	1.00 0.89 0.61	Very limited slope (very limited) large surface stones (limited) large stones (limited)	1.00 0.89 0.61	Very limited slope (very limited) large stones >25% (very limited) small stones (very limited)	1.00 1.00 1.00	Limited slope (limited) large surface stones (limited) large stones (limited)	0.92 0.89 0.61
Bender-----	Not rated		Not rated		Not rated		Not rated	

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73264:								
Alred-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited)	1.00
	large surface stones (limited)	0.70	large surface stones (limited)	0.70	small stones (limited)	0.88	slope (limited)	0.92
	percs slowly (moderately limited)	0.40	percs slowly (moderately limited)	0.40	percs slowly (moderately limited)	0.40	large surface stones (limited)	0.70
Wrengart-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited)	1.00
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13	slope (moderately limited)	0.50
73265:								
Captina-----	Limited small stones (limited)	0.93	Limited small stones (limited)	0.93	Very limited small stones (very limited)	1.00	Moderately limited wetness (moderately limited)	0.32
	wetness (moderately limited)	0.56	percs slowly (moderately limited)	0.39	slope (limited)	0.98		
	percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.32	large stones (limited)	0.80		
Scholten-----	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.83
	percs slowly (very limited)	1.00	wetness (limited)	0.83	percs slowly (very limited)	1.00		
	small stones (moderately limited)	0.57	small stones (moderately limited)	0.57	small stones (very limited)	1.00		
73266:								
Hildebrecht-----	Very limited percs slowly (very limited)	0.99	Very limited percs slowly (very limited)	0.99	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited)	1.00
	slope (limited)	0.63	slope (limited)	0.63	percs slowly (very limited)	0.99		
73267:								
Yelton-----	Limited wetness (limited)	0.90	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Moderately limited wetness (moderately limited)	0.56
	slope (limited)	0.63	wetness (moderately limited)	0.56	wetness (limited)	0.90		
	percs slowly (moderately limited)	0.40	percs slowly (moderately limited)	0.40	percs slowly (moderately limited)	0.40		
Scholten-----	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.83
	percs slowly (very limited)	1.00	wetness (limited)	0.83	slope (very limited)	1.00		
	slope (limited)	0.63	slope (limited)	0.63	percs slowly (very limited)	1.00		

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73269:								
Brussels-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	large surface stones (very limited)	1.00	large surface stones (very limited)	1.00	small stones (very limited)	1.00	large surface stones (very limited)	1.00
	small stones (moderately limited)	0.57	small stones (moderately limited)	0.57	percs slowly (slightly limited)	0.13		
Gasconade-----	Very limited too clayey (very limited)	1.00	Very limited too clayey (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	slope (very limited)	1.00	slope (very limited)	1.00	shallow to bedrock (very limited)	1.00	too clayey (very limited)	1.00
	large surface stones (very limited)	1.00	large surface stones (very limited)	1.00	too clayey (very limited)	1.00	large surface stones (very limited)	1.00
Rock outcrop-----	Not rated		Not rated		Not rated		Not rated	
73270:								
Wrengart-----	Limited slope (limited)	0.63	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited)	1.00
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13		
73343:								
Captina-----	Moderately limited wetness (moderately limited)	0.56	Moderately limited percs slowly (moderately limited)	0.39	Limited slope (limited)	0.98	Moderately limited wetness (moderately limited)	0.32
	percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.32	wetness (moderately limited)	0.56		
					percs slowly (moderately limited)	0.39		
73344:								
Captina-----	Limited slope (limited)	0.63	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited)	1.00
	wetness (moderately limited)	0.56	percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.56	wetness (moderately limited)	0.32
	percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.32	percs slowly (moderately limited)	0.39		
73345:								
Hildebrecht-----	Moderately limited percs slowly (moderately limited)	0.39	Moderately limited percs slowly (moderately limited)	0.39	Very limited slope (very limited)	1.00	Slightly limited wetness (slightly limited)	0.13
	wetness (moderately limited)	0.35	wetness (slightly limited)	0.13	percs slowly (moderately limited)	0.39		
					wetness (moderately limited)	0.35		
73346:								
Hildebrecht-----	Moderately limited percs slowly (moderately limited)	0.39	Moderately limited percs slowly (moderately limited)	0.39	Very limited slope (very limited)	1.00	Slightly limited wetness (slightly limited)	0.13
	wetness (moderately limited)	0.35	wetness (slightly limited)	0.13	percs slowly (moderately limited)	0.39		
	too acid (slightly limited)	0.06	too acid (slightly limited)	0.06	wetness (moderately limited)	0.35		

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74644: Deible-----	Very limited wetness (very limited) percs slowly (very limited)	1.00  1.00	Very limited wetness (very limited) percs slowly (very limited)	1.00  1.00	Very limited wetness (very limited) percs slowly (very limited)	1.00  1.00	Very limited wetness (very limited)	1.00
74646: Cornwall-----	Moderately limited percs slowly (moderately limited) wetness (moderately limited)	0.39  0.35	Moderately limited percs slowly (moderately limited) wetness (slightly limited)	0.39  0.13	Limited slope (limited) percs slowly (moderately limited) wetness (moderately limited)	0.98  0.39  0.35	Slightly limited wetness (slightly limited)	0.13
74648: Aslinger-----	Moderately limited wetness (moderately limited) percs slowly (slightly limited)	0.50  0.13	Slightly limited wetness (slightly limited) percs slowly (slightly limited)	0.28  0.13	Limited slope (limited) wetness (moderately limited) percs slowly (slightly limited)	0.98  0.50  0.13	Slightly limited wetness (slightly limited)	0.28
74649: Aslinger-----	Moderately limited wetness (moderately limited) too acid (slightly limited) percs slowly (slightly limited)	0.50  0.30  0.13	Slightly limited too acid (slightly limited) wetness (slightly limited) percs slowly (slightly limited)	0.30  0.28  0.13	Very limited slope (very limited) wetness (moderately limited) too acid (slightly limited)	1.00  0.50  0.30	Very limited erodes easily (very limited) wetness (slightly limited)	1.00  0.28
Waben-----	Not limited		Not limited		Limited small stones (limited) slope (limited) large stones (slightly limited)	0.84  0.78  0.18	Not limited	
74679: Higdon-----	Limited wetness (limited) flooding (rare) (limited) percs slowly (slightly limited)	0.96  0.90  0.13	Limited wetness (limited) percs slowly (slightly limited)	0.61  0.13	Limited wetness (limited) percs slowly (slightly limited)	0.96  0.13	Limited wetness (limited)	0.61
74680: Moniteau-----	Very limited wetness (very limited) flooding (rare) (limited) percs slowly (slightly limited)	1.00  0.90  0.13	Very limited wetness (very limited) percs slowly (slightly limited)	1.00  0.13	Very limited wetness (very limited) percs slowly (slightly limited)	1.00  0.13	Very limited wetness (very limited)	1.00

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74685: Auxvasse-----	Very limited percs slowly (very limited) wetness (limited)	1.00  0.96	Very limited percs slowly (very limited) wetness (limited)	1.00  0.61	Very limited percs slowly (very limited) wetness (limited) slope (moderately limited)	1.00  0.96  0.40	Limited wetness (limited)	0.61
75379: Kaintuck-----	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60
75381: Bearthicket-----	Limited flooding (rare) (limited)	0.90	Not limited		Not limited		Not limited	
75395: Jamesfin-----	Very limited flooding (very limited)	1.00	Not limited		Moderately limited flooding (moderately limited)	0.60	Not limited	
75408: Secesh-----	Limited flooding (rare) (limited)	0.90	Not limited		Limited small stones (limited)	0.92	Not limited	
75409: Relfe-----	Very limited flooding (very limited)	1.00	Not limited		Limited small stones (limited) flooding (moderately limited)	0.84  0.60	Not limited	
75411: Tilk-----	Very limited small stones (very limited) flooding (rare) (limited)	1.00  0.90	Very limited small stones (very limited)	1.00	Very limited small stones (very limited) large stones (slightly limited)	1.00  0.30	Limited small stones (limited)	0.78
75416: Gladden-----	Very limited flooding (very limited)	1.00	Not limited		Moderately limited flooding (moderately limited)	0.60	Not limited	
75417: Relfe-----	Very limited flooding (very limited) small stones (very limited)	1.00  1.00	Very limited small stones (very limited) flooding (moderately limited)	1.00  0.60	Very limited flooding (very limited) small stones (very limited)	1.00  1.00	Moderately limited flooding (moderately limited) small stones (moderately limited)	0.60  0.56
Sandbur-----	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75426: Gabriel-----	Limited wetness (limited) flooding (rare) (limited) percs slowly (slightly limited)	0.96  0.90  0.13	Limited wetness (limited) percs slowly (slightly limited)	0.61  0.13	Limited wetness (limited) percs slowly (slightly limited)	0.96  0.13	Limited wetness (limited)	0.61
75428: Tilk-----	Very limited flooding (very limited) small stones (moderately limited)	1.00  0.58	Moderately limited small stones (moderately limited)	0.58	Very limited small stones (very limited) flooding (moderately limited) large stones (moderately limited)	1.00  0.60  0.60	Not limited	
Cornwall-----	Very limited wetness (very limited) percs slowly (moderately limited) slope (slightly limited)	1.00  0.39  0.04	Limited wetness (limited) percs slowly (moderately limited) slope (slightly limited)	0.68  0.39  0.04	Very limited wetness (very limited) slope (very limited) percs slowly (moderately limited)	1.00  1.00  0.39	Limited wetness (limited)	0.68
Poynor-----	Limited slope (limited) small stones (moderately limited) too acid (slightly limited)	0.63  0.33  0.18	Limited slope (limited) small stones (moderately limited) too acid (slightly limited)	0.63  0.33  0.18	Very limited slope (very limited) small stones (very limited) too acid (slightly limited)	1.00  1.00  0.18	Not limited	
75429: Tilk-----	Very limited flooding (very limited) small stones (very limited)	1.00  1.00	Very limited small stones (very limited)	1.00	Very limited small stones (very limited) flooding (moderately limited) large stones (slightly limited)	1.00  0.60  0.01	Limited small stones (limited)	0.77
Secesh-----	Limited flooding (rare) (limited) small stones (moderately limited) large stones (slightly limited)	0.90  0.37  0.17	Moderately limited small stones (moderately limited) large stones (slightly limited)	0.37  0.17	Very limited large stones >25% (very limited) small stones (very limited)	1.00  1.00	Slightly limited large stones (slightly limited)	0.17
75430: Wideman-----	Very limited flooding (very limited)	1.00	Not limited		Moderately limited flooding (moderately limited)	0.60	Not limited	
75451: Gladden-----	Very limited flooding (very limited)	1.00	Not limited		Moderately limited flooding (moderately limited)	0.60	Not limited	

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75467: Wilbur-----	Very limited flooding (very limited) wetness (limited)	1.00  0.72	Moderately limited flooding (moderately limited) wetness (moderately limited)	0.60  0.43	Very limited flooding (very limited) wetness (limited)	1.00  0.72	Moderately limited flooding (moderately limited) wetness (moderately limited)	0.60  0.43
75468: Elsah-----	Very limited flooding (very limited) small stones (moderately limited)	1.00  0.33	Moderately limited flooding (moderately limited) small stones (moderately limited)	0.60  0.33	Very limited flooding (very limited) small stones (very limited)	1.00  1.00	Moderately limited flooding (moderately limited)	0.60
77000: Killarney-----	Very limited slope (very limited) large surface stones (very limited) percs slowly (very limited)	1.00  1.00  1.00	Very limited large surface stones (very limited) slope (very limited) percs slowly (very limited)	1.00  1.00  1.00	Very limited slope (very limited) percs slowly (very limited) small stones (very limited)	1.00  1.00  1.00	Very limited large surface stones (very limited) slope (very limited) small stones (slightly limited)	1.00  1.00  0.12
Frenchmill-----	Very limited slope (very limited) large surface stones (very limited) small stones (moderately limited)	1.00  1.00  0.46	Very limited large surface stones (very limited) slope (very limited) small stones (moderately limited)	1.00  1.00  0.46	Very limited slope (very limited) small stones (very limited) large stones (limited)	1.00  1.00  0.95	Very limited large surface stones (very limited) slope (very limited)	1.00  1.00
77002: Delassus-----	Very limited percs slowly (very limited) wetness (moderately limited)	1.00  0.41	Very limited percs slowly (very limited) wetness (slightly limited)	1.00  0.19	Very limited percs slowly (very limited) slope (limited) wetness (moderately limited)	1.00  0.98  0.41	Slightly limited wetness (slightly limited)	0.19
77005: Hassler-----	Very limited slope (very limited) wetness (moderately limited) percs slowly (slightly limited)	1.00  0.43  0.17	Very limited slope (very limited) wetness (slightly limited) percs slowly (slightly limited)	1.00  0.21  0.17	Very limited slope (very limited) wetness (moderately limited) percs slowly (slightly limited)	1.00  0.43  0.17	Slightly limited wetness (slightly limited) slope (slightly limited) large surface stones (slightly limited)	0.21  0.17  0.17
Syenite-----	Very limited slope (very limited) too acid (slightly limited) percs slowly (slightly limited)	1.00  0.18  0.17	Very limited slope (very limited) too acid (slightly limited) percs slowly (slightly limited)	1.00  0.18  0.17	Very limited slope (very limited) depth to bedrock (moderately limited) large stones (slightly limited)	1.00  0.35  0.18	Moderately limited slope (moderately limited) large surface stones (slightly limited)	0.33  0.17

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value						
77008: Hassler-----	Moderately limited wetness (moderately limited)	0.43	Slightly limited wetness (slightly limited)	0.21	Very limited slope (very limited)	1.00	Slightly limited wetness (slightly limited)	0.21
	percs slowly (slightly limited)	0.17	percs slowly (slightly limited)	0.17	wetness (moderately limited)	0.43	large surface stones (slightly limited)	0.17
	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	percs slowly (slightly limited)	0.17		
80000: Calhoun-----	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.99	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.99
	percs slowly (moderately limited)	0.40	percs slowly (moderately limited)	0.40	percs slowly (moderately limited)	0.40		
80001: Oaklimeter-----	Moderately limited wetness (moderately limited)	0.50	Slightly limited wetness (slightly limited)	0.28	Moderately limited wetness (moderately limited)	0.50	Slightly limited wetness (slightly limited)	0.28
82000: Dubbs-----	Not limited		Not limited		Not limited		Not limited	
82001: Amagon-----	Very limited ponded (wetness) (very limited)	1.00	Very limited ponded (wetness) (very limited)	1.00	Very limited ponded (wetness) (very limited)	1.00	Very limited ponded (wetness) (very limited)	1.00
	wetness (very limited)	1.00						
	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39		
82002: Forestdale-----	Very limited ponded (wetness) (very limited)	1.00	Very limited ponded (wetness) (very limited)	1.00	Very limited ponded (wetness) (very limited)	1.00	Very limited ponded (wetness) (very limited)	1.00
	wetness (very limited)	1.00						
	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	too clayey (very limited)	0.96
82005: Malden-----	Moderately limited too sandy (moderately limited)	0.50	Moderately limited too sandy (moderately limited)	0.50	Moderately limited too sandy (moderately limited)	0.50	Moderately limited too sandy (moderately limited)	0.50
82006: Bosket-----	Slightly limited too acid (slightly limited)	0.06	Slightly limited too acid (slightly limited)	0.06	Slightly limited slope (slightly limited)	0.10	Not limited too acid (slightly limited)	
82007: Bosket-----	Very limited flooding (very limited)	1.00	Not limited		Moderately limited flooding (moderately limited)	0.60	Not limited	

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82009: Forestdale-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	too clayey (very limited)	0.96
	too clayey (very limited)	0.96	too clayey (very limited)	0.96	too clayey (very limited)	0.96		
82010: Amagon-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39		
82011: Crowley-----	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.99
	percs slowly (very limited)	1.00	wetness (limited)	0.99	percs slowly (very limited)	1.00		
86000: Dubbs-----	Very limited flooding (very limited)	1.00	Not limited		Moderately limited flooding (moderately limited)	0.60	Not limited	
86001: Calhoun-----	Very limited flooding (very limited)	1.00	Limited wetness (limited)	0.99	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.99
	wetness (very limited)	1.00	percs slowly (slightly limited)	0.23	flooding (moderately limited)	0.60		
	percs slowly (slightly limited)	0.23			percs slowly (slightly limited)	0.23		
86002: Falaya-----	Very limited flooding (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	wetness (very limited)	1.00			flooding (moderately limited)	0.60		
86003: Amagon-----	Very limited flooding (very limited)	1.00	Limited wetness (limited)	0.61	Limited wetness (limited)	0.96	Limited wetness (limited)	0.61
	wetness (limited)	0.96	percs slowly (moderately limited)	0.39	flooding (moderately limited)	0.60		
	percs slowly (moderately limited)	0.39			percs slowly (moderately limited)	0.39		
86004: Forestdale-----	Very limited flooding (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	wetness (very limited)	1.00	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	too clayey (moderately limited)	0.60
	percs slowly (very limited)	1.00	too clayey (moderately limited)	0.60	too clayey (moderately limited)	0.60		

Table 10.--Recreational Site Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds		Paths and trails	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
90000: Memphis-----	Not limited		Not limited		Limited slope (limited)	0.98	Not limited	
90001: Memphis-----	Limited slope (limited)	0.63	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Very limited erodes easily (very limited)	1.00
99001: Water-----	Not rated		Not rated		Not rated		Not rated	
99003: Miscellaneous water	Not rated		Not rated		Not rated		Not rated	
99007: Dam-----	Not rated		Not rated		Not rated		Not rated	
99015: Udorthents-----	Not rated		Not rated		Not rated		Not rated	
Water-----	Not rated		Not rated		Not rated		Not rated	

Table 11a.--Wildlife Habitat

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Limited high erodibility (limited) wetness (slightly limited) percs slowly (slightly limited)	0.80  0.13 0.13	Limited high erodibility (limited) wetness (slightly limited) percs slowly (slightly limited)	0.80  0.13 0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Moderately limited wetness (moderately limited)	0.37
60046: Minnith-----	Limited high erodibility (limited) slope (moderately limited)	0.80  0.60	Limited high erodibility (limited) slope (moderately limited)	0.80  0.60	Not limited		Not limited		Slightly limited wetness (slightly limited)	0.30
60053: Winfield-----	Limited high erodibility (limited) wetness (moderately limited)	0.80  0.55	Limited high erodibility (limited) wetness (moderately limited)	0.80  0.55	Moderately limited wetness (moderately limited)	0.55	Moderately limited wetness (moderately limited)	0.55	Limited wetness (limited)	0.85
60054: Minnith-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Not limited		Not limited		Slightly limited wetness (slightly limited)	0.30
60055: Winfield-----	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Moderately limited wetness (moderately limited)	0.37

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66000:										
Moniteau-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	flooding (moderately limited)	0.60	flooding (moderately limited)	0.60						
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13						
66054:										
Wakeland-----	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited wetness (limited)	0.81	Limited wetness (limited)	0.81	Very limited wetness (very limited)	1.00
	wetness (limited)	0.81	wetness (limited)	0.81						
66055:										
Haymond-----	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited)	0.60	Not limited		Not limited		Not limited	
73055:										
Alred-----	Very limited small stones (very limited)	1.00	Very limited small stones (very limited)	1.00	Moderately limited small stones (moderately limited)	0.31	Slightly limited small stones (slightly limited)	0.12	Not limited	
	droughty (limited)	0.99	high erodibility (limited)	0.80						
	high erodibility (limited)	0.80	slope (moderately limited)	0.60						
Rueter-----	Very limited small stones (very limited)	1.00	Very limited small stones (very limited)	1.00	Slightly limited small stones (slightly limited)	0.28	Slightly limited small stones (slightly limited)	0.08	Not limited	
	droughty (limited)	0.86	high erodibility (limited)	0.80						
	high erodibility (limited)	0.80	slope (moderately limited)	0.60						

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73100: Wrengart-----	Moderately limited moderate erodibility (moderately limited) wetness (slightly limited) percs slowly (slightly limited)	0.50 0.13 0.13	Moderately limited moderate erodibility (moderately limited) wetness (slightly limited) percs slowly (slightly limited)	0.50 0.13 0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Moderately limited wetness (moderately limited)	0.37
73101: Wrengart-----	Limited high erodibility (limited) wetness (slightly limited) percs slowly (slightly limited)	0.80 0.13 0.13	Limited high erodibility (limited) wetness (slightly limited) percs slowly (slightly limited)	0.80 0.13 0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Moderately limited wetness (moderately limited)	0.37
73139: Poynor-----	Limited droughty (limited) high erodibility (limited) small stones (limited)	0.96 0.80 0.69	Limited high erodibility (limited) small stones (limited)	0.80 0.69	Slightly limited small stones (slightly limited)	0.14	Not limited		Not limited	
Clarksville----	Limited droughty (very limited) high erodibility (limited) small stones (moderately limited)	0.99 0.80 0.31	Limited high erodibility (limited) small stones (moderately limited)	0.80 0.31	Slightly limited small stones (slightly limited)	0.04	Not limited		Not limited	
Scholten-----	Very limited droughty (very limited) percs slowly (very limited) high erodibility (limited)	1.00 1.00 0.80	Very limited percs slowly (very limited) high erodibility (limited) wetness (limited)	1.00 0.80 0.78	Limited wetness (limited) droughty (moderately limited) small stones (slightly limited)	0.78 0.45 0.06	Limited wetness (limited) droughty (moderately limited)	0.78 0.45	Very limited wetness (very limited) droughty (moderately limited)	1.00 0.45

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73140: Clarksville----	Limited droughty (limited)	0.90	Limited small stones (limited)	0.82	Slightly limited small stones (slightly limited)	0.17	Not limited		Not limited	
	small stones (limited)	0.82	high erodibility (limited)	0.80						
	high erodibility (limited)	0.80	slope (limited)	0.79						
Scholten-----	Very limited percs slowly (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Limited small stones (limited)	0.80	Limited small stones (limited)	0.80	Moderately limited wetness (moderately limited)	0.39
	droughty (very limited)	1.00	small stones (very limited)	1.00	wetness (slightly limited)	0.17	wetness (slightly limited)	0.17	droughty (slightly limited)	0.05
	small stones (very limited)	1.00	high erodibility (limited)	0.80	droughty (slightly limited)	0.05	droughty (slightly limited)	0.05		
73141: Firebaugh-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Moderately limited wetness (moderately limited)	0.50	Moderately limited wetness (moderately limited)	0.50	Limited wetness (limited)	0.71
	wetness (moderately limited)	0.50	wetness (moderately limited)	0.50						
	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39						
73145: Crider-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Not limited		Not limited		Not limited	
73146: Marquand-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Moderately limited wetness (moderately limited)	0.37	Moderately limited wetness (moderately limited)	0.37	Moderately limited wetness (moderately limited)	0.52
	wetness (moderately limited)	0.37	wetness (moderately limited)	0.37						
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13						

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73150:										
Caneyville-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Not limited		Slightly limited depth to bedrock (slightly limited)	0.30	Slightly limited depth to bedrock (slightly limited)	0.30
	droughty (limited)	0.73	depth to bedrock (slightly limited)	0.30						
	depth to bedrock (slightly limited)	0.30	percs slowly (slightly limited)	0.13						
Bucklick-----	Limited droughty (limited)	0.94	Limited high erodibility (limited)	0.80	Not limited		Not limited		Not limited	
	high erodibility (limited)	0.80								
73151:										
Caneyville-----	Limited droughty (limited)	0.92	Limited high erodibility (limited)	0.80	Not limited		Slightly limited depth to bedrock (slightly limited)	0.28	Slightly limited depth to bedrock (slightly limited)	0.28
	high erodibility (limited)	0.80	slope (moderately limited)	0.31						
	slope (moderately limited)	0.31	depth to bedrock (slightly limited)	0.28						
Gasconade-----	Very limited droughty (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited shallow to bedrock (very limited)	1.00
	shallow to bedrock (very limited)	1.00	shallow to bedrock (very limited)	1.00	large stones (moderately limited)	0.42	shallow to bedrock (very limited)	1.00	droughty (very limited)	1.00
	high erodibility (limited)	0.80	high erodibility (limited)	0.80	too clayey (moderately limited)	0.36	large stones (moderately limited)	0.42	large stones (moderately limited)	0.42
Bucklick-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Not limited		Not limited		Not limited	
	slope (moderately limited)	0.31	slope (moderately limited)	0.31						
	droughty (slightly limited)	0.26								

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73156: Alred-----	Limited droughty (limited)	0.98	Limited high erodibility (limited)	0.80	Not limited		Not limited		Not limited	
	high erodibility (limited)	0.80	percs slowly (moderately limited)	0.39						
	percs slowly (moderately limited)	0.39								
Gepp-----	Very limited small stones (very limited)	1.00	Very limited small stones (very limited)	1.00	Moderately limited small stones (moderately limited)	0.31	Slightly limited small stones (slightly limited)	0.12	Not limited	
	droughty (very limited)	1.00	high erodibility (limited)	0.80						
	high erodibility (limited)	0.80								
73157: Captina-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.51
	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39						
	wetness (moderately limited)	0.36	wetness (moderately limited)	0.36						
73223: Coulstone-----	Very limited droughty (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited droughty (very limited)	1.00
	large stones >35% (very limited)	0.99	large stones >35% (very limited)	0.99	large stones (limited)	0.61	large stones (limited)	0.61	large stones (limited)	0.61
	high erodibility (limited)	0.80	high erodibility (limited)	0.80	small stones (slightly limited)	0.11				
Bender-----	Not rated		Not rated		Not rated		Not rated		Very limited droughty (very limited)	1.00
									large stones (moderately limited)	0.50
									depth to bedrock (slightly limited)	0.27

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73264: Alred-----	Limited droughty (limited) high erodibility (limited) slope (moderately limited)	0.81  0.80  0.60	Limited high erodibility (limited) slope (moderately limited) percs slowly (moderately limited)	0.80  0.60  0.40	Not limited		Not limited		Not limited	
Wrengart-----	Limited high erodibility (limited) slope (moderately limited) wetness (slightly limited)	0.80  0.31  0.28	Limited high erodibility (limited) slope (moderately limited) wetness (slightly limited)	0.80  0.31  0.28	Slightly limited wetness (slightly limited)	0.28	Slightly limited wetness (slightly limited)	0.28	Moderately limited wetness (moderately limited)	0.45
73265: Captina-----	Limited small stones (limited) high erodibility (limited) wetness (moderately limited)	0.93  0.80  0.47	Limited small stones (limited) high erodibility (limited) wetness (moderately limited)	0.93  0.80  0.47	Moderately limited wetness (moderately limited) small stones (slightly limited)	0.47  0.19	Moderately limited wetness (moderately limited)	0.47	Limited wetness (limited)	0.63
Scholten-----	Very limited percs slowly (very limited) droughty (very limited) wetness (limited)	1.00  1.00  0.83	Very limited percs slowly (very limited) wetness (limited) high erodibility (limited)	1.00  0.83  0.80	Limited wetness (limited) droughty (slightly limited) small stones (slightly limited)	0.83  0.16  0.11	Limited wetness (limited) droughty (slightly limited)	0.83  0.16	Very limited wetness (very limited) droughty (slightly limited)	1.00  0.16
73266: Hildebrecht----	Limited percs slowly (very limited) high erodibility (limited)	0.99  0.80	Limited percs slowly (very limited) high erodibility (limited)	0.99  0.80	Not limited		Not limited		Slightly limited wetness (slightly limited)	0.30

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73267:										
Yelton-----	Limited high erodibility (limited) wetness (moderately limited) percs slowly (moderately limited)	0.80 0.58 0.40	Limited high erodibility (limited) wetness (moderately limited) percs slowly (moderately limited)	0.80 0.58 0.40	Moderately limited wetness (moderately limited)	0.58	Moderately limited wetness (moderately limited)	0.58	Limited wetness (limited)	0.93
Scholten-----	Very limited percs slowly (very limited) droughty (very limited) wetness (limited)	1.00 1.00 0.83	Very limited percs slowly (very limited) wetness (limited) high erodibility (limited)	1.00 0.83 0.80	Limited wetness (limited) droughty (slightly limited)	0.83 0.16	Limited wetness (limited) droughty (slightly limited)	0.83 0.16	Very limited wetness (very limited) droughty (slightly limited)	1.00 0.16
73269:										
Brussels-----	Very limited droughty (very limited) slope (very limited) high erodibility (limited)	1.00 1.00 0.80	Very limited slope (very limited) high erodibility (limited) small stones (moderately limited)	1.00 0.80 0.57	Slightly limited small stones (slightly limited) droughty (slightly limited)	0.11 0.08	Slightly limited droughty (slightly limited)	0.08	Slightly limited droughty (slightly limited)	0.08
Gasconade-----	Very limited droughty (very limited) shallow to bedrock (very limited) slope (very limited)	1.00 1.00 1.00	Very limited droughty (very limited) shallow to bedrock (very limited) slope (very limited)	1.00 1.00 1.00	Very limited droughty (very limited) too clayey (limited)	1.00 0.76	Very limited droughty (very limited) shallow to bedrock (very limited) too clayey (limited)	1.00 1.00 0.76	Very limited shallow to bedrock (very limited) droughty (very limited)	1.00 1.00
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
73270:										
Wrengart-----	Limited high erodibility (limited) wetness (slightly limited) percs slowly (slightly limited)	0.80 0.13 0.13	Limited high erodibility (limited) wetness (slightly limited) percs slowly (slightly limited)	0.80 0.13 0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Moderately limited wetness (moderately limited)	0.37

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73343: Captina-----	Limited high erodibility (limited) droughty (moderately limited) wetness (moderately limited)	0.80 0.49 0.47	Limited high erodibility (limited) wetness (moderately limited) percs slowly (moderately limited)	0.80 0.47 0.39	Moderately limited wetness (moderately limited)	0.47	Moderately limited wetness (moderately limited)	0.47	Limited wetness (limited)	0.63
73344: Captina-----	Limited high erodibility (limited) wetness (moderately limited) percs slowly (moderately limited)	0.80 0.47 0.39	Limited high erodibility (limited) wetness (moderately limited) percs slowly (moderately limited)	0.80 0.47 0.39	Moderately limited wetness (moderately limited)	0.47	Moderately limited wetness (moderately limited)	0.47	Limited wetness (limited)	0.63
73345: Hildebrecht----	Moderately limited moderate erodibility (moderately limited) percs slowly (moderately limited) wetness (moderately limited)	0.50 0.39 0.36	Moderately limited moderate erodibility (moderately limited) percs slowly (moderately limited) wetness (moderately limited)	0.50 0.39 0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.51
73346: Hildebrecht----	Moderately limited moderate erodibility (moderately limited) percs slowly (moderately limited) wetness (moderately limited)	0.50 0.39 0.36	Moderately limited moderate erodibility (moderately limited) percs slowly (moderately limited) wetness (moderately limited)	0.50 0.39 0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.51
74644: Deible-----	Very limited wetness (very limited) percs slowly (very limited) moderate erodibility (moderately limited)	1.00 1.00 0.50	Very limited wetness (very limited) percs slowly (very limited) moderate erodibility (moderately limited)	1.00 1.00 0.50	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74646: Cornwall-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.51
	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39						
	wetness (moderately limited)	0.36	wetness (moderately limited)	0.36						
74648: Aslinger-----	Very limited droughty (very limited)	1.00	Limited high erodibility (limited)	0.80	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.59
	high erodibility (limited)	0.80	wetness (moderately limited)	0.44	droughty (slightly limited)	0.01	droughty (slightly limited)	0.01	droughty (slightly limited)	0.01
	wetness (moderately limited)	0.44	percs slowly (slightly limited)	0.13						
74649: Aslinger-----	Very limited droughty (very limited)	1.00	Limited high erodibility (limited)	0.80	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.59
	high erodibility (limited)	0.80	wetness (moderately limited)	0.44	droughty (slightly limited)	0.06	droughty (slightly limited)	0.06	droughty (slightly limited)	0.06
	wetness (moderately limited)	0.44	percs slowly (slightly limited)	0.13						
Waben-----	Very limited droughty (very limited)	1.00	Limited high erodibility (limited)	0.80	Slightly limited droughty (slightly limited)	0.01	Slightly limited droughty (slightly limited)	0.01	Slightly limited droughty (slightly limited)	0.01
	high erodibility (limited)	0.80	droughty (slightly limited)	0.01						
74679: Higdon-----	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Limited wetness (limited)	0.99
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13						

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74680: Moniteau-----	Very limited wetness (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited wetness (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
74685: Auxvasse-----	Very limited percs slowly (very limited) wetness (moderately limited) moderate erodibility (moderately limited)	1.00 0.60 0.50	Very limited percs slowly (very limited) wetness (moderately limited) moderate erodibility (moderately limited)	1.00 0.60 0.50	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Limited wetness (limited)	0.99
75379: Kaintuck-----	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Not limited		Not limited		Not limited	
75381: Bearthicket---	Moderately limited moderate erodibility (moderately limited)	0.50	Moderately limited moderate erodibility (moderately limited)	0.50	Not limited		Not limited		Not limited	
75395: Jamesfin-----	Moderately limited flooding (moderately limited) moderate erodibility (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited) moderate erodibility (moderately limited)	0.60 0.50	Not limited		Not limited		Not limited	
75408: Secesh-----	Moderately limited moderate erodibility (moderately limited)	0.50	Moderately limited moderate erodibility (moderately limited)	0.50	Not limited		Not limited		Not limited	

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75409: Relfe-----	Very limited droughty (very limited) flooding (moderately limited) moderate erodibility (moderately limited)	1.00  0.60  0.50	Limited droughty (limited) flooding (moderately limited) moderate erodibility (moderately limited)	0.84  0.60  0.50	Limited droughty (limited) droughty (slightly limited)	0.84   0.04	Limited droughty (limited)	0.84	Limited droughty (limited)	0.84
75411: Tilk-----	Very limited small stones (very limited) droughty (very limited) moderate erodibility (moderately limited)	1.00  1.00  0.50	Very limited small stones (very limited) moderate erodibility (moderately limited) droughty (slightly limited)	1.00  0.50  0.04	Limited small stones (limited) droughty (slightly limited)	0.77  0.04	Limited small stones (limited) droughty (slightly limited)	0.78  0.04	Slightly limited droughty (slightly limited)	0.04
75416: Gladden-----	Moderately limited flooding (moderately limited) moderate erodibility (moderately limited)	0.60  0.50	Moderately limited flooding (moderately limited) moderate erodibility (moderately limited)	0.60  0.50	Not limited		Not limited		Not limited	
75417: Relfe-----	Very limited droughty (very limited) small stones (very limited) flooding (limited)	1.00  1.00  0.90	Very limited droughty (very limited) small stones (very limited) flooding (limited)	1.00  1.00  0.90	Very limited droughty (very limited) small stones (moderately limited)	1.00  0.58	Very limited droughty (very limited) small stones (moderately limited)	1.00  0.56	Very limited droughty (very limited)	1.00
Sandbur-----	Limited flooding (limited) droughty (moderately limited)	0.90  0.34	Limited flooding (limited)	0.90	Not limited		Not limited		Not limited	

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75426: Gabriel-----	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Limited wetness (limited)	0.99
	percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13						
75428: Tilk-----	Very limited droughty (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60	Moderately limited droughty (moderately limited)	0.55	Moderately limited droughty (moderately limited)	0.55	Moderately limited droughty (moderately limited)	0.55
	flooding (moderately limited)	0.60	small stones (moderately limited)	0.58	small stones (slightly limited)	0.11				
	small stones (moderately limited)	0.58	droughty (moderately limited)	0.55						
Cornwall-----	Limited wetness (limited)	0.68	Limited wetness (limited)	0.68	Limited wetness (limited)	0.68	Limited wetness (limited)	0.68	Very limited wetness (very limited)	1.00
	percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39						
Poynor-----	Very limited droughty (very limited)	1.00	Moderately limited droughty (moderately limited)	0.44	Moderately limited droughty (moderately limited)	0.44	Moderately limited droughty (moderately limited)	0.44	Moderately limited droughty (moderately limited)	0.44
	small stones (moderately limited)	0.33	small stones (moderately limited)	0.33	small stones (slightly limited)	0.04				
75429: Tilk-----	Very limited small stones (very limited)	1.00	Very limited small stones (very limited)	1.00	Limited small stones (limited)	0.77	Limited small stones (limited)	0.77	Not limited	
	droughty (very limited)	1.00	flooding (moderately limited)	0.60						
	flooding (moderately limited)	0.60								
Secesh-----	Moderately limited large stones (moderately limited)	0.45	Moderately limited large stones (moderately limited)	0.45	Slightly limited large stones (slightly limited)	0.17	Slightly limited large stones (slightly limited)	0.17	Slightly limited large stones (slightly limited)	0.17
	small stones (moderately limited)	0.37	small stones (moderately limited)	0.37	small stones (slightly limited)	0.05				

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75430: Wideman-----	Limited droughty (limited) flooding (moderately limited)	0.65  0.60	Moderately limited flooding (moderately limited)	0.60	Not limited		Not limited		Not limited	
75451: Gladden-----	Moderately limited flooding (moderately limited) droughty (slightly limited)	0.60  0.01	Moderately limited flooding (moderately limited)	0.60	Not limited		Not limited		Not limited	
75467: Wilbur-----	Limited flooding (limited) wetness (moderately limited)	0.90  0.52	Limited flooding (limited) wetness (moderately limited)	0.90  0.52	Moderately limited wetness (moderately limited)	0.52	Moderately limited wetness (moderately limited)	0.52	Limited wetness (limited)	0.77
75468: Elsah-----	Limited flooding (limited) moderate erodibility (moderately limited) small stones (moderately limited)	0.90  0.50 0.33	Limited flooding (limited) moderate erodibility (moderately limited) small stones (moderately limited)	0.90  0.50 0.33	Slightly limited small stones (slightly limited)	0.04	Not limited		Not limited	
77000: Killarney-----	Very limited percs slowly (very limited) small stones (very limited) droughty (limited)	1.00  1.00 0.88	Very limited percs slowly (very limited) small stones (very limited) high erodibility (limited)	1.00  1.00 0.80	Moderately limited small stones (moderately limited) wetness (slightly limited)	0.31  0.28	Slightly limited wetness (slightly limited) small stones (slightly limited)	0.28  0.12	Moderately limited wetness (moderately limited)	0.45

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77000: Frenchmill-----	Limited high erodibility (limited) slope (limited) droughty (limited)	0.80 0.79 0.61	Limited high erodibility (limited) slope (limited) small stones (moderately limited)	0.80 0.79 0.46	Slightly limited small stones (slightly limited)	0.08	Not limited		Not limited	
77002: Delassus-----	Very limited percs slowly (very limited) high erodibility (limited) wetness (moderately limited)	1.00 0.80 0.39	Very limited percs slowly (very limited) high erodibility (limited) wetness (moderately limited)	1.00 0.80 0.39	Moderately limited wetness (moderately limited)	0.39	Moderately limited wetness (moderately limited)	0.39	Moderately limited wetness (moderately limited)	0.54
77005: Hassler-----	Limited high erodibility (limited) wetness (moderately limited) percs slowly (slightly limited)	0.80 0.40 0.17	Limited high erodibility (limited) wetness (moderately limited) percs slowly (slightly limited)	0.80 0.40 0.17	Moderately limited wetness (moderately limited)	0.40	Moderately limited wetness (moderately limited)	0.40	Moderately limited wetness (moderately limited)	0.55
Syenite-----	Limited high erodibility (limited) droughty (moderately limited) depth to bedrock (moderately limited)	0.80 0.40 0.35	Limited high erodibility (limited) depth to bedrock (moderately limited) slope (slightly limited)	0.80 0.35 0.20	Not limited		Moderately limited depth to bedrock (moderately limited)	0.35	Moderately limited depth to bedrock (moderately limited)	0.35
77008: Hassler-----	Limited high erodibility (limited) wetness (moderately limited) percs slowly (slightly limited)	0.80 0.40 0.17	Limited high erodibility (limited) wetness (moderately limited) percs slowly (slightly limited)	0.80 0.40 0.17	Moderately limited wetness (moderately limited)	0.40	Moderately limited wetness (moderately limited)	0.40	Moderately limited wetness (moderately limited)	0.55

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
80000: Calhoun-----	Limited wetness (limited) percs slowly (moderately limited)	0.99 0.40	Limited wetness (limited) percs slowly (moderately limited)	0.99 0.40	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99	Very limited wetness (very limited)	1.00
80001: Oaklimeter----	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.59
82000: Dubbs-----	Moderately limited moderate erodibility (moderately limited)	0.50	Moderately limited moderate erodibility (moderately limited)	0.50	Not limited		Not limited		Not limited	
82001: Amagon-----	Very limited wetness (very limited) ponded (wetness) (very limited) percs slowly (moderately limited)	1.00 1.00 0.39	Very limited wetness (very limited) ponded (wetness) (very limited) percs slowly (moderately limited)	1.00 1.00 0.39	Very limited wetness (very limited) seasonally ponded (limited)	1.00 0.80	Very limited wetness (very limited) seasonally ponded (limited)	1.00 0.80	Very limited wetness (very limited) seasonally ponded (limited)	1.00 0.80
82002: Forestdale----	Very limited wetness (very limited) ponded (wetness) (very limited) percs slowly (very limited)	1.00 1.00 1.00	Very limited wetness (very limited) ponded (wetness) (very limited) percs slowly (very limited)	1.00 1.00 1.00	Very limited wetness (very limited) seasonally ponded (limited) too clayey (slightly limited)	1.00 0.80 0.30	Very limited wetness (very limited) seasonally ponded (limited) too clayey (slightly limited)	1.00 0.80 0.30	Very limited wetness (very limited) seasonally ponded (limited)	1.00 0.80
82005: Malden-----	Very limited droughty (very limited) too sandy (moderately limited)	1.00 0.50	Limited droughty (limited) too sandy (moderately limited)	0.70 0.50	Limited droughty (limited) too sandy (moderately limited)	0.70 0.50	Limited droughty (limited) too sandy (moderately limited)	0.70 0.50	Limited droughty (limited)	0.70

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82006: Bosket-----	Not limited		Not limited		Not limited		Not limited		Not limited	
82007: Bosket-----	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited)	0.60	Not limited		Not limited		Not limited	
82009: Forestdale----	Very limited wetness (very limited) percs slowly (very limited) too clayey (slightly limited)	1.00 1.00 0.30	Very limited wetness (very limited) percs slowly (very limited) too clayey (slightly limited)	1.00 1.00 0.30	Very limited wetness (very limited) too clayey (slightly limited)	1.00 1.00 0.30	Very limited wetness (very limited) too clayey (slightly limited)	1.00 1.00 0.30	Very limited wetness (very limited)	1.00
82010: Amagon-----	Very limited wetness (very limited) percs slowly (moderately limited)	1.00 0.39	Very limited wetness (very limited) percs slowly (moderately limited)	1.00 0.39	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
82011: Crowley-----	Very limited percs slowly (very limited) wetness (limited)	1.00 0.99	Very limited percs slowly (very limited) wetness (limited)	1.00 0.99	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99	Very limited wetness (very limited)	1.00
86000: Dubbs-----	Moderately limited flooding (moderately limited) moderate erodibility (moderately limited)	0.60 0.50	Moderately limited flooding (moderately limited) moderate erodibility (moderately limited)	0.60 0.50	Not limited		Not limited		Not limited	

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86001: Calhoun-----	Limited wetness (limited) flooding (moderately limited) percs slowly (slightly limited)	0.99 0.60 0.23	Limited wetness (limited) flooding (moderately limited) percs slowly (slightly limited)	0.99 0.60 0.23	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99	Very limited wetness (very limited)	1.00
86002: Falaya-----	Very limited wetness (very limited) flooding (moderately limited)	1.00 0.60	Very limited wetness (very limited) flooding (moderately limited)	1.00 0.60	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
86003: Amagon-----	Moderately limited flooding (moderately limited) wetness (moderately limited) percs slowly (moderately limited)	0.60 0.60 0.39	Moderately limited flooding (moderately limited) wetness (moderately limited) percs slowly (moderately limited)	0.60 0.60 0.39	Moderately limited wetness (moderately limited)	0.60	Moderately limited wetness (moderately limited)	0.60	Limited wetness (limited)	0.99
86004: Forestdale----	Very limited wetness (very limited) percs slowly (very limited) flooding (moderately limited)	1.00 1.00 0.60	Very limited wetness (very limited) percs slowly (very limited) flooding (moderately limited)	1.00 1.00 0.60	Very limited wetness (very limited) too clayey (slightly limited)	1.00 0.04	Very limited wetness (very limited) too clayey (slightly limited)	1.00 0.04	Very limited wetness (very limited)	1.00
90000: Memphis-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Not limited		Not limited		Not limited	
90001: Memphis-----	Limited high erodibility (limited)	0.80	Limited high erodibility (limited)	0.80	Not limited		Not limited		Not limited	

Table 11a.--Wildlife Habitat--Continued

Map symbol and soil name	Grain and seed crops (for use as food and cover)		Domestic grasses and legumes (for use as food and cover)		Upland wild herbaceous plants		Upland shrubs and vines		Upland deciduous trees	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
99001: Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99003: Miscellaneous water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99007: Dam-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99015: Udorthents----	Not rated		Not rated		Not rated		Not rated		Not rated	
Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 11b.--Wildlife Habitat

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Moderately limited wetness (moderately limited)	0.37	Limited deep to water (limited) infrequent flooding (limited)	0.82	Not limited		Limited deep to water (limited)	0.82	Limited slope (limited) seepage (slightly limited)	0.91 0.18
60046: Minnith-----	Slightly limited wetness (slightly limited)	0.30	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Slightly limited deep to water (slightly limited)	0.01	Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited) deep to water (slightly limited)	1.00 0.42 0.01
60053: Winfield-----	Limited wetness (limited)	0.85	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.35	Not limited		Moderately limited deep to water (moderately limited)	0.35	Limited slope (limited) seepage (moderately limited)	0.66 0.45
60054: Minnith-----	Slightly limited wetness (slightly limited)	0.30	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Slightly limited deep to water (slightly limited)	0.01	Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited) deep to water (slightly limited)	1.00 0.42 0.01
60055: Winfield-----	Moderately limited wetness (moderately limited)	0.37	Limited deep to water (limited) infrequent flooding (limited)	0.82 0.80	Not limited		Limited deep to water (limited)	0.82	Moderately limited seepage (moderately limited) slope (slightly limited)	0.45 0.17

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66000: Moniteau-----	Very limited wetness (very limited)	1.00	Moderately limited infrequent flooding (moderately limited)	0.50	Not limited		Not limited		Slightly limited seepage (slightly limited)	0.18
66054: Wakeland-----	Very limited wetness (very limited)	1.00	Moderately limited infrequent flooding (moderately limited) deep to water (slightly limited)	0.50 0.15	Not limited		Slightly limited deep to water (slightly limited)	0.15	Moderately limited seepage (moderately limited)	0.45
66055: Haymond-----	Not limited		Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
73055: Alred-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited) small stones (slightly limited)	1.00 0.80 0.12	Slightly limited small stones (slightly limited)	0.12	Very limited deep to water (very limited)	1.00	Very limited slope (very limited)	1.00
Rueter-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited) small stones (slightly limited)	1.00 0.80 0.08	Slightly limited small stones (slightly limited)	0.08	Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited)	1.00 0.45
73100: Wrengart-----	Moderately limited wetness (moderately limited)	0.37	Limited deep to water (limited) infrequent flooding (limited)	0.82 0.80	Not limited		Limited deep to water (limited)	0.82	Moderately limited slope (moderately limited) seepage (slightly limited)	0.31 0.18

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73101: Wrengart-----	Moderately limited wetness (moderately limited)	0.37	Limited deep to water (limited) infrequent flooding (limited)	0.82 0.80	Not limited		Limited deep to water (limited)	0.82	Very limited slope (very limited) seepage (slightly limited)	1.00 0.18
73139: Poynor-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited)	1.00 0.45
Clarksville----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited)	1.00 0.45
Scholten-----	Very limited wetness (very limited) droughty (moderately limited)	1.00 0.45	Limited infrequent flooding (limited) deep to water (slightly limited)	0.80 0.17	Moderately limited droughty (moderately limited)	0.45	Slightly limited deep to water (slightly limited) soil reaction (slightly limited)	0.17 0.12	Very limited slope (very limited) soil reaction (slightly limited)	1.00 0.12
73140: Clarksville----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited) soil reaction (slightly limited)	1.00 0.06	Very limited slope (very limited) seepage (moderately limited) soil reaction (slightly limited)	1.00 0.45 0.06
Scholten-----	Moderately limited wetness (moderately limited) droughty (slightly limited)	0.39 0.05	Limited infrequent flooding (limited) small stones (limited) deep to water (limited)	0.80 0.80 0.77	Limited small stones (limited) droughty (slightly limited)	0.80 0.05	Limited deep to water (limited)	0.77	Very limited slope (very limited)	1.00

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73141: Firebaugh-----	Limited wetness (limited)	0.71	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.40	Not limited		Moderately limited deep to water (moderately limited)	0.40	Limited slope (limited)	0.91
73145: Crider-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Limited slope (limited) seepage (moderately limited)	0.66 0.45
73146: Marquand-----	Moderately limited wetness (moderately limited)	0.52	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.52	Not limited		Moderately limited deep to water (moderately limited)	0.52	Limited slope (limited) seepage (slightly limited)	0.91 0.18
73150: Caneyville-----	Slightly limited depth to bedrock (slightly limited)	0.30	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (slightly limited)	1.00 0.18
Bucklick-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited)	1.00 0.45
73151: Caneyville-----	Slightly limited depth to bedrock (slightly limited)	0.28	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (slightly limited)	1.00 0.18

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151: Gasconade-----	Very limited shallow to bedrock (very limited)	1.00	Very limited deep to water (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited deep to water (very limited)	1.00	Very limited slope (very limited)	1.00
	droughty (very limited)	1.00	infrequent flooding (limited)	0.80	large stones (moderately limited)	0.42			seepage (slightly limited)	0.18
	large stones (moderately limited)	0.42	large stones (moderately limited)	0.42						
Bucklick-----	Not limited		Very limited deep to water (very limited)	1.00	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited)	1.00
			infrequent flooding (limited)	0.80					seepage (moderately limited)	0.45
73156: Alred-----	Not limited		Very limited deep to water (very limited)	1.00	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited)	1.00
			infrequent flooding (limited)	0.80						
Gepp-----	Not limited		Very limited deep to water (very limited)	1.00	Slightly limited small stones (slightly limited)	0.12	Very limited deep to water (very limited)	1.00	Very limited slope (very limited)	1.00
			infrequent flooding (limited)	0.80					seepage (moderately limited)	0.45
			small stones (slightly limited)	0.12						
73157: Captina-----	Moderately limited wetness (moderately limited)	0.51	Limited infrequent flooding (limited)	0.80	Not limited		Moderately limited deep to water (moderately limited)	0.53	Limited slope (limited)	0.91
			deep to water (moderately limited)	0.53						
73223: Coulstone-----	Very limited droughty (very limited)	1.00	Very limited deep to water (very limited)	1.00	Very limited droughty (very limited)	1.00	Very limited deep to water (very limited)	1.00	Very limited slope (very limited)	1.00
	large stones (limited)	0.61	infrequent flooding (limited)	0.80	large stones (limited)	0.61			seepage (limited)	0.79
			large stones (limited)	0.61						

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73223: Bender-----	Very limited droughty (very limited) large stones (moderately limited) depth to bedrock (slightly limited)	1.00  0.50  0.27	Very limited deep to water (very limited) infrequent flooding (limited) large stones (moderately limited)	1.00  0.80  0.50	Very limited droughty (very limited) large stones (moderately limited)	1.00  0.50	Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (limited)	1.00   0.89
73264: Alred-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00  0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited)	1.00
Wrengart-----	Moderately limited wetness (moderately limited)	0.45	Limited infrequent flooding (limited) deep to water (limited)	0.80  0.61	Not limited		Limited deep to water (limited)	0.61	Very limited slope (very limited) seepage (slightly limited)	1.00  0.18
73265: Captina-----	Limited wetness (limited)	0.63	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80  0.43	Not limited		Moderately limited deep to water (moderately limited)	0.43	Limited slope (limited)	0.91
Scholten-----	Very limited wetness (very limited) droughty (slightly limited)	1.00  0.16	Limited infrequent flooding (limited) deep to water (slightly limited)	0.80  0.13	Slightly limited droughty (slightly limited)	0.16	Slightly limited deep to water (slightly limited)	0.13	Limited slope (limited)	0.91
73266: Hildebrecht----	Slightly limited wetness (slightly limited)	0.30	Very limited deep to water (very limited) infrequent flooding (limited)	1.00  0.80	Slightly limited deep to water (slightly limited)	0.01	Very limited deep to water (very limited)	1.00	Very limited slope (very limited) deep to water (slightly limited)	1.00  0.01

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73267: Yelton-----	Limited wetness (limited)	0.93	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.32	Not limited		Moderately limited deep to water (moderately limited)	0.32	Very limited slope (very limited)	1.00
Scholten-----	Very limited wetness (very limited) droughty (slightly limited)	1.00 0.16	Limited infrequent flooding (limited) deep to water (slightly limited)	0.80 0.13	Slightly limited droughty (slightly limited)	0.16	Slightly limited deep to water (slightly limited) soil reaction (slightly limited)	0.13 0.12	Very limited slope (very limited) soil reaction (slightly limited)	1.00 0.12
73269: Brussels-----	Slightly limited droughty (slightly limited)	0.08	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Slightly limited droughty (slightly limited)	0.08	Very limited deep to water (very limited) soil reaction (slightly limited)	1.00 0.01	Very limited slope (very limited) seepage (slightly limited) soil reaction (slightly limited)	1.00 0.18 0.01
Gasconade-----	Very limited shallow to bedrock (very limited) droughty (very limited)	1.00 1.00	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Very limited droughty (very limited)	1.00	Very limited deep to water (very limited) soil reaction (slightly limited)	1.00 0.01	Very limited slope (very limited) seepage (slightly limited) soil reaction (slightly limited)	1.00 0.18 0.01
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
73270: Wrengart-----	Moderately limited wetness (moderately limited)	0.37	Limited deep to water (limited) infrequent flooding (limited)	0.82 0.80	Not limited		Limited deep to water (limited)	0.82	Very limited slope (very limited) seepage (slightly limited)	1.00 0.18
73343: Captina-----	Limited wetness (limited)	0.63	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.43	Not limited		Moderately limited deep to water (moderately limited)	0.43	Limited slope (limited)	0.91

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73344: Captina-----	Limited wetness (limited)	0.63	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.43	Not limited		Moderately limited deep to water (moderately limited)	0.43	Very limited slope (very limited)	1.00
73345: Hildebrecht----	Moderately limited wetness (moderately limited)	0.51	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.53	Not limited		Moderately limited deep to water (moderately limited)	0.53	Very limited slope (very limited)	1.00
73346: Hildebrecht----	Moderately limited wetness (moderately limited)	0.51	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.53	Not limited		Moderately limited deep to water (moderately limited) soil reaction (slightly limited)	0.53 0.06	Very limited slope (very limited) soil reaction (slightly limited)	1.00 0.06
74644: Deible-----	Very limited wetness (very limited)	1.00	Not limited		Not limited		Not limited		Not limited	
74646: Cornwall-----	Moderately limited wetness (moderately limited)	0.51	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.53	Not limited		Moderately limited deep to water (moderately limited)	0.53	Limited slope (limited)	0.91
74648: Aslinger-----	Moderately limited wetness (moderately limited) droughty (slightly limited)	0.59 0.01	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.45	Slightly limited droughty (slightly limited)	0.01	Moderately limited deep to water (moderately limited)	0.45	Limited slope (limited) seepage (slightly limited)	0.91 0.18

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74649:										
Aslinger-----	Moderately limited wetness (moderately limited)	0.59	Limited infrequent flooding (limited)	0.80	Slightly limited droughty (slightly limited)	0.06	Moderately limited deep to water (moderately limited)	0.45	Very limited slope (very limited)	1.00
	droughty (slightly limited)	0.06	deep to water (moderately limited)	0.45					seepage (slightly limited)	0.18
Waben-----	Slightly limited droughty (slightly limited)	0.01	Very limited deep to water (very limited)	1.00	Slightly limited droughty (slightly limited)	0.01	Very limited deep to water (very limited)	1.00	Limited seepage (limited)	0.79
			infrequent flooding (limited)	0.80					slope (limited)	0.66
74679:										
Higdon-----	Limited wetness (limited)	0.99	Slightly limited deep to water (slightly limited)	0.30	Not limited		Slightly limited deep to water (slightly limited)	0.30	Slightly limited seepage (slightly limited)	0.18
74680:										
Moniteau-----	Very limited wetness (very limited)	1.00	Not limited		Not limited		Not limited		Slightly limited seepage (slightly limited)	0.18
74685:										
Auxvasse-----	Limited wetness (limited)	0.99	Limited infrequent flooding (limited)	0.80	Not limited		Slightly limited deep to water (slightly limited)	0.30	Moderately limited slope (moderately limited)	0.31
			deep to water (slightly limited)	0.30						
75379:										
Kaintuck-----	Not limited		Very limited deep to water (very limited)	1.00	Not limited		Very limited deep to water (very limited)	1.00	Limited seepage (limited)	0.79
75381:										
Bearthicket----	Not limited		Very limited deep to water (very limited)	1.00	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
75395:										
Jamesfin-----	Not limited		Very limited deep to water (very limited)	1.00	Very limited deep to water (very limited)	1.00	Very limited deep to water (very limited)	1.00	Very limited deep to water (very limited)	1.00
			infrequent flooding (moderately limited)	0.50					seepage (moderately limited)	0.45

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75408: Secesh-----	Not limited		Very limited deep to water (very limited)	1.00	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
75409: Relfe-----	Limited droughty (limited)	0.84	Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Limited droughty (limited)	0.84	Very limited deep to water (very limited)	1.00	Very limited seepage (very limited)	1.00
75411: Tilk-----	Slightly limited droughty (slightly limited)	0.04	Very limited deep to water (very limited) small stones (limited)	1.00 0.78	Limited small stones (limited) droughty (slightly limited)	0.78 0.04	Very limited deep to water (very limited)	1.00	Limited seepage (limited)	0.79
75416: Gladden-----	Not limited		Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
75417: Relfe-----	Very limited droughty (very limited)	1.00	Very limited deep to water (very limited) small stones (moderately limited)	1.00 0.56	Very limited droughty (very limited) small stones (moderately limited)	1.00 0.56	Very limited deep to water (very limited)	1.00	Limited seepage (limited)	0.75
Sandbur-----	Not limited		Very limited deep to water (very limited)	1.00	Not limited		Very limited deep to water (very limited)	1.00	Limited seepage (limited)	0.79
75426: Gabriel-----	Limited wetness (limited)	0.99	Slightly limited deep to water (slightly limited)	0.30	Not limited		Slightly limited deep to water (slightly limited)	0.30	Slightly limited seepage (slightly limited)	0.18

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75428: Tilk-----	Moderately limited droughty (moderately limited)	0.55	Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Moderately limited droughty (moderately limited)	0.55	Very limited deep to water (very limited)	1.00	Limited seepage (limited) slope (slightly limited)	0.79 0.08
Cornwall-----	Very limited wetness (very limited)	1.00	Limited infrequent flooding (limited) deep to water (slightly limited)	0.80 0.24	Not limited		Slightly limited deep to water (slightly limited)	0.24	Very limited slope (very limited)	1.00
Poynor-----	Moderately limited droughty (moderately limited)	0.44	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Moderately limited droughty (moderately limited)	0.44	Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited)	1.00 0.36
75429: Tilk-----	Not limited		Very limited deep to water (very limited) small stones (limited) infrequent flooding (moderately limited)	1.00 0.77 0.50	Limited small stones (limited)	0.77	Very limited deep to water (very limited)	1.00	Limited seepage (limited)	0.79
Secesh-----	Slightly limited large stones (slightly limited)	0.17	Very limited deep to water (very limited) large stones (slightly limited)	1.00 0.17	Slightly limited large stones (slightly limited)	0.17	Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
75430: Wideman-----	Not limited		Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Not limited		Very limited deep to water (very limited)	1.00	Limited seepage (limited)	0.79

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75451: Gladden-----	Not limited		Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
75467: Wilbur-----	Limited wetness (limited)	0.77	Moderately limited deep to water (moderately limited)	0.38	Not limited		Moderately limited deep to water (moderately limited)	0.38	Moderately limited seepage (moderately limited)	0.45
75468: Elsah-----	Not limited		Very limited deep to water (very limited)	1.00	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
77000: Killarney-----	Moderately limited wetness (moderately limited)	0.45	Limited infrequent flooding (limited) deep to water (limited) small stones (slightly limited)	0.80 0.61 0.12	Slightly limited small stones (slightly limited)	0.12	Limited deep to water (limited)	0.61	Very limited slope (very limited)	1.00
Frenchmill----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited)	1.00 0.45
77002: Delassus-----	Moderately limited wetness (moderately limited)	0.54	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.50	Not limited		Moderately limited deep to water (moderately limited)	0.50	Limited slope (limited)	0.91
77005: Hassler-----	Moderately limited wetness (moderately limited)	0.55	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.49	Not limited		Moderately limited deep to water (moderately limited)	0.49	Very limited slope (very limited) seepage (slightly limited)	1.00 0.15

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77005: Syenite-----	Moderately limited depth to bedrock (moderately limited)	0.35	Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (slightly limited)	1.00 0.15
77008: Hassler-----	Moderately limited wetness (moderately limited)	0.55	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.49	Not limited		Moderately limited deep to water (moderately limited)	0.49	Very limited slope (very limited) seepage (slightly limited)	1.00 0.15
80000: Calhoun-----	Very limited wetness (very limited)	1.00	Limited infrequent flooding (limited) deep to water (slightly limited)	0.80 0.02	Not limited		Slightly limited deep to water (slightly limited)	0.02	Not limited	
80001: Oaklimeter-----	Moderately limited wetness (moderately limited)	0.59	Limited infrequent flooding (limited) deep to water (moderately limited)	0.80 0.45	Not limited		Moderately limited deep to water (moderately limited)	0.45	Moderately limited seepage (moderately limited)	0.45
82000: Dubbs-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
82001: Amagon-----	Very limited wetness (very limited) seasonally ponded (limited)	1.00 0.80	Limited seasonally ponded (limited) infrequent flooding (limited)	0.80 0.80	Limited seasonally ponded (limited)	0.80	Limited seasonally ponded (limited)	0.80	Limited seasonally ponded (limited)	0.80

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82002: Forestdale-----	Very limited wetness (very limited) seasonally ponded (limited)	1.00 0.80	Limited seasonally ponded (limited) infrequent flooding (limited)	0.80 0.80	Limited seasonally ponded (limited)	0.80	Limited seasonally ponded (limited)	0.80	Limited seasonally ponded (limited)	0.80
82005: Malden-----	Limited droughty (limited)	0.70	Very limited deep to water (very limited) infrequent flooding (limited) too sandy (moderately limited)	1.00 0.80 0.50	Limited droughty (limited)	0.70	Very limited deep to water (very limited) too sandy (moderately limited)	1.00 0.50	Very limited seepage (very limited) too sandy (moderately limited)	1.00 0.50
82006: Bosket-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited) slope (slightly limited)	0.45 0.08
82007: Bosket-----	Not limited		Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
82009: Forestdale-----	Very limited wetness (very limited)	1.00	Limited infrequent flooding (limited)	0.80	Not limited		Not limited		Not limited	
82010: Amagon-----	Very limited wetness (very limited)	1.00	Limited infrequent flooding (limited)	0.80	Not limited		Not limited		Not limited	
82011: Crowley-----	Very limited wetness (very limited)	1.00	Limited infrequent flooding (limited) deep to water (slightly limited)	0.80 0.02	Not limited		Slightly limited deep to water (slightly limited)	0.02	Not limited	

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86000: Dubbs-----	Not limited		Very limited deep to water (very limited) infrequent flooding (moderately limited)	1.00 0.50	Not limited		Very limited deep to water (very limited)	1.00	Moderately limited seepage (moderately limited)	0.45
86001: Calhoun-----	Very limited wetness (very limited)	1.00	Moderately limited infrequent flooding (moderately limited) deep to water (slightly limited)	0.50 0.02	Not limited		Slightly limited deep to water (slightly limited)	0.02	Slightly limited seepage (slightly limited)	0.09
86002: Falaya-----	Very limited wetness (very limited)	1.00	Moderately limited infrequent flooding (moderately limited)	0.50	Not limited		Not limited		Moderately limited seepage (moderately limited)	0.45
86003: Amagon-----	Limited wetness (limited)	0.99	Moderately limited infrequent flooding (moderately limited) deep to water (slightly limited)	0.50 0.30	Not limited		Slightly limited deep to water (slightly limited)	0.30	Not limited	
86004: Forestdale----	Very limited wetness (very limited)	1.00	Moderately limited infrequent flooding (moderately limited)	0.50	Not limited		Not limited		Not limited	
90000: Memphis-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Limited slope (limited) seepage (moderately limited)	0.91 0.45
90001: Memphis-----	Not limited		Very limited deep to water (very limited) infrequent flooding (limited)	1.00 0.80	Not limited		Very limited deep to water (very limited)	1.00	Very limited slope (very limited) seepage (moderately limited)	1.00 0.45

Table 11b.--Wildlife Habitat--Continued

Map symbol and soil name	Upland mixed deciduous-conifer trees		Riparian herbaceous plants		Riparian shrubs, vines, and trees		Freshwater wetland plants		Irrigated freshwater wetland plants	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
99001: Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99003: Miscellaneous water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99007: Dam-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99015: Udorthents----	Not rated		Not rated		Not rated		Not rated		Not rated	
Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 12.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential 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		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Moderately limited shrink-swell (moderately limited) wetness (moderately limited)	0.45   0.37	Limited wetness (limited) shrink-swell (moderately limited)	0.99   0.39	Limited slope (limited) shrink-swell (moderately limited)	0.68   0.45	Very limited low strength (very limited) shrink-swell (moderately limited)	1.00   0.45	Not limited	
60046: Minnith-----	Very limited slope (very limited) shrink-swell (moderately limited) wetness (slightly limited)	1.00   0.45  0.30	Very limited slope (very limited) wetness (limited) shrink-swell (slightly limited)	1.00   0.95  0.04	Very limited slope (very limited) shrink-swell (moderately limited)	1.00   0.45	Very limited slope (very limited) low strength (very limited) shrink-swell (moderately limited)	1.00   1.00  0.45	Very limited slope (very limited)	1.00
60053: Winfield-----	Limited wetness (limited)	0.85	Very limited wetness (very limited)	1.00	Moderately limited wetness (moderately limited) slope (moderately limited)	0.49   0.45	Moderately limited wetness (moderately limited)	0.49	Moderately limited wetness (moderately limited)	0.49
60054: Minnith-----	Limited slope (limited) shrink-swell (moderately limited) wetness (slightly limited)	0.76   0.45  0.30	Limited wetness (limited) slope (limited) shrink-swell (slightly limited)	0.95   0.76  0.04	Very limited slope (very limited) shrink-swell (moderately limited)	1.00   0.45	Very limited low strength (very limited) slope (limited) shrink-swell (moderately limited)	1.00   0.63  0.45	Limited slope (limited)	0.63
60055: Winfield-----	Moderately limited shrink-swell (moderately limited) wetness (moderately limited)	0.45   0.37	Limited wetness (limited) shrink-swell (moderately limited)	0.99   0.45	Moderately limited shrink-swell (moderately limited)	0.45	Very limited low strength (very limited) shrink-swell (moderately limited)	1.00   0.45	Not limited	

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66000:										
Moniteau-----	Very limited wetness (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	flooding (very limited)	1.00	wetness (very limited)	1.00	wetness (very limited)	1.00	flooding (very limited)	1.00	flooding (moderately limited)	0.60
							low strength (very limited)	1.00		
66054:										
Wakeland-----	Very limited wetness (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00
	flooding (very limited)	1.00	wetness (very limited)	1.00	wetness (limited)	0.81	wetness (limited)	0.81	wetness (limited)	0.81
66055:										
Haymond-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60
73055:										
Alred-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
			shrink-swell (slightly limited)	0.10					small stones (very limited)	1.00
Rueter-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
									small stones (very limited)	1.00
									large stones (moderately limited)	0.60
73100:										
Wrengart-----	Moderately limited shrink-swell (moderately limited)	0.45	Limited wetness (limited)	0.99	Moderately limited shrink-swell (moderately limited)	0.45	Very limited low strength (very limited)	1.00	Not limited	
	wetness (moderately limited)	0.37	shrink-swell (slightly limited)	0.05	slope (slightly limited)	0.15	shrink-swell (moderately limited)	0.45		

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73101:										
Wrengart-----	Moderately limited shrink-swell (moderately limited)	0.45	Limited wetness (limited)	0.99	Limited slope (limited)	0.83	Very limited low strength (very limited)	1.00	Not limited	
	wetness (moderately limited)	0.37	slope (slightly limited)	0.15	shrink-swell (moderately limited)	0.45	shrink-swell (moderately limited)	0.45		
	slope (slightly limited)	0.15	shrink-swell (slightly limited)	0.05						
73139:										
Poynor-----	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Very limited slope (very limited)	1.00	Very limited low strength (very limited)	1.00	Limited small stones (limited)	0.69
	shrink-swell (moderately limited)	0.45	shrink-swell (slightly limited)	0.21	shrink-swell (moderately limited)	0.45	slope (limited)	0.63	slope (limited)	0.63
							shrink-swell (moderately limited)	0.45	large stones (slightly limited)	0.07
Clarksville---	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Very limited slope (very limited)	1.00	Limited slope (limited)	0.63	Limited slope (limited)	0.63
									small stones (moderately limited)	0.31
									too acid (slightly limited)	0.30
Scholten-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited slope (very limited)	1.00	Limited wetness (limited)	0.78	Limited wetness (limited)	0.78
	slope (limited)	0.76	slope (limited)	0.76	wetness (limited)	0.78	slope (limited)	0.63	too acid (limited)	0.76
									slope (limited)	0.63
73140:										
Clarksville---	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
									small stones (limited)	0.82
									too acid (limited)	0.68

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73140: Scholten-----	Very limited slope (very limited) wetness (moderately limited)	1.00 0.39	Very limited slope (very limited) wetness (limited)	1.00 0.99	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited) small stones (very limited) too acid (moderately limited)	1.00 1.00 0.42
73141: Firebaugh-----	Limited wetness (limited)	0.71	Very limited wetness (very limited) shrink-swell (slightly limited)	1.00 0.01	Limited slope (limited) wetness (moderately limited)	0.68 0.39	Moderately limited wetness (moderately limited)	0.39	Moderately limited too acid (moderately limited) wetness (moderately limited)	0.42 0.39
73145: Crider-----	Not limited		Slightly limited shrink-swell (slightly limited)	0.07	Moderately limited slope (moderately limited)	0.45	Very limited low strength (very limited)	1.00	Not limited	
73146: Marquand-----	Moderately limited wetness (moderately limited)	0.52	Very limited wetness (very limited)	1.00	Limited slope (limited) wetness (slightly limited)	0.68 0.15	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.15	Slightly limited wetness (slightly limited)	0.15
73150: Caneyville-----	Limited slope (limited) depth to bedrock (moderately limited) shrink-swell (moderately limited)	0.76 0.45 0.45	Very limited hard bedrock <40" (very limited) slope (limited) shrink-swell (moderately limited)	1.00 0.76 0.45	Very limited slope (very limited) depth to bedrock (moderately limited) shrink-swell (moderately limited)	1.00 0.45 0.45	Very limited low strength (very limited) slope (limited) depth to bedrock (moderately limited)	1.00 0.63 0.45	Limited slope (limited) depth to bedrock (slightly limited)	0.63 0.30
Bucklick-----	Very limited shrink-swell (very limited) slope (limited)	1.00 0.76	Very limited shrink-swell (very limited) slope (limited) depth to bedrock (limited)	1.00 0.75	Very limited slope (very limited) shrink-swell (very limited)	1.00 1.00	Very limited shrink-swell (very limited) low strength (very limited) slope (limited)	1.00 1.00 0.63	Limited slope (limited)	0.63

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151:										
Caneyville-----	Very limited slope (very limited) shrink-swell (moderately limited) depth to bedrock (moderately limited)	1.00 0.45 0.43	Very limited hard bedrock <40" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited slope (very limited) shrink-swell (moderately limited) depth to bedrock (moderately limited)	1.00 0.45 0.43	Very limited low strength (very limited) slope (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited slope (very limited) depth to bedrock (slightly limited)	1.00 0.28
Gasconade-----	Very limited hard bedrock <20" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited hard bedrock <40" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited hard bedrock <20" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited hard bedrock <20" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited slope (very limited) shallow to bedrock (very limited) too clayey (very limited)	1.00 1.00 1.00
Bucklick-----	Very limited slope (very limited) shrink-swell (moderately limited)	1.00 0.45	Very limited slope (very limited) shrink-swell (limited) depth to bedrock (limited)	1.00 0.92 0.72	Very limited slope (very limited) shrink-swell (moderately limited)	1.00 0.45	Very limited slope (very limited) low strength (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited slope (very limited)	1.00
73156:										
Alred-----	Limited slope (limited)	0.76	Limited slope (limited) shrink-swell (slightly limited)	0.76 0.09	Very limited slope (very limited)	1.00	Limited slope (limited)	0.63	Limited slope (limited) too acid (slightly limited)	0.63 0.12
Gepp-----	Limited slope (limited) shrink-swell (moderately limited)	0.76 0.45	Limited slope (limited) shrink-swell (moderately limited)	0.76 0.45	Very limited slope (very limited) shrink-swell (moderately limited)	1.00 0.45	Very limited low strength (very limited) slope (limited) shrink-swell (moderately limited)	1.00 0.63 0.45	Very limited small stones (very limited) slope (limited) too acid (limited)	1.00 0.63 0.61

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73157: Captina-----	Moderately limited wetness (moderately limited)	0.51	Very limited wetness (very limited) shrink-swell (slightly limited)	1.00 0.08	Limited slope (limited) wetness (slightly limited)	0.68 0.13	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.13	Slightly limited wetness (slightly limited)	0.13
73223: Coulstone-----	Very limited slope (very limited) large stones (very limited)	1.00 1.00	Very limited slope (very limited) large stones (very limited)	1.00 1.00	Very limited slope (very limited) large stones (very limited)	1.00 1.00	Very limited slope (very limited) large stones (very limited)	1.00 1.00	Very limited slope (very limited) droughty (very limited) large stones >30% (very limited)	1.00 1.00 1.00
Bender-----	Very limited slope (very limited) large stones (very limited) depth to bedrock (moderately limited)	1.00 1.00 0.42	Very limited hard bedrock <40" (very limited) slope (very limited) large stones (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large stones (very limited) depth to bedrock (moderately limited)	1.00 1.00 0.42	Very limited slope (very limited) large stones (very limited) depth to bedrock (moderately limited)	1.00 1.00 0.42	Not rated	
73264: Alred-----	Very limited slope (very limited) shrink-swell (limited)	1.00 0.95	Very limited slope (very limited) shrink-swell (limited)	1.00 0.66	Very limited slope (very limited) shrink-swell (limited)	1.00 0.95	Very limited slope (very limited) shrink-swell (limited)	1.00 0.95	Very limited slope (very limited) too acid (limited) large stones (slightly limited)	1.00 0.61 0.07
Wrengart-----	Very limited slope (very limited) shrink-swell (moderately limited) wetness (moderately limited)	1.00 0.45 0.45	Very limited slope (very limited) wetness (very limited) shrink-swell (slightly limited)	1.00 1.00 0.05	Very limited slope (very limited) shrink-swell (moderately limited)	1.00 0.45	Very limited slope (very limited) shrink-swell (moderately limited)	1.00 0.45	Very limited slope (very limited) too acid (slightly limited)	1.00 0.24

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73265:										
Captina-----	Limited wetness (limited)	0.63	Very limited wetness (very limited)	1.00	Limited slope (limited) wetness (moderately limited)	0.68 0.32	Moderately limited wetness (moderately limited)	0.32	Limited small stones (limited) large stones (moderately limited) too acid (moderately limited)	0.93 0.60 0.36
Scholten-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited) slope (limited)	0.83 0.68	Limited wetness (limited)	0.83	Limited wetness (limited) small stones (moderately limited) too acid (moderately limited)	0.83 0.57 0.36
73266:										
Hildebrecht----	Limited slope (limited) shrink-swell (moderately limited) wetness (slightly limited)	0.76 0.45 0.30	Limited wetness (limited) slope (limited) shrink-swell (slightly limited)	0.95 0.76 0.05	Very limited slope (very limited) shrink-swell (moderately limited)	1.00 0.45	Very limited low strength (very limited) slope (limited) shrink-swell (moderately limited)	1.00 0.63 0.45	Limited slope (limited)	0.63
73267:										
Yelton-----	Limited wetness (limited) slope (limited)	0.93 0.76	Very limited wetness (very limited) slope (limited)	1.00 0.76	Very limited slope (very limited) wetness (moderately limited)	1.00 0.56	Limited low strength (limited) slope (limited) wetness (moderately limited)	0.78 0.63 0.56	Limited slope (limited) wetness (moderately limited) too acid (slightly limited)	0.63 0.56 0.30
Scholten-----	Very limited wetness (very limited) slope (limited)	1.00 0.76	Very limited wetness (very limited) slope (limited)	1.00 0.76	Very limited slope (very limited) wetness (limited)	1.00 0.83	Limited wetness (limited) slope (limited)	0.83 0.63	Limited wetness (limited) too acid (limited) slope (limited)	0.83 0.76 0.63

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73269:										
Brussels-----	Very limited slope (very limited) shrink-swell (moderately limited)	1.00  0.45	Very limited slope (very limited) shrink-swell (moderately limited)	1.00  0.45	Very limited slope (very limited) shrink-swell (moderately limited)	1.00  0.45	Very limited slope (very limited) shrink-swell (moderately limited)	1.00  0.45	Very limited slope (very limited) small stones (moderately limited) droughty (slightly limited)	1.00  0.57  0.08
Gasconade-----	Very limited hard bedrock <20" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00  1.00  0.45	Very limited hard bedrock <40" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00  1.00  0.45	Very limited hard bedrock <20" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00  1.00  0.45	Very limited hard bedrock <20" (very limited) slope (very limited) shrink-swell (moderately limited)	1.00  1.00  0.45	Very limited slope (very limited) shallow to bedrock (very limited) too clayey (very limited)	1.00  1.00  1.00
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
73270:										
Wrengart-----	Limited slope (limited) shrink-swell (moderately limited) wetness (moderately limited)	0.76  0.45  0.37	Limited wetness (limited) slope (limited) shrink-swell (slightly limited)	0.99  0.76  0.12	Very limited slope (very limited) shrink-swell (moderately limited)	1.00  0.45	Limited slope (limited) shrink-swell (moderately limited)	0.63  0.45	Limited slope (limited)	0.63
73343:										
Captina-----	Limited wetness (limited) shrink-swell (moderately limited)	0.63  0.45	Very limited wetness (very limited) shrink-swell (slightly limited)	1.00  0.14	Limited slope (limited) shrink-swell (moderately limited) wetness (moderately limited)	0.68  0.45  0.32	Very limited low strength (very limited) shrink-swell (moderately limited) wetness (moderately limited)	1.00  0.45  0.32	Moderately limited wetness (moderately limited)	0.32
73344:										
Captina-----	Limited slope (limited) wetness (limited)	0.76  0.63	Very limited wetness (very limited) slope (limited)	1.00  0.76	Very limited slope (very limited) wetness (moderately limited)	1.00  0.32	Limited slope (limited) wetness (moderately limited)	0.63  0.32	Limited slope (limited) too acid (limited) wetness (moderately limited)	0.63  0.61  0.32

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73345:										
Hildebrecht----	Moderately limited wetness (moderately limited) slope (slightly limited)	0.51 0.15	Very limited wetness (very limited) slope (slightly limited)	1.00 0.15	Limited slope (limited) wetness (slightly limited)	0.83 0.13	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.13	Slightly limited wetness (slightly limited) too acid (slightly limited)	0.13 0.12
73346:										
Hildebrecht----	Moderately limited wetness (moderately limited) slope (slightly limited)	0.51 0.15	Very limited wetness (very limited) slope (slightly limited)	1.00 0.15	Limited slope (limited) wetness (slightly limited)	0.83 0.13	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.13	Moderately limited too acid (moderately limited) wetness (slightly limited)	0.36 0.13
74644:										
Deible-----	Very limited wetness (very limited) shrink-swell (very limited)	1.00 1.00	Very limited wetness (very limited) shrink-swell (limited)	1.00 0.83	Very limited wetness (very limited) shrink-swell (very limited)	1.00 1.00	Very limited low strength (very limited) wetness (very limited) shrink-swell (very limited)	1.00 1.00	Very limited wetness (very limited)	1.00
74646:										
Cornwall-----	Moderately limited wetness (moderately limited)	0.51	Very limited wetness (very limited)	1.00	Limited slope (limited) wetness (slightly limited)	0.68 0.13	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.13	Slightly limited wetness (slightly limited)	0.13
74648:										
Aslinger-----	Moderately limited wetness (moderately limited)	0.59	Very limited wetness (very limited)	1.00	Limited slope (limited) wetness (slightly limited)	0.68 0.28	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.28	Slightly limited wetness (slightly limited) droughty (slightly limited)	0.28 0.01
74649:										
Aslinger-----	Moderately limited wetness (moderately limited) slope (moderately limited)	0.59 0.45	Very limited wetness (very limited) slope (moderately limited)	1.00 0.45	Very limited slope (very limited) wetness (slightly limited)	1.00 0.28	Slightly limited wetness (slightly limited) slope (slightly limited)	0.28 0.04	Limited too acid (limited) wetness (slightly limited) droughty (slightly limited)	0.61 0.28 0.06

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74649: Waben-----	Slightly limited large stones (slightly limited)	0.01	Slightly limited large stones (slightly limited)	0.01	Moderately limited slope (moderately limited) large stones (slightly limited)	0.45 0.01	Slightly limited large stones (slightly limited)	0.01	Slightly limited large stones (slightly limited) droughty (slightly limited)	0.19 0.01
74679: Higdon-----	Very limited flooding (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.99 0.45	Very limited flooding (very limited) wetness (very limited) shrink-swell (moderately limited)	1.00 1.00 0.39	Very limited flooding (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.61 0.45	Limited flooding (rare) (limited) wetness (limited) shrink-swell (moderately limited)	0.90 0.61 0.45	Limited wetness (limited)	0.61
74680: Moniteau-----	Very limited wetness (very limited) flooding (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited flooding (very limited) wetness (very limited) shrink-swell (slightly limited)	1.00 1.00 0.23	Very limited flooding (very limited) wetness (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited low strength (very limited) wetness (very limited) flooding (rare) (limited)	1.00 1.00 0.90	Very limited wetness (very limited) too acid (slightly limited)	1.00 0.12
74685: Auxvasse-----	Very limited shrink-swell (very limited) wetness (limited)	1.00 0.99	Very limited wetness (very limited) shrink-swell (very limited)	1.00 1.00	Very limited shrink-swell (very limited) wetness (limited) slope (slightly limited)	1.00 0.61 0.15	Very limited low strength (very limited) shrink-swell (very limited) wetness (limited)	1.00 1.00 0.61	Limited wetness (limited)	0.61
75379: Kaintuck-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00
75381: Bearthicket----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited low strength (very limited) flooding (rare) (limited)	1.00 0.90	Not limited	

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75395: Jamesfin-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) wetness (slightly limited)	1.00 0.16	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) low strength (slightly limited)	1.00 0.22	Moderately limited flooding (moderately limited)	0.60
75408: Secesh-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Limited flooding (rare) (limited)	0.90	Not limited	
75409: Relfe-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Limited droughty (limited) flooding (moderately limited)	0.84 0.60
75411: Tilk-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Limited flooding (rare) (limited)	0.90	Very limited small stones (very limited) large stones (moderately limited) too acid (slightly limited)	1.00 0.31 0.18
75416: Gladden-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60
75417: Relfe-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) droughty (very limited) small stones (very limited)	1.00 1.00 1.00
Sandbur-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75426: Gabriel-----	Very limited flooding (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.99 0.45	Very limited flooding (very limited) wetness (very limited) shrink-swell (moderately limited)	1.00 1.00 0.37	Very limited flooding (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.61 0.45	Very limited low strength (very limited) flooding (rare) (limited) wetness (limited)	1.00 0.90 0.61	Limited wetness (limited)	0.61
75428: Tilk-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited) small stones (moderately limited) droughty (moderately limited)	0.60 0.58 0.55
Cornwall-----	Very limited wetness (very limited) slope (moderately limited)	1.00 0.45	Very limited wetness (very limited) slope (moderately limited)	1.00 0.45	Very limited slope (very limited) wetness (limited)	1.00 0.68	Limited wetness (limited) slope (slightly limited)	0.68 0.04	Limited wetness (limited) too acid (slightly limited) slope (slightly limited)	0.68 0.24 0.04
Poynor-----	Limited slope (limited)	0.76	Limited slope (limited) shrink-swell (slightly limited)	0.76 0.17	Very limited slope (very limited)	1.00	Limited slope (limited)	0.63	Limited slope (limited) too acid (moderately limited) droughty (moderately limited)	0.63 0.48 0.44
75429: Tilk-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited small stones (very limited) flooding (moderately limited) large stones (slightly limited)	1.00 0.60 0.01

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75429: Secesh-----	Very limited flooding (very limited) large stones (slightly limited)	1.00  0.12	Very limited flooding (very limited) large stones (slightly limited)	1.00  0.12	Very limited flooding (very limited) large stones (slightly limited)	1.00  0.12	Limited flooding (rare) (limited) large stones (slightly limited)	0.90  0.12	Limited large stones (limited) small stones (moderately limited)	0.99  0.37
75430: Wideman-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60
75451: Gladden-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60
75467: Wilbur-----	Very limited flooding (very limited) wetness (limited)	1.00  0.77	Very limited flooding (very limited) wetness (very limited)	1.00  1.00	Very limited flooding (very limited) wetness (moderately limited)	1.00  0.43	Very limited flooding (very limited) wetness (moderately limited) low strength (slightly limited)	1.00  0.43 0.22	Very limited flooding (very limited) wetness (moderately limited)	1.00  0.43
75468: Elsah-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) small stones (moderately limited)	1.00  0.33
77000: Killarney-----	Very limited slope (very limited) wetness (moderately limited) large stones (slightly limited)	1.00  0.45 0.00	Very limited slope (very limited) wetness (very limited) large stones (slightly limited)	1.00  1.00 0.00	Very limited slope (very limited) large stones (slightly limited)	1.00  0.00	Very limited slope (very limited) large stones (slightly limited)	1.00  0.00	Very limited slope (very limited) small stones (very limited) large stones (moderately limited)	1.00  1.00 0.60

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77000: Frenchmill-----	Very limited slope (very limited) large stones (slightly limited)	1.00 0.13	Very limited slope (very limited) large stones (slightly limited)	1.00 0.13	Very limited slope (very limited) large stones (slightly limited)	1.00 0.13	Very limited slope (very limited) large stones (slightly limited)	1.00 0.13	Very limited slope (very limited) large stones (limited) small stones (moderately limited)	1.00 0.76 0.46
77002: Delassus-----	Moderately limited wetness (moderately limited)	0.54	Very limited wetness (very limited) depth to bedrock (slightly limited)	1.00 0.27	Limited slope (limited) wetness (slightly limited)	0.68 0.19	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.19	Slightly limited wetness (slightly limited) too acid (slightly limited)	0.19 0.18
77005: Hassler-----	Very limited slope (very limited) wetness (moderately limited) large stones (slightly limited)	1.00 0.55 0.04	Very limited wetness (very limited) slope (very limited) depth to bedrock (limited)	1.00 1.00 0.91	Very limited slope (very limited) wetness (slightly limited) large stones (slightly limited)	1.00 0.21 0.04	Very limited slope (very limited) wetness (slightly limited) large stones (slightly limited)	1.00 0.21 0.04	Very limited slope (very limited) wetness (slightly limited)	1.00 0.21
Syenite-----	Very limited slope (very limited) depth to bedrock (moderately limited)	1.00 0.47	Very limited hard bedrock <40" (very limited) slope (very limited)	1.00 1.00	Very limited slope (very limited) depth to bedrock (moderately limited)	1.00 0.47	Very limited slope (very limited) depth to bedrock (moderately limited)	1.00 0.47	Very limited slope (very limited) too acid (moderately limited) depth to bedrock (moderately limited)	1.00 0.48 0.35
77008: Hassler-----	Moderately limited wetness (moderately limited) slope (moderately limited)	0.55 0.31	Very limited wetness (very limited) depth to bedrock (limited) slope (moderately limited)	1.00 0.69 0.31	Limited slope (limited) wetness (slightly limited)	0.99 0.21	Limited low strength (limited) wetness (slightly limited)	0.78 0.21	Slightly limited too acid (slightly limited) wetness (slightly limited)	0.24 0.21

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
80000: Calhoun-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) shrink-swell (slightly limited)	1.00 0.20	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99
80001: Oaklimeter----	Moderately limited wetness (moderately limited)	0.59	Very limited wetness (very limited)	1.00	Slightly limited wetness (slightly limited)	0.28	Slightly limited wetness (slightly limited)	0.28	Slightly limited wetness (slightly limited)	0.28
82000: Dubbs-----	Moderately limited shrink-swell (moderately limited)	0.45	Moderately limited shrink-swell (moderately limited)	0.43	Moderately limited shrink-swell (moderately limited)	0.45	Moderately limited shrink-swell (moderately limited)	0.45	Slightly limited too acid (slightly limited)	0.06
82001: Amagon-----	Very limited wetness (very limited) ponded (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited ponded (very limited) wetness (very limited) shrink-swell (slightly limited)	1.00 1.00 0.17	Very limited ponded (wetness) (very limited) wetness (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited ponded (wetness) (very limited) wetness (very limited) shrink-swell (moderately limited)	1.00 1.00 0.45	Very limited wetness (very limited) ponded (wetness) (very limited) too acid (slightly limited)	1.00 1.00 0.12
82002: Forestdale----	Very limited wetness (very limited) ponded (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Very limited ponded (very limited) wetness (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Very limited ponded (wetness) (very limited) wetness (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Very limited low strength (very limited) ponded (wetness) (very limited) wetness (very limited)	1.00 1.00 1.00	Very limited wetness (very limited) ponded (wetness) (very limited) too clayey (very limited)	1.00 1.00 0.96
82005: Malden-----	Not limited		Not limited		Not limited		Not limited		Limited droughty (limited)	0.70
82006: Bosket-----	Not limited		Not limited		Not limited		Not limited		Moderately limited too acid (moderately limited)	0.36

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82007: Bosket-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60
82009: Forestdale-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited low strength (very limited)	1.00	Very limited wetness (very limited)	1.00
	shrink-swell (very limited)	1.00	shrink-swell (very limited)	1.00	shrink-swell (very limited)	1.00	wetness (very limited)	1.00	too clayey (very limited)	0.96
							shrink-swell (very limited)	1.00		
82010: Amagon-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
			shrink-swell (slightly limited)	0.14						
82011: Crowley-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited shrink-swell (very limited)	1.00	Very limited low strength (very limited)	1.00	Limited wetness (limited)	0.99
	shrink-swell (very limited)	1.00	shrink-swell (moderately limited)	0.37	wetness (limited)	0.99	shrink-swell (very limited)	1.00		
							wetness (limited)	0.99		
86000: Dubbs-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60
	shrink-swell (moderately limited)	0.45	shrink-swell (slightly limited)	0.23	shrink-swell (moderately limited)	0.45	low strength (very limited)	1.00		
							shrink-swell (moderately limited)	0.45		

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86001: Calhoun-----	Very limited wetness (very limited) flooding (very limited)	1.00 1.00	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited flooding (very limited) wetness (limited)	1.00 0.99	Very limited flooding (very limited) wetness (limited) low strength (slightly limited)	1.00 0.99 0.22	Limited wetness (limited) flooding (moderately limited) too acid (slightly limited)	0.99 0.60 0.12
86002: Falaya-----	Very limited wetness (very limited) flooding (very limited)	1.00 1.00	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited) flooding (very limited)	1.00 1.00	Very limited wetness (very limited) flooding (moderately limited)	1.00 0.60
86003: Amagon-----	Very limited flooding (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.99 0.45	Very limited flooding (very limited) wetness (very limited) shrink-swell (moderately limited)	1.00 1.00 0.36	Very limited flooding (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.61 0.45	Very limited flooding (very limited) low strength (very limited) wetness (limited)	1.00 1.00 0.61	Limited wetness (limited) flooding (moderately limited)	0.61 0.60
86004: Forestdale----	Very limited wetness (very limited) flooding (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Very limited flooding (very limited) wetness (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Very limited flooding (very limited) wetness (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Very limited low strength (very limited) wetness (very limited) flooding (very limited)	1.00 1.00 1.00	Very limited wetness (very limited) too acid (limited) too clayey (moderately limited)	1.00 0.61 0.60
90000: Memphis-----	Not limited		Not limited		Limited slope (limited)	0.68	Very limited low strength (very limited)	1.00	Not limited	
90001: Memphis-----	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Very limited slope (very limited)	1.00	Very limited low strength (very limited) slope (limited)	1.00 0.63	Limited slope (limited) too acid (slightly limited)	0.63 0.12

Table 12.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings		Local roads and streets		Lawns and landscaping	
	Rating class and limiting features	Value								
99001: Water-----	Not rated									
99003: Miscellaneous water-----	Not rated									
99007: Dam-----	Not rated									
99015: Udorthents----	Not rated									
Water-----	Not rated									

Table 13.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Very limited wetness (very limited) percs slowly (limited)	1.00  0.71	Very limited wetness (very limited) slope (limited) seepage (moderately limited)	1.00  0.91 0.50	Limited wetness (limited) too acid (slightly limited) too clayey (slightly limited)	0.69  0.24 0.16	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited) too acid (slightly limited) too clayey (slightly limited)	0.35  0.24 0.04
60046: Minnith-----	Very limited slope (very limited) wetness (limited) percs slowly (slightly limited)	1.00  0.99 0.30	Very limited slope (very limited) seepage (very limited) wetness (limited)	1.00  1.00 0.69	Very limited slope (very limited) seepage (limited) wetness (moderately limited)	1.00  0.74 0.60	Very limited slope (very limited) seepage (limited) wetness (slightly limited)	1.00  0.70 0.30	Very limited slope (very limited) seepage (moderately limited) wetness (moderately limited)	1.00  0.31 0.31
60053: Winfield-----	Very limited wetness (very limited) percs slowly (slightly limited)	1.00  0.25	Very limited wetness (very limited) slope (limited) seepage (moderately limited)	1.00  0.66 0.50	Very limited wetness (very limited) too clayey (moderately limited) too acid (slightly limited)	1.00  0.41 0.24	Limited wetness (limited)	0.93	Moderately limited wetness (moderately limited) too acid (slightly limited) too clayey (slightly limited)	0.57  0.24 0.20
60054: Minnith-----	Limited wetness (limited) slope (limited) percs slowly (slightly limited)	0.99  0.63 0.30	Very limited slope (very limited) wetness (very limited) seepage (moderately limited)	1.00  1.00 0.32	Limited slope (limited) wetness (moderately limited) too acid (slightly limited)	0.63  0.60 0.24	Limited slope (limited) wetness (slightly limited)	0.63  0.30	Limited slope (limited) wetness (moderately limited) too acid (slightly limited)	0.63  0.31 0.24

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60055:										
Winfield-----	Very limited wetness (very limited) percs slowly (slightly limited)	1.00 0.25	Very limited wetness (very limited) seepage (moderately limited) slope (slightly limited)	1.00 0.50 0.17	Limited wetness (limited) too clayey (slightly limited)	0.69 0.15	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited) too clayey (slightly limited)	0.35 0.03
66000:										
Moniteau-----	Very limited wetness (very limited) flooding (very limited) percs slowly (limited)	1.00 1.00 0.71	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited) flooding (very limited) too acid (slightly limited)	1.00 1.00 0.24	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited) too acid (slightly limited)	1.00 0.24
66054:										
Wakeland-----	Very limited wetness (very limited) flooding (very limited) percs slowly (slightly limited)	1.00 1.00 0.25	Very limited flooding (very limited) wetness (very limited) seepage (moderately limited)	1.00 1.00 0.50	Very limited wetness (very limited) flooding (very limited)	1.00 1.00	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Limited wetness (limited)	0.81
66055:										
Haymond-----	Very limited flooding (very limited) percs slowly (slightly limited)	1.00 0.25	Very limited flooding (very limited) seepage (moderately limited)	1.00 0.50	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Not limited	
73055:										
Alred-----	Very limited slope (very limited) percs slowly (limited)	1.00 0.93	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Very limited slope (very limited) too clayey (very limited) too acid (slightly limited)	1.00 1.00 0.18	Very limited slope (very limited)	1.00	Very limited slope (very limited) too clayey (very limited) hard to pack (limited)	1.00 1.00 0.70

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73055: Rueter-----	Very limited slope (very limited) percs slowly (slightly limited)	1.00  0.25	Very limited slope (very limited) seepage (very limited)	1.00  1.00	Very limited slope (very limited) too clayey (very limited) too acid (slightly limited)	1.00  1.00  0.18	Very limited slope (very limited) seepage (limited)	1.00  0.75	Very limited slope (very limited) too clayey (very limited) small stones (limited)	1.00  1.00  0.99
73100: Wrengart-----	Very limited wetness (very limited) percs slowly (limited)	1.00  0.71	Very limited wetness (very limited) seepage (moderately limited) slope (moderately limited)	1.00  0.50  0.31	Limited too clayey (limited) wetness (limited) too acid (moderately limited)	0.80  0.69  0.42	Moderately limited wetness (moderately limited)	0.44	Moderately limited too clayey (moderately limited) too acid (moderately limited) wetness (moderately limited)	0.60  0.42  0.35
73101: Wrengart-----	Very limited wetness (very limited) percs slowly (limited)	1.00  0.71	Very limited wetness (very limited) slope (very limited) seepage (moderately limited)	1.00  1.00  0.50	Limited too clayey (limited) wetness (limited) too acid (moderately limited)	0.80  0.69  0.42	Moderately limited wetness (moderately limited)	0.44	Moderately limited too clayey (moderately limited) too acid (moderately limited) wetness (moderately limited)	0.60  0.42  0.35
73139: Poynor-----	Limited slope (limited) percs slowly (slightly limited)	0.63  0.25	Very limited slope (very limited) seepage (very limited)	1.00  1.00	Very limited too clayey (very limited) slope (limited) too acid (moderately limited)	1.00  0.63  0.36	Limited seepage (limited) slope (limited)	0.75  0.63	Very limited too clayey (very limited) hard to pack (limited) slope (limited)	1.00  0.70  0.63
Clarksville----	Limited slope (limited) percs slowly (slightly limited)	0.63  0.25	Very limited slope (very limited) seepage (moderately limited)	1.00  0.50	Limited too clayey (limited) slope (limited)	0.74  0.63	Limited slope (limited)	0.63	Limited slope (limited) small stones (moderately limited) too clayey (moderately limited)	0.63  0.59  0.51

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73139:										
Scholten-----	Very limited wetness (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited too clayey (limited)	0.78
	percs slowly (very limited)	1.00	seepage (very limited)	1.00	too clayey (limited)	0.89	slope (limited)	0.63	wetness (limited)	0.78
	slope (limited)	0.63	wetness (moderately limited)	0.50	seepage (limited)	0.79			hard to pack (limited)	0.70
73140:										
Clarksville----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	percs slowly (slightly limited)	0.25	seepage (very limited)	1.00	too clayey (limited)	0.84	seepage (limited)	0.75	small stones >35% (very limited)	1.00
					too acid (slightly limited)	0.24			too clayey (limited)	0.68
Scholten-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	wetness (very limited)	1.00	wetness (very limited)	1.00	seepage (limited)	0.79	wetness (moderately limited)	0.48	small stones >35% (very limited)	1.00
	percs slowly (very limited)	1.00	seepage (very limited)	1.00	wetness (limited)	0.72			wetness (moderately limited)	0.36
73141:										
Firebaugh-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.86	Limited small stones (limited)	0.73
	percs slowly (limited)	0.93	slope (limited)	0.91	too clayey (limited)	0.82			too clayey (limited)	0.64
			seepage (moderately limited)	0.50	too acid (moderately limited)	0.48			wetness (moderately limited)	0.53
73145:										
Crider-----	Slightly limited percs slowly (slightly limited)	0.25	Limited slope (limited)	0.66	Slightly limited too clayey (slightly limited)	0.27	Not limited		Slightly limited too clayey (slightly limited)	0.13
			seepage (moderately limited)	0.50	too acid (slightly limited)	0.12			too acid (slightly limited)	0.12

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73146:										
Marquand-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.90	Limited wetness (limited)	0.70	Moderately limited wetness (moderately limited)	0.45
	percs slowly (limited)	0.71	slope (limited)	0.91	too acid (moderately limited)	0.42			too acid (moderately limited)	0.42
					too clayey (moderately limited)	0.37			too clayey (slightly limited)	0.18
73150:										
Caneyville-----	Very limited depth to bedrock (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00
	percs slowly (limited)	0.71	depth to bedrock (very limited)	1.00	too clayey (very limited)	1.00	slope (limited)	0.63	too clayey (very limited)	1.00
	slope (limited)	0.63			slope (limited)	0.63			hard to pack (limited)	0.70
Bucklick-----	Limited depth to bedrock (limited)	0.75	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Limited slope (limited)	0.63	Limited too clayey (limited)	0.91
	slope (limited)	0.63	depth to bedrock (limited)	0.75	too clayey (limited)	0.96	depth to bedrock (moderately limited)	0.57	hard to pack (limited)	0.70
	percs slowly (slightly limited)	0.25	seepage (moderately limited)	0.50	slope (limited)	0.63			slope (limited)	0.63
73151:										
Caneyville-----	Very limited depth to bedrock (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00
	slope (very limited)	1.00	depth to bedrock (very limited)	1.00	depth to bedrock (very limited)	1.00	slope (very limited)	1.00	slope (very limited)	1.00
	percs slowly (limited)	0.71			too clayey (limited)	0.87			too clayey (limited)	0.73
Gasconade-----	Very limited depth to bedrock (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00
	slope (very limited)	1.00	depth to bedrock (very limited)	1.00	depth to bedrock (very limited)	1.00	slope (very limited)	1.00	slope (very limited)	1.00
	large stones (moderately limited)	0.44	large stones (limited)	0.68	too clayey (moderately limited)	0.44			large stones (slightly limited)	0.15

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151:										
Bucklick-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	depth to bedrock (limited)	0.72	depth to bedrock (limited)	0.72	depth to bedrock (very limited)	1.00	depth to bedrock (moderately limited)	0.54	too clayey (limited)	0.80
	percs slowly (slightly limited)	0.25	seepage (moderately limited)	0.50	too clayey (limited)	0.90			depth to bedrock (moderately limited)	0.54
73156:										
Alred-----	Limited percs slowly (limited)	0.93	Very limited slope (very limited)	1.00	Very limited too clayey (very limited)	1.00	Limited slope (limited)	0.63	Very limited too clayey (very limited)	1.00
	slope (limited)	0.63	seepage (moderately limited)	0.50	slope (limited)	0.63			hard to pack (limited)	0.70
					too acid (slightly limited)	0.18			slope (limited)	0.63
Gepp-----	Limited slope (limited)	0.63	Very limited slope (very limited)	1.00	Very limited too clayey (very limited)	1.00	Limited slope (limited)	0.63	Very limited too clayey (very limited)	1.00
	percs slowly (slightly limited)	0.25	seepage (moderately limited)	0.50	slope (limited)	0.63			hard to pack (limited)	0.70
					too acid (slightly limited)	0.24			slope (limited)	0.63
73157:										
Captina-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited too clayey (limited)	0.93	Limited wetness (limited)	0.69	Limited too clayey (limited)	0.85
	percs slowly (limited)	0.93	slope (limited)	0.91	wetness (limited)	0.89			too acid (moderately limited)	0.54
			seepage (moderately limited)	0.50	too acid (moderately limited)	0.54			wetness (moderately limited)	0.45
73223:										
Coulstone-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	large stones (very limited)	1.00	seepage (very limited)	1.00	large stones (very limited)	1.00	seepage (limited)	0.79	large stones >35% (very limited)	1.00
			large stones (very limited)	1.00	seepage (limited)	0.67			too acid (slightly limited)	0.18

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73223:										
Bender-----	Very limited depth to bedrock (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00
	slope (very limited)	1.00	depth to bedrock (very limited)	1.00	depth to bedrock (very limited)	1.00	slope (very limited)	1.00	slope (very limited)	1.00
	large stones (very limited)	1.00	seepage (very limited)	1.00	seepage (limited)	0.89	seepage (limited)	0.97	large stones >35% (very limited)	1.00
73264:										
Alred-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	percs slowly (limited)	0.94	seepage (moderately limited)	0.50	too clayey (very limited)	1.00	too clayey (very limited)	1.00	too clayey (very limited)	1.00
					too acid (slightly limited)	0.24		hard to pack (limited)	0.70	
Wrengart-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	wetness (very limited)	1.00	wetness (very limited)	1.00	wetness (limited)	0.79	wetness (limited)	0.61	too clayey (moderately limited)	0.54
	percs slowly (limited)	0.71	seepage (moderately limited)	0.50	too clayey (limited)	0.76		wetness (moderately limited)	0.40	
73265:										
Captina-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.82	Moderately limited small stones (moderately limited)	0.54
	percs slowly (limited)	0.93	slope (limited)	0.91	too clayey (limited)	0.61		wetness (moderately limited)	0.51	
			seepage (moderately limited)	0.50	too acid (moderately limited)	0.36		too acid (moderately limited)	0.36	
Scholten-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited small stones >35% (very limited)	1.00
	percs slowly (very limited)	1.00	slope (limited)	0.91	too clayey (limited)	0.97		too clayey (limited)	0.94	
			seepage (moderately limited)	0.50	too acid (moderately limited)	0.42		wetness (limited)	0.83	

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73266:										
Hildebrecht----	Limited wetness (limited)	0.99	Very limited slope (very limited)	1.00	Very limited too clayey (very limited)	1.00	Limited slope (limited)	0.63	Very limited too clayey (very limited)	1.00
	percs slowly (limited)	0.99	wetness (very limited)	1.00	slope (limited)	0.63	wetness (slightly limited)	0.30	slope (limited)	0.63
	slope (limited)	0.63	seepage (moderately limited)	0.50	wetness (moderately limited)	0.60			too acid (moderately limited)	0.42
73267:										
Yelton-----	Very limited wetness (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.96	Limited slope (limited)	0.63
	percs slowly (limited)	0.94	wetness (very limited)	1.00	slope (limited)	0.63	slope (limited)	0.63	wetness (moderately limited)	0.59
	slope (limited)	0.63	seepage (moderately limited)	0.50	too acid (slightly limited)	0.24			too acid (slightly limited)	0.24
Scholten-----	Very limited wetness (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited too clayey (very limited)	1.00
	percs slowly (very limited)	1.00	wetness (very limited)	1.00	too clayey (very limited)	1.00	slope (limited)	0.63	small stones (limited)	0.98
	slope (limited)	0.63	seepage (moderately limited)	0.50	slope (limited)	0.63			wetness (limited)	0.83
73269:										
Brussels-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	percs slowly (limited)	0.71			too clayey (moderately limited)	0.36			small stones (limited)	0.76
									too clayey (slightly limited)	0.18
Gasconade-----	Very limited depth to bedrock (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00
	slope (very limited)	1.00	depth to bedrock (very limited)	1.00	depth to bedrock (very limited)	1.00	slope (very limited)	1.00	slope (very limited)	1.00
	large stones (slightly limited)	0.01			too clayey (limited)	0.86			small stones (slightly limited)	0.01
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73270:										
Wrengart-----	Very limited wetness (very limited)	1.00	Very limited slope (very limited)	1.00	Limited too clayey (limited)	1.00	Limited slope (limited)	0.63	Limited too clayey (limited)	0.99
	percs slowly (limited)	0.71	wetness (very limited)	1.00	wetness (limited)	0.69	wetness (moderately limited)	0.44	slope (limited)	0.63
	slope (limited)	0.63	seepage (moderately limited)	0.50	slope (limited)	0.63			wetness (moderately limited)	0.35
73343:										
Captina-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.82	Limited too clayey (very limited)	1.00
	percs slowly (limited)	0.93	slope (limited)	0.91	too clayey (very limited)	1.00			hard to pack (limited)	0.70
			seepage (moderately limited)	0.50	too acid (moderately limited)	0.36			wetness (moderately limited)	0.51
73344:										
Captina-----	Very limited wetness (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.82	Limited too acid (limited)	0.76
	percs slowly (limited)	0.93	wetness (very limited)	1.00	too acid (limited)	0.76	slope (limited)	0.63	slope (limited)	0.63
	slope (limited)	0.63	seepage (moderately limited)	0.50	slope (limited)	0.63			wetness (moderately limited)	0.51
73345:										
Hildebrecht---	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.89	Limited wetness (limited)	0.69	Moderately limited too acid (moderately limited)	0.54
	percs slowly (limited)	0.93	slope (very limited)	1.00	too clayey (limited)	0.70			too clayey (moderately limited)	0.45
			seepage (moderately limited)	0.50	too acid (moderately limited)	0.54			wetness (moderately limited)	0.45
73346:										
Hildebrecht---	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited too clayey (very limited)	1.00	Limited wetness (limited)	0.69	Very limited too clayey (very limited)	1.00
	percs slowly (limited)	0.93	slope (very limited)	1.00	wetness (limited)	0.89			wetness (moderately limited)	0.45
			seepage (moderately limited)	0.50	too acid (slightly limited)	0.24			too acid (slightly limited)	0.24

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74644: Deible-----	Very limited wetness (very limited) percs slowly (very limited)	1.00 1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) too clayey (moderately limited)	1.00 0.40	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) too clayey (slightly limited)	1.00 0.20
74646: Cornwall-----	Very limited wetness (very limited) percs slowly (limited)	1.00 0.93	Very limited wetness (very limited) slope (limited) seepage (moderately limited)	1.00 0.91 0.50	Limited wetness (limited) too acid (slightly limited) too clayey (slightly limited)	0.89 0.18 0.15	Limited wetness (limited)	0.69	Moderately limited wetness (moderately limited) too acid (slightly limited)	0.45 0.18
74648: Aslinger-----	Very limited wetness (very limited) percs slowly (limited)	1.00 0.71	Very limited wetness (very limited) slope (limited) seepage (moderately limited)	1.00 0.91 0.50	Limited wetness (limited) too clayey (limited) too acid (moderately limited)	0.99 0.68 0.48	Limited wetness (limited)	0.80	Limited small stones (limited) wetness (moderately limited) too acid (moderately limited)	0.64 0.50 0.48
74649: Aslinger-----	Very limited wetness (very limited) percs slowly (limited) slope (slightly limited)	1.00 0.71 0.04	Very limited wetness (very limited) slope (very limited) seepage (moderately limited)	1.00 1.00 0.50	Limited wetness (limited) too clayey (limited) slope (slightly limited)	0.99 0.87 0.04	Limited wetness (limited) slope (slightly limited)	0.80 0.04	Limited too clayey (limited) wetness (moderately limited) slope (slightly limited)	0.73 0.50 0.04
Waben-----	Slightly limited large stones (slightly limited)	0.01	Very limited seepage (very limited) slope (limited) large stones (slightly limited)	1.00 0.66 0.03	Limited seepage (limited) too clayey (slightly limited) too acid (slightly limited)	0.79 0.24 0.12	Limited seepage (limited)	0.75	Limited small stones (limited) seepage (moderately limited) too acid (slightly limited)	0.99 0.50 0.12

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74679: Higdon-----	Very limited wetness (very limited) percs slowly (limited) flooding (rare) (moderately limited)	1.00  0.71 0.60	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) flooding (rare) (moderately limited) too clayey (slightly limited)	1.00 0.60 0.09	Limited wetness (limited) flooding (rare) (moderately limited)	0.99 0.60	Moderately limited wetness (moderately limited)	0.60
74680: Moniteau-----	Very limited wetness (very limited) percs slowly (limited) flooding (rare) (moderately limited)	1.00  0.71 0.60	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) flooding (rare) (moderately limited) too clayey (slightly limited)	1.00 0.60 0.04	Very limited wetness (very limited) flooding (rare) (moderately limited)	1.00 0.60	Very limited wetness (very limited)	1.00
74685: Auxvasse-----	Very limited wetness (very limited) percs slowly (very limited)	1.00  1.00	Very limited wetness (very limited) slope (moderately limited)	1.00 0.31	Very limited wetness (very limited) too acid (limited) too clayey (moderately limited)	1.00 0.99 0.46	Limited wetness (limited)	0.99	Limited too acid (limited) wetness (moderately limited) too clayey (slightly limited)	0.99 0.60 0.23
75379: Kaintuck-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (very limited) too sandy (moderately limited)	1.00 1.00 1.00 0.60	Very limited flooding (very limited) seepage (very limited)	1.00 1.00 1.00	Very limited seepage (very limited) too sandy (moderately limited)	1.00 0.60
75381: Bearthicket---	Moderately limited flooding (rare) (moderately limited) percs slowly (slightly limited)	0.60  0.25	Moderately limited seepage (moderately limited)	0.50	Moderately limited flooding (rare) (moderately limited)	0.60	Moderately limited flooding (rare) (moderately limited)	0.60	Not limited	

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75395: Jamesfin-----	Very limited flooding (very limited) wetness (moderately limited) percs slowly (slightly limited)	1.00  0.31  0.25	Very limited flooding (very limited) seepage (moderately limited)	1.00  0.50	Very limited flooding (very limited) wetness (slightly limited)	1.00  0.15	Very limited flooding (very limited)	1.00	Not limited	
75408: Secesh-----	Moderately limited flooding (rare) (moderately limited) percs slowly (slightly limited)	0.60  0.25	Very limited seepage (very limited)	1.00	Limited seepage (limited) flooding (rare) (moderately limited) too acid (slightly limited)	0.79  0.60  0.06	Limited seepage (limited) flooding (rare) (moderately limited)	0.75  0.60	Limited small stones (limited) seepage (moderately limited) too acid (slightly limited)	0.95  0.50  0.06
75409: Relfe-----	Very limited flooding (very limited) poor filter (very limited)	1.00  1.00	Very limited flooding (very limited) seepage (very limited)	1.00  1.00	Very limited flooding (very limited) too sandy (very limited) seepage (very limited)	1.00  1.00  1.00	Very limited flooding (very limited) seepage (very limited)	1.00  1.00	Very limited seepage (very limited) too sandy (very limited) small stones >35% (very limited)	1.00  1.00  1.00
75411: Tilk-----	Moderately limited flooding (rare) (moderately limited)	0.60	Very limited seepage (very limited)	1.00	Very limited seepage (very limited) flooding (rare) (moderately limited) too acid (moderately limited)	1.00  0.60  0.36	Limited seepage (limited) flooding (rare) (moderately limited)	0.75  0.60	Very limited small stones >35% (very limited) seepage (moderately limited) too acid (moderately limited)	1.00  0.50  0.36
75416: Gladden-----	Very limited flooding (very limited) percs slowly (slightly limited)	1.00  0.25	Very limited flooding (very limited) seepage (very limited)	1.00  1.00	Very limited flooding (very limited) seepage (very limited)	1.00  1.00	Very limited flooding (very limited)	1.00	Not limited	

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75417:										
Relfe-----	Very limited flooding (very limited) poor filter (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (very limited) too sandy (moderately limited)	1.00 1.00 0.60	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited seepage (very limited) small stones >35% (very limited) too sandy (moderately limited)	1.00 1.00 0.60
Sandbur-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) too sandy (very limited) seepage (limited)	1.00 1.00 0.67	Very limited flooding (very limited) seepage (limited)	1.00 0.75	Very limited too sandy (very limited) seepage (moderately limited)	1.00 0.50
75426:										
Gabriel-----	Very limited wetness (very limited) percs slowly (limited) flooding (rare) (moderately limited)	1.00 0.71 0.60	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) flooding (rare) (moderately limited) too acid (slightly limited)	1.00 0.60 0.12	Limited wetness (limited) flooding (rare) (moderately limited)	0.99 0.60	Moderately limited wetness (moderately limited) too acid (slightly limited)	0.60 0.12
75428:										
Tilk-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) seepage (very limited) slope (slightly limited)	1.00 1.00 0.08	Very limited flooding (very limited) seepage (limited) too acid (slightly limited)	1.00 0.79 0.24	Very limited flooding (very limited) seepage (limited)	1.00 0.75	Very limited small stones >35% (very limited) seepage (moderately limited) too acid (slightly limited)	1.00 0.50 0.24
Cornwall-----	Very limited wetness (very limited) percs slowly (limited) slope (slightly limited)	1.00 0.93 0.04	Very limited wetness (very limited) slope (very limited) seepage (moderately limited)	1.00 1.00 0.50	Very limited wetness (very limited) too acid (moderately limited) too clayey (slightly limited)	1.00 0.36 0.20	Very limited wetness (very limited) slope (slightly limited)	1.00 0.04	Limited wetness (limited) too acid (moderately limited) small stones (slightly limited)	0.68 0.36 0.08

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75428: Poynor-----	Limited slope (limited) percs slowly (moderately limited)	0.63 0.45	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Limited too clayey (limited) slope (limited) too acid (slightly limited)	0.70 0.63 0.30	Limited slope (limited)	0.63	Limited hard to pack (limited) slope (limited) too clayey (moderately limited)	0.70 0.63 0.45
75429: Tilk-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (limited)	1.00 0.79	Very limited flooding (very limited) seepage (limited)	1.00 0.75	Very limited small stones >35% (very limited) seepage (moderately limited)	1.00 0.50
Secesh-----	Moderately limited flooding (rare) (moderately limited) percs slowly (slightly limited) large stones (slightly limited)	0.60 0.25 0.12	Very limited seepage (very limited) large stones (slightly limited)	1.00 0.01	Limited seepage (limited) flooding (rare) (moderately limited) large stones (moderately limited)	0.79 0.60 0.42	Limited seepage (limited) flooding (rare) (moderately limited)	0.75 0.60	Moderately limited seepage (moderately limited) small stones (slightly limited) large stones (slightly limited)	0.50 0.17 0.12
75430: Wideman-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) too sandy (very limited) seepage (limited)	1.00 1.00 0.79	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited seepage (very limited) too sandy (very limited)	1.00 1.00
75451: Gladden-----	Very limited flooding (very limited) percs slowly (slightly limited)	1.00 0.25	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited)	1.00	Moderately limited small stones (moderately limited)	0.47

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75467: Wilbur-----	Very limited wetness (very limited) flooding (very limited) percs slowly (slightly limited)	1.00 1.00 0.25	Very limited flooding (very limited) wetness (very limited) seepage (moderately limited)	1.00 1.00 0.50	Very limited wetness (very limited) flooding (very limited)	1.00 1.00	Very limited flooding (very limited) wetness (limited)	1.00 0.89	Moderately limited wetness (moderately limited)	0.55
75468: Elsah-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (limited) large stones (slightly limited)	1.00 0.79 0.01	Very limited flooding (very limited) seepage (limited)	1.00 0.75	Moderately limited seepage (moderately limited) small stones (slightly limited)	0.50 0.14
77000: Killarney-----	Very limited slope (very limited) wetness (very limited) percs slowly (very limited)	1.00 1.00 1.00	Very limited slope (very limited) wetness (very limited) seepage (moderately limited)	1.00 1.00 0.50	Very limited slope (very limited) wetness (limited) too acid (moderately limited)	1.00 0.79 0.48	Very limited slope (very limited) wetness (limited)	1.00 0.61	Very limited slope (very limited) small stones >35% (very limited) too acid (moderately limited)	1.00 1.00 0.48
Frenchmill-----	Very limited slope (very limited) percs slowly (slightly limited) large stones (slightly limited)	1.00 0.25 0.13	Very limited slope (very limited) large stones (limited) seepage (moderately limited)	1.00 0.67 0.50	Very limited slope (very limited) too acid (moderately limited) too clayey (slightly limited)	1.00 0.48 0.04	Very limited slope (very limited)	1.00	Very limited slope (very limited) too acid (moderately limited)	1.00 0.48
77002: Delassus-----	Very limited percs slowly (very limited) wetness (very limited) depth to bedrock (slightly limited)	1.00 1.00 0.27	Very limited wetness (very limited) slope (limited) seepage (moderately limited)	1.00 0.91 0.50	Very limited depth to bedrock (very limited) wetness (limited) too acid (moderately limited)	1.00 0.92 0.54	Limited wetness (limited)	0.73	Moderately limited too acid (moderately limited) wetness (moderately limited) too clayey (slightly limited)	0.54 0.47 0.09

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77005:										
Hassler-----	Very limited wetness (very limited) slope (very limited) depth to bedrock (limited)	1.00 1.00 0.91	Very limited slope (very limited) wetness (very limited) depth to bedrock (limited)	1.00 1.00 0.91	Very limited depth to bedrock (very limited) slope (very limited) wetness (limited)	1.00 1.00 0.94	Very limited slope (very limited) depth to bedrock (limited) wetness (limited)	1.00 0.84 0.74	Very limited slope (very limited) depth to bedrock (limited) wetness (moderately limited)	1.00 0.84 0.47
Syenite-----	Very limited depth to bedrock (very limited) slope (very limited) percs slowly (limited)	1.00 1.00 0.74	Very limited slope (very limited) depth to bedrock (very limited)	1.00 1.00	Very limited depth to bedrock (very limited) slope (very limited) too acid (moderately limited)	1.00 1.00 0.54	Very limited depth to bedrock (very limited) slope (very limited)	1.00 1.00	Very limited depth to bedrock (very limited) slope (very limited) too acid (moderately limited)	1.00 1.00 0.54
77008:										
Hassler-----	Very limited wetness (very limited) percs slowly (limited) depth to bedrock (limited)	1.00 0.74 0.69	Very limited wetness (very limited) slope (very limited) depth to bedrock (limited)	1.00 1.00 0.69	Very limited depth to bedrock (very limited) wetness (limited) too acid (moderately limited)	1.00 0.94 0.54	Limited wetness (limited) depth to bedrock (moderately limited)	0.74 0.52	Moderately limited too acid (moderately limited) depth to bedrock (moderately limited) wetness (moderately limited)	0.54 0.52 0.47
80000:										
Calhoun-----	Very limited wetness (very limited) percs slowly (limited)	1.00 0.94	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Limited wetness (limited)	0.99
80001:										
Oaklimeter-----	Very limited wetness (very limited) percs slowly (slightly limited)	1.00 0.25	Very limited wetness (very limited) seepage (moderately limited)	1.00 0.50	Limited wetness (limited) too acid (limited)	0.99 0.61	Limited wetness (limited)	0.80	Limited too acid (limited) wetness (moderately limited)	0.61 0.50
82000:										
Dubbs-----	Slightly limited percs slowly (slightly limited)	0.25	Very limited seepage (very limited)	1.00	Limited seepage (limited)	0.79	Not limited		Not limited	

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82001: Amagon-----	Very limited ponded (wetness) (very limited) wetness (very limited) percs slowly (limited)	1.00 1.00 0.93	Very limited wetness (very limited) ponded (wetness) (very limited)	1.00 1.00	Very limited ponded (wetness) (very limited) wetness (very limited) too acid (moderately limited)	1.00 1.00 1.00 0.42	Very limited wetness (very limited) ponded (wetness) (very limited)	1.00 1.00	Very limited ponded (wetness) (very limited) wetness (very limited) too acid (moderately limited)	1.00 1.00 1.00 0.42
82002: Forestdale-----	Very limited ponded (wetness) (very limited) wetness (very limited) percs slowly (very limited)	1.00 1.00 1.00	Very limited wetness (very limited) ponded (wetness) (very limited)	1.00 1.00	Very limited ponded (wetness) (very limited) wetness (very limited) too clayey (limited)	1.00 1.00 1.00 0.73	Very limited wetness (very limited) ponded (wetness) (very limited)	1.00 1.00	Very limited ponded (wetness) (very limited) wetness (very limited) hard to pack (limited)	1.00 1.00 1.00 0.70
82005: Malden-----	Very limited poor filter (very limited)	1.00	Very limited seepage (very limited)	1.00	Very limited too sandy (very limited) seepage (very limited)	1.00 1.00	Very limited seepage (very limited)	1.00	Very limited seepage (very limited) too sandy (very limited)	1.00 1.00
82006: Bosket-----	Slightly limited percs slowly (slightly limited)	0.25	Very limited seepage (very limited) slope (slightly limited)	1.00 0.08	Very limited too sandy (very limited) seepage (limited)	1.00 0.79	Limited seepage (limited)	0.75	Very limited too sandy (very limited) seepage (moderately limited)	1.00 0.50
82007: Bosket-----	Very limited flooding (very limited) percs slowly (slightly limited)	1.00 0.25	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (limited) too acid (moderately limited)	1.00 0.79 0.54	Very limited flooding (very limited) seepage (limited)	1.00 0.75	Moderately limited too acid (moderately limited) seepage (moderately limited)	0.54 0.50

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82009:										
Forestdale-----	Very limited wetness (very limited) percs slowly (very limited)	1.00 1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) too clayey (limited) too acid (slightly limited)	1.00 0.68 0.12	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) hard to pack (limited) too clayey (moderately limited)	1.00 0.70 0.41
82010:										
Amagon-----	Very limited wetness (very limited) percs slowly (limited)	1.00 0.93	Very limited wetness (very limited) seepage (moderately limited)	1.00 0.50	Very limited wetness (very limited) too acid (moderately limited) too clayey (slightly limited)	1.00 0.36 0.19	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) too acid (moderately limited) too clayey (slightly limited)	1.00 0.36 0.06
82011:										
Crowley-----	Very limited wetness (very limited) percs slowly (very limited)	1.00 1.00	Very limited seepage (very limited)	1.00	Very limited wetness (very limited) seepage (very limited) too clayey (moderately limited)	1.00 1.00 0.55	Very limited wetness (very limited)	1.00	Very limited seepage (very limited) wetness (limited) too clayey (slightly limited)	1.00 0.99 0.27
86000:										
Dubbs-----	Very limited flooding (very limited) percs slowly (slightly limited)	1.00 0.25	Very limited flooding (very limited) seepage (very limited)	1.00 1.00	Very limited flooding (very limited) seepage (limited)	1.00 0.79	Very limited flooding (very limited)	1.00	Not limited	
86001:										
Calhoun-----	Very limited wetness (very limited) flooding (very limited) percs slowly (limited)	1.00 1.00 0.94	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited) flooding (very limited)	1.00 1.00	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Limited wetness (limited)	0.99

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86002: Falaya-----	Very limited wetness (very limited) flooding (very limited) percs slowly (slightly limited)	1.00 1.00 0.25	Very limited flooding (very limited) wetness (very limited) seepage (moderately limited)	1.00 1.00 0.50	Very limited wetness (very limited) flooding (very limited) too clayey (moderately limited)	1.00 1.00 0.58	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited) too acid (moderately limited) too clayey (slightly limited)	1.00 0.42 0.29
86003: Amagon-----	Very limited wetness (very limited) flooding (very limited) percs slowly (limited)	1.00 1.00 0.93	Very limited flooding (very limited) wetness (very limited) seepage (moderately limited)	1.00 1.00 0.50	Very limited wetness (very limited) flooding (very limited) too acid (moderately limited)	1.00 1.00 0.42	Very limited flooding (very limited) wetness (limited)	1.00 0.99	Moderately limited wetness (moderately limited) too acid (moderately limited)	0.60 0.42
86004: Forestdale----	Very limited wetness (very limited) flooding (very limited) percs slowly (very limited)	1.00 1.00 1.00	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited) flooding (very limited) too clayey (limited)	1.00 1.00 0.97	Very limited flooding (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited) too clayey (limited) hard to pack (limited)	1.00 0.94 0.70
90000: Memphis-----	Slightly limited percs slowly (slightly limited)	0.25	Limited slope (limited) seepage (moderately limited)	0.91 0.50	Slightly limited too acid (slightly limited) too clayey (slightly limited)	0.30 0.12	Not limited		Slightly limited too acid (slightly limited) too clayey (slightly limited)	0.30 0.01
90001: Memphis-----	Limited slope (limited) percs slowly (slightly limited)	0.63 0.25	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Limited slope (limited) too acid (slightly limited) too clayey (slightly limited)	0.63 0.12 0.02	Limited slope (limited)	0.63	Limited slope (limited) too acid (slightly limited)	0.63 0.12

Table 13.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption field		Sewage lagoons		Sanitary landfill (trench)		Sanitary landfill (area)		Daily cover for landfill	
	Rating class and limiting features	Value								
99001: Water-----	Not rated									
99003: Miscellaneous water-----	Not rated									
99007: Dam-----	Not rated									
99015: Udorthents----	Not rated									
Water-----	Not rated									

Table 14.--Construction Materials and Excavating

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Very limited low strength (very limited) shrink-swell (moderately limited) wetness (slightly limited)	1.00  0.39  0.03	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Probable excess fines (thickest layer) probable source (bottom layer)	1.00  0.33	Moderately limited too clayey (moderately limited) wetness (slightly limited)	0.58  0.03	Very limited cutbanks cave (very limited) wetness (limited) too clayey (slightly limited)	1.00  0.99  0.04
60046: Minnith-----	Very limited low strength (very limited) slope (limited) shrink-swell (slightly limited)	1.00  0.92  0.04	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Very limited slope (very limited) too clayey (moderately limited) too acid (slightly limited)	1.00  0.33  0.24	Very limited slope (very limited) wetness (limited) cutbanks cave (slightly limited)	1.00  0.95  0.29
60053: Winfield-----	Limited wetness (limited)	0.76	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Limited wetness (limited) too clayey (slightly limited) too acid (slightly limited)	0.76  0.12  0.06	Very limited wetness (very limited) cutbanks cave (slightly limited) too clayey (slightly limited)	1.00  0.29  0.20
60054: Minnith-----	Very limited low strength (very limited) shrink-swell (slightly limited)	1.00  0.04	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Limited slope (limited) too clayey (moderately limited) too acid (slightly limited)	0.63  0.33  0.24	Limited wetness (limited) slope (limited) cutbanks cave (slightly limited)	0.95  0.63  0.29

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60055:										
Winfield-----	Very limited low strength (very limited) shrink-swell (moderately limited) wetness (slightly limited)	1.00  0.45  0.03	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Moderately limited too clayey (moderately limited) wetness (slightly limited)	0.55  0.03	Limited wetness (limited) cutbanks cave (slightly limited) too clayey (slightly limited)	0.99  0.29  0.03
66000:										
Moniteau-----	Very limited wetness (very limited) low strength (very limited)	1.00  1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Very limited wetness (very limited) too acid (limited)	1.00  0.84	Very limited wetness (very limited) flooding (moderately limited) cutbanks cave (slightly limited)	1.00  0.60  0.29
66054:										
Wakeland-----	Limited wetness (limited)	0.96	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Limited wetness (limited)	0.96	Very limited wetness (very limited) flooding (moderately limited) cutbanks cave (slightly limited)	1.00  0.60  0.29
66055:										
Haymond-----	Not limited		Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Not limited		Moderately limited flooding (moderately limited) cutbanks cave (slightly limited)	0.60  0.29
73055:										
Alred-----	Very limited low strength (very limited) slope (limited) shrink-swell (slightly limited)	1.00  0.92  0.10	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Possible excess fines (bottom layer) excess fines (thickest layer)	1.00  0.79	Very limited slope (very limited) small stones (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited slope (very limited) cutbanks cave (very limited) too clayey (very limited)	1.00  1.00  1.00

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value						
73055:										
Rueter-----	Limited slope (limited)	0.92	Improbable excess fines (thickest layer)	1.00	Probable excess fines (thickest layer)	0.89	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	low strength (slightly limited)	0.22	excess fines (bottom layer)	1.00	probable source (bottom layer)	0.45	small stones (very limited)	1.00	cutbanks cave (very limited)	1.00
			small stones (thickest layer)	0.30	small stones (thickest layer)	0.30	area reclaim (very limited)	1.00	too clayey (very limited)	1.00
73100:										
Wrengart-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Limited too clayey (limited)	0.72	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.05	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too acid (moderately limited)	0.42	wetness (limited)	0.99
	wetness (slightly limited)	0.03					wetness (slightly limited)	0.03	too clayey (moderately limited)	0.60
73101:										
Wrengart-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (thickest layer)	1.00	Limited too clayey (limited)	0.72	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.05	excess fines (bottom layer)	1.00	excess fines (bottom layer)	1.00	too acid (moderately limited)	0.42	wetness (limited)	0.99
	wetness (slightly limited)	0.03					wetness (slightly limited)	0.03	too clayey (moderately limited)	0.60
73139:										
Poynor-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Probable excess fines (bottom layer)	1.00	Very limited too clayey (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.21	excess fines (bottom layer)	1.00	probable source (thickest layer)	0.37	slope (limited)	0.63	too clayey (very limited)	1.00
							too acid (moderately limited)	0.36	slope (limited)	0.63
Clarksville----	Not limited		Improbable excess fines (thickest layer)	1.00	Possible excess fines (bottom layer)	1.00	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	0.99	slope (limited)	0.63	slope (limited)	0.63
							too sandy (slightly limited)	0.30	too clayey (moderately limited)	0.51

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73139: Scholten-----	Limited wetness (limited)	0.96	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Possible excess fines (bottom layer) excess fines (thickest layer)	1.00 0.99	Very limited small stones (very limited) wetness (limited) slope (limited)	1.00 0.96 0.63	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (limited)	1.00 1.00 0.78
73140: Clarksville----	Very limited slope (very limited)	1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Probable excess fines (bottom layer) probable source (thickest layer)	1.00 0.50	Very limited slope (very limited) small stones (very limited) area reclaim (very limited)	1.00 1.00 1.00	Very limited slope (very limited) cutbanks cave (very limited) too clayey (limited)	1.00 1.00 0.68
Scholten-----	Limited slope (limited) wetness (slightly limited)	0.92 0.04	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Possible excess fines (bottom layer) excess fines (thickest layer)	1.00 0.99	Very limited slope (very limited) small stones (very limited) area reclaim (very limited)	1.00 1.00 1.00	Very limited slope (very limited) cutbanks cave (very limited) wetness (limited)	1.00 1.00 0.99
73141: Firebaugh-----	Limited wetness (limited) shrink-swell (slightly limited)	0.64 0.00	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.30	Probable probable source (thickest layer) small stones (thickest layer) small stones (bottom layer)	0.45 0.30 0.30	Very limited small stones (very limited) area reclaim (very limited) wetness (limited)	1.00 1.00 0.64	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (limited)	1.00 1.00 0.64
73145: Crider-----	Very limited low strength (very limited) shrink-swell (slightly limited)	1.00 0.07	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Slightly limited too clayey (slightly limited)	0.29	Slightly limited cutbanks cave (slightly limited) too clayey (slightly limited)	0.29 0.13

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73146:										
Marquand-----	Very limited low strength (very limited) wetness (slightly limited)	1.00  0.28	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Moderately limited too clayey (moderately limited) too acid (moderately limited) wetness (slightly limited)	0.39  0.36  0.28	Very limited wetness (very limited) cutbanks cave (slightly limited) too clayey (slightly limited)	1.00  0.29  0.18
73150:										
Caneyville-----	Very limited low strength (very limited) depth to bedrock (very limited) shrink-swell (moderately limited)	1.00  1.00  0.45	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Very limited too clayey (very limited) depth to bedrock (very limited) slope (limited)	1.00  0.99  0.63	Very limited hard bedrock <40" (very limited) too clayey (very limited) slope (limited)	1.00  1.00  0.63
Bucklick-----	Very limited shrink-swell (very limited) low strength (very limited) depth to bedrock (moderately limited)	1.00  1.00  0.57	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Very limited too clayey (very limited) slope (limited) depth to bedrock (slightly limited)	1.00  0.63  0.16	Limited too clayey (limited) depth to bedrock (limited) slope (limited)	0.91  0.75  0.63
73151:										
Caneyville-----	Very limited low strength (very limited) depth to bedrock (very limited) slope (moderately limited)	1.00  1.00  0.50	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Very limited slope (very limited) too clayey (very limited) depth to bedrock (limited)	1.00  1.00  0.95	Very limited hard bedrock <40" (very limited) slope (very limited) too clayey (limited)	1.00  1.00  0.73
Gasconade-----	Very limited depth to bedrock (very limited) slope (moderately limited) shrink-swell (moderately limited)	1.00  0.50  0.45	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00  1.00  0.57	Improbable excess fines (bottom layer) excess fines (thickest layer) small stones (thickest layer)	1.00  1.00  0.57	Very limited depth to bedrock (very limited) slope (very limited) small stones (very limited)	1.00  1.00  1.00	Very limited hard bedrock <40" (very limited) slope (very limited) large stones (moderately limited)	1.00  1.00  0.44

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151: Bucklick-----	Very limited low strength (very limited) shrink-swell (limited) depth to bedrock (moderately limited)	1.00 0.92 0.54	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Very limited slope (very limited) too clayey (very limited) depth to bedrock (slightly limited)	1.00 1.00 0.12	Very limited slope (very limited) too clayey (limited) depth to bedrock (limited)	1.00 0.80 0.72
73156: Alred-----	Very limited low strength (very limited) shrink-swell (slightly limited)	1.00 0.09	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Possible excess fines (bottom layer) excess fines (thickest layer)	1.00 0.94	Very limited small stones (very limited) slope (limited) too acid (moderately limited)	1.00 0.63 0.36	Very limited cutbanks cave (very limited) too clayey (very limited) slope (limited)	1.00 1.00 0.63
Gepp-----	Very limited low strength (very limited) shrink-swell (moderately limited)	1.00 0.45	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) slope (limited) too acid (slightly limited)	1.00 0.63 0.24	Very limited too clayey (very limited) slope (limited) cutbanks cave (slightly limited)	1.00 0.63 0.29
73157: Captina-----	Very limited low strength (very limited) wetness (slightly limited) shrink-swell (slightly limited)	1.00 0.26 0.08	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Limited area reclaim (limited) too clayey (moderately limited) too acid (slightly limited)	0.97 0.53 0.30	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (limited)	1.00 1.00 0.85
73223: Coulstone-----	Limited large stones (very limited) slope (limited)	1.00 0.92	Improbable excess fines (thickest layer) excess fines (bottom layer) large stones (bottom layer)	1.00 1.00 0.30	Probable excess fines (bottom layer) large stones (thickest layer) large stones (bottom layer)	0.75 0.30 0.30	Very limited slope (very limited) small stones (very limited) area reclaim (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large stones (very limited) cutbanks cave (slightly limited)	1.00 1.00 0.29

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73223:										
Bender-----	Very limited depth to bedrock (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable small stones (thickest layer)	1.00	Very limited slope (very limited)	1.00	Very limited hard bedrock <40" (very limited)	1.00
	slope (very limited)	1.00	excess fines (bottom layer)	1.00	small stones (bottom layer)	1.00	small stones (very limited)	1.00	slope (very limited)	1.00
	large stones (very limited)	1.00	small stones (thickest layer)	1.00	possible source (bottom layer)	0.48	large stones >25% (very limited)	1.00	large stones (very limited)	1.00
73264:										
Alred-----	Limited slope (limited)	0.92	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	shrink-swell (limited)	0.66	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too clayey (very limited)	1.00	cutbanks cave (very limited)	1.00
							small stones (limited)	0.88	too clayey (very limited)	1.00
Wrengart-----	Moderately limited slope (moderately limited)	0.50	Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	wetness (slightly limited)	0.12	excess fines (bottom layer)	1.00	excess fines (bottom layer)	0.75	area reclaim (very limited)	1.00	cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.05					too acid (slightly limited)	0.24	wetness (very limited)	1.00
73265:										
Captina-----	Moderately limited wetness (moderately limited)	0.55	Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	1.00	Very limited area reclaim (very limited)	1.00	Very limited wetness (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (bottom layer)	0.75	large stones (limited)	0.80	cutbanks cave (very limited)	1.00
							wetness (moderately limited)	0.55	too clayey (moderately limited)	0.31
Scholten-----	Limited wetness (limited)	0.97	Improbable excess fines (thickest layer)	1.00	Probable excess fines (bottom layer)	0.60	Very limited small stones (very limited)	1.00	Very limited wetness (very limited)	1.00
			excess fines (bottom layer)	1.00	probable source (thickest layer)	0.30	area reclaim (very limited)	1.00	cutbanks cave (very limited)	1.00
							wetness (limited)	0.97	too clayey (limited)	0.94

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73266: Hildebrecht----	Very limited low strength (very limited) shrink-swell (slightly limited)	1.00  0.05	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Probable excess fines (thickest layer) probable source (bottom layer)	1.00  0.50	Very limited area reclaim (very limited) slope (limited) too clayey (limited)	1.00  0.63  0.61	Very limited cutbanks cave (very limited) too clayey (very limited) wetness (limited)	1.00  1.00  0.95
73267: Yelton-----	Limited wetness (limited) low strength (limited)	0.82  0.78	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00  1.00  0.99	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00  1.00  0.99	Very limited dense layer <20" (very limited) area reclaim (very limited) wetness (limited)	1.00  1.00  0.82	Very limited dense layer <20" (very limited) wetness (very limited) cutbanks cave (very limited)	1.00  1.00  1.00
Scholten-----	Limited wetness (limited)	0.97	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Probable excess fines (bottom layer) probable source (thickest layer)	1.00  0.33	Very limited small stones (very limited) wetness (limited) slope (limited)	1.00  0.97  0.63	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (very limited)	1.00  1.00  1.00
73269: Brussels-----	Very limited slope (very limited) shrink-swell (moderately limited)	1.00  0.45	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00  1.00	Very limited slope (very limited) small stones (very limited) large surface stones (very limited)	1.00  1.00  1.00	Very limited slope (very limited) cutbanks cave (very limited) too clayey (slightly limited)	1.00  1.00  0.18
Gasconade-----	Very limited slope (very limited) depth to bedrock (very limited) shrink-swell (moderately limited)	1.00  1.00  0.45	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00  1.00	Very limited depth to bedrock (very limited) slope (very limited) too clayey (very limited)	1.00  1.00  1.00	Very limited hard bedrock <40" (very limited) slope (very limited) cutbanks cave (slightly limited)	1.00  1.00  0.29
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73270:										
Wrengart-----	Slightly limited shrink-swell (slightly limited)	0.12	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Limited slope (limited)	0.63	Very limited cutbanks cave (very limited)	1.00
	wetness (slightly limited)	0.03	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too clayey (slightly limited)	0.29	too clayey (limited)	0.99
							area reclaim (slightly limited)	0.08	wetness (limited)	0.99
73343:										
Captina-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (thickest layer)	1.00	Limited too clayey (limited)	0.63	Very limited wetness (very limited)	1.00
	wetness (moderately limited)	0.55	excess fines (bottom layer)	1.00	excess fines (bottom layer)	1.00	wetness (moderately limited)	0.55	cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.14					too acid (moderately limited)	0.42	too clayey (very limited)	1.00
73344:										
Captina-----	Moderately limited wetness (moderately limited)	0.55	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited area reclaim (very limited)	1.00	Very limited wetness (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	slope (limited)	0.63	cutbanks cave (very limited)	1.00
							too clayey (limited)	0.61	slope (limited)	0.63
73345:										
Hildebrecht----	Slightly limited wetness (slightly limited)	0.26	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Moderately limited too clayey (moderately limited)	0.43	Very limited wetness (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	area reclaim (moderately limited)	0.32	cutbanks cave (very limited)	1.00
							wetness (slightly limited)	0.26	too clayey (moderately limited)	0.45
73346:										
Hildebrecht----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Limited too acid (limited)	0.68	Very limited wetness (very limited)	1.00
	wetness (slightly limited)	0.26	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too clayey (moderately limited)	0.43	cutbanks cave (very limited)	1.00
							wetness (slightly limited)	0.26	too clayey (very limited)	1.00

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74644: Deible-----	Very limited low strength (very limited) wetness (very limited) shrink-swell (limited)	1.00 1.00 0.83	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (limited) too acid (slightly limited)	1.00 0.86 0.30	Very limited wetness (very limited) cutbanks cave (slightly limited) too clayey (slightly limited)	1.00 0.29 0.20
74646: Cornwall-----	Very limited low strength (very limited) wetness (slightly limited)	1.00 0.26	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Slightly limited wetness (slightly limited) too acid (slightly limited)	0.26 0.18	Very limited wetness (very limited) cutbanks cave (slightly limited)	1.00 0.29
74648: Aslinger-----	Moderately limited wetness (moderately limited)	0.48	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (bottom layer)	1.00 1.00 0.66	Possible excess fines (bottom layer) small stones (bottom layer) excess fines (thickest layer)	0.75 0.66 0.60	Very limited area reclaim (very limited) wetness (moderately limited) too clayey (slightly limited)	1.00 0.48 0.17	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (moderately limited)	1.00 1.00 0.41
74649: Aslinger-----	Moderately limited wetness (moderately limited)	0.48	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.66	Improbable excess fines (bottom layer) excess fines (thickest layer) small stones (thickest layer)	1.00 1.00 0.66	Limited small stones (limited) area reclaim (limited) wetness (moderately limited)	0.88 0.68 0.48	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (limited)	1.00 1.00 0.73
Waben-----	Slightly limited large stones (slightly limited)	0.01	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited small stones (very limited) area reclaim (very limited) large stones (slightly limited)	1.00 1.00 0.18	Very limited cutbanks cave (very limited) too clayey (slightly limited) large stones (slightly limited)	1.00 0.10 0.01

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74679: Higdon-----	Limited wetness (limited) shrink-swell (moderately limited)	0.86 0.39	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited wetness (limited) too acid (slightly limited) too clayey (slightly limited)	0.86 0.24 0.05	Very limited wetness (very limited) cutbanks cave (slightly limited)	1.00 0.29
74680: Moniteau-----	Very limited low strength (very limited) wetness (very limited) shrink-swell (slightly limited)	1.00 1.00 0.23	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (moderately limited)	1.00 0.34	Very limited wetness (very limited) cutbanks cave (slightly limited)	1.00 0.29
74685: Auxvasse-----	Very limited low strength (very limited) shrink-swell (very limited) wetness (limited)	1.00 1.00 0.86	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited too acid (limited) too clayey (limited) wetness (limited)	1.00 0.92 0.86	Very limited wetness (very limited) cutbanks cave (slightly limited) too clayey (slightly limited)	1.00 0.29 0.23
75379: Kaintuck-----	Not limited		Probable excess fines (thickest layer) probable source (bottom layer)	1.00 0.42	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited too sandy (limited)	0.73	Very limited cutbanks cave (very limited) flooding (moderately limited)	1.00 0.60
75381: Bearthicket---	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 0.99	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Not limited		Slightly limited cutbanks cave (slightly limited)	0.29

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75395: Jamesfin-----	Slightly limited low strength (slightly limited)	0.22	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Not limited		Moderately limited flooding (moderately limited) cutbanks cave (slightly limited) wetness (slightly limited)	0.60 0.29 0.16
75408: Secesh-----	Not limited		Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Very limited area reclaim (very limited) small stones (limited)	1.00 0.92	Very limited cutbanks cave (very limited)	1.00
75409: Relfe-----	Not limited		Probable excess fines (thickest layer) probable source (bottom layer)	1.00 0.25	Probable excess fines (thickest layer) probable source (bottom layer)	1.00 0.40	Very limited too sandy (very limited) small stones (very limited) area reclaim (very limited)	1.00 1.00 1.00	Very limited cutbanks cave (very limited) flooding (moderately limited)	1.00 0.60
75411: Tilk-----	Not limited		Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 0.99	Probable excess fines (thickest layer) probable source (bottom layer)	1.00 0.42	Very limited small stones (very limited) area reclaim (very limited) too sandy (moderately limited)	1.00 1.00 0.38	Very limited cutbanks cave (very limited)	1.00
75416: Gladden-----	Not limited		Possible excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Not limited		Very limited cutbanks cave (very limited) flooding (moderately limited)	1.00 0.60

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75417: Relfe-----	Not limited		Probable excess fines (thickest layer) probable source (bottom layer)	1.00 0.26	Probable excess fines (thickest layer) probable source (bottom layer)	0.75 0.25	Very limited too sandy (very limited) small stones (very limited) area reclaim (very limited)	1.00 1.00 1.00	Very limited cutbanks cave (very limited) flooding (moderately limited)	1.00 0.60
Sandbur-----	Not limited		Possible excess fines (thickest layer) excess fines (bottom layer)	1.00 0.97	Possible excess fines (thickest layer) excess fines (bottom layer)	1.00 0.99	Very limited area reclaim (very limited) too sandy (limited)	1.00 0.76	Very limited cutbanks cave (very limited) flooding (moderately limited)	1.00 0.60
75426: Gabriel-----	Very limited low strength (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.86 0.37	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited wetness (limited) too clayey (moderately limited)	0.86 0.33	Very limited wetness (very limited) cutbanks cave (slightly limited)	1.00 0.29
75428: Tilk-----	Not limited		Probable excess fines (thickest layer) probable source (bottom layer)	1.00 0.43	Possible excess fines (thickest layer) excess fines (bottom layer)	1.00 0.75	Very limited small stones (very limited) area reclaim (very limited) too sandy (limited)	1.00 1.00 0.61	Very limited cutbanks cave (very limited) flooding (moderately limited)	1.00 0.60
Cornwall-----	Limited wetness (limited)	0.91	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Very limited area reclaim (very limited) wetness (limited) too clayey (moderately limited)	1.00 0.91 0.40	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (slightly limited)	1.00 1.00 0.07

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75428: Poynor-----	Slightly limited shrink-swell (slightly limited)	0.17	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	slope (limited)	0.63	slope (limited)	0.63
							too acid (slightly limited)	0.18	too clayey (moderately limited)	0.45
75429: Tilk-----	Not limited		Improbable excess fines (thickest layer)	1.00	Probable excess fines (bottom layer)	0.75	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	probable source (thickest layer)	0.42	area reclaim (very limited)	1.00	flooding (moderately limited)	0.60
							too sandy (limited)	0.66		
Secesh-----	Slightly limited large stones (slightly limited)	0.12	Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	1.00	Very limited large stones >25% (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (bottom layer)	0.99	small stones (very limited)	1.00	large stones (slightly limited)	0.12
			small stones (thickest layer)	0.66	small stones (thickest layer)	0.66	area reclaim (very limited)	1.00		
75430: Wideman-----	Not limited		Probable excess fines (bottom layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited too sandy (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			probable source (thickest layer)	0.29	excess fines (thickest layer)	1.00	area reclaim (slightly limited)	0.08	flooding (moderately limited)	0.60
75451: Gladden-----	Not limited		Possible excess fines (thickest layer)	1.00	Probable excess fines (thickest layer)	1.00	Very limited area reclaim (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	0.73	probable source (bottom layer)	0.42	small stones (very limited)	1.00	flooding (moderately limited)	0.60

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75467: Wilbur-----	Limited wetness (limited) low strength (slightly limited)	0.69 0.22	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited wetness (limited)	0.69	Very limited wetness (very limited) flooding (moderately limited) cutbanks cave (slightly limited)	1.00 0.60 0.29
75468: Elsah-----	Not limited		Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Very limited small stones (very limited) area reclaim (very limited)	1.00 1.00	Very limited cutbanks cave (very limited) flooding (moderately limited)	1.00 0.60
77000: Killarney-----	Very limited slope (very limited) wetness (slightly limited) large stones (slightly limited)	1.00 0.12 0.01	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Probable excess fines (thickest layer) probable source (bottom layer)	0.84 0.50	Very limited slope (very limited) small stones (very limited) large surface stones (very limited)	1.00 1.00 1.00	Very limited slope (very limited) cutbanks cave (very limited) wetness (very limited)	1.00 1.00 1.00
Frenchmill-----	Very limited slope (very limited) large stones (slightly limited)	1.00 0.13	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited slope (very limited) large surface stones (very limited) large stones (limited)	1.00 1.00 0.95	Very limited slope (very limited) cutbanks cave (very limited) large stones (slightly limited)	1.00 1.00 0.13
77002: Delassus-----	Moderately limited wetness (moderately limited)	0.33	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited too clayey (limited) too acid (moderately limited) wetness (moderately limited)	0.66 0.48 0.33	Very limited wetness (very limited) cutbanks cave (slightly limited) depth to bedrock (slightly limited)	1.00 0.29 0.27

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77005:										
Hassler-----	Limited depth to bedrock (limited)	0.84	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited slope (very limited)	1.00	Very limited wetness (very limited)	1.00
	wetness (moderately limited)	0.36	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	small stones (limited)	0.99	slope (very limited)	1.00
	slope (slightly limited)	0.17	large stones (bottom layer)	0.34	large stones (bottom layer)	0.34	depth to bedrock (moderately limited)	0.38	depth to bedrock (limited)	0.91
Syenite-----	Very limited depth to bedrock (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited hard bedrock <40" (very limited)	1.00
	slope (moderately limited)	0.33	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	slope (very limited)	1.00	slope (very limited)	1.00
							too acid (moderately limited)	0.54	cutbanks cave (slightly limited)	0.29
77008:										
Hassler-----	Moderately limited depth to bedrock (moderately limited)	0.52	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Moderately limited too acid (moderately limited)	0.42	Very limited wetness (very limited)	1.00
	wetness (moderately limited)	0.36	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	wetness (moderately limited)	0.36	cutbanks cave (very limited)	1.00
			large stones (bottom layer)	0.30	large stones (thickest layer)	0.30	large surface stones (slightly limited)	0.17	depth to bedrock (limited)	0.69
80000:										
Calhoun-----	Very limited wetness (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	shrink-swell (slightly limited)	0.20	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too acid (slightly limited)	0.18	cutbanks cave (slightly limited)	0.29
80001:										
Oaklimeter-----	Moderately limited wetness (moderately limited)	0.48	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Moderately limited wetness (moderately limited)	0.48	Very limited wetness (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00			cutbanks cave (slightly limited)	0.29
82000:										
Dubbs-----	Moderately limited shrink-swell (moderately limited)	0.43	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Not limited		Slightly limited cutbanks cave (slightly limited)	0.29
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00				

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82001: Amagon-----	Very limited wetness (very limited) shrink-swell (slightly limited)	1.00 0.17	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (limited) too acid (moderately limited)	1.00 0.67 0.42	Very limited ponded (wetness) (very limited) wetness (very limited) cutbanks cave (slightly limited)	1.00 1.00 0.29
82002: Forestdale----	Very limited low strength (very limited) wetness (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (very limited)	1.00 1.00	Very limited ponded (wetness) (very limited) wetness (very limited) too clayey (moderately limited)	1.00 1.00 0.50
82005: Malden-----	Not limited		Probable probable source (thickest layer) probable source (bottom layer)	0.40 0.26	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too sandy (very limited) too acid (slightly limited)	1.00 0.12	Very limited cutbanks cave (very limited)	1.00
82006: Bosket-----	Not limited		Probable excess fines (thickest layer) probable source (bottom layer)	1.00 0.31	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Moderately limited too sandy (moderately limited)	0.41	Very limited cutbanks cave (very limited)	1.00
82007: Bosket-----	Not limited		Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Slightly limited too acid (slightly limited)	0.18	Moderately limited flooding (moderately limited) cutbanks cave (slightly limited)	0.60 0.29

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82009:										
Forestdale----	Very limited low strength (very limited) wetness (very limited) shrink-swell (very limited)	1.00 1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (very limited) too acid (slightly limited)	1.00 1.00 1.00 0.12	Very limited wetness (very limited) too clayey (moderately limited) cutbanks cave (slightly limited)	1.00 0.41 0.29
82010:										
Amagon-----	Very limited low strength (very limited) wetness (very limited) shrink-swell (slightly limited)	1.00 1.00 0.14	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (limited) too acid (limited)	1.00 1.00 0.99 0.61	Very limited wetness (very limited) cutbanks cave (slightly limited) too clayey (slightly limited)	1.00 0.29 0.06
82011:										
Crowley-----	Very limited low strength (very limited) wetness (very limited) shrink-swell (moderately limited)	1.00 1.00 0.37	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (limited) too acid (limited)	1.00 0.99 0.61	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (slightly limited)	1.00 1.00 0.27
86000:										
Dubbs-----	Very limited low strength (very limited) shrink-swell (slightly limited)	1.00 0.23	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Not limited		Moderately limited flooding (moderately limited) cutbanks cave (slightly limited)	0.60 0.29
86001:										
Calhoun-----	Very limited low strength (very limited) wetness (very limited)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited) flooding (moderately limited) cutbanks cave (slightly limited)	1.00 0.60 0.29

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86002: Falaya-----	Very limited wetness (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too acid (moderately limited)	0.36	flooding (moderately limited)	0.60
									too clayey (slightly limited)	0.29
86003: Amagon-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Limited wetness (limited)	0.86	Very limited wetness (very limited)	1.00
	wetness (limited)	0.86	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too acid (moderately limited)	0.42	flooding (moderately limited)	0.60
	shrink-swell (moderately limited)	0.36					too clayey (slightly limited)	0.29	cutbanks cave (slightly limited)	0.29
86004: Forestdale----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
	wetness (very limited)	1.00	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too clayey (very limited)	1.00	too clayey (limited)	0.94
	shrink-swell (very limited)	1.00					too acid (limited)	0.61	flooding (moderately limited)	0.60
90000: Memphis-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Moderately limited too clayey (moderately limited)	0.51	Slightly limited cutbanks cave (slightly limited)	0.29
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too acid (slightly limited)	0.30	too clayey (slightly limited)	0.01
90001: Memphis-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Limited slope (limited)	0.63	Limited slope (limited)	0.63
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00	too clayey (slightly limited)	0.29	cutbanks cave (slightly limited)	0.29
							too acid (slightly limited)	0.12		

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Sand		Gravel		Topsoil		Shallow excavations	
	Rating class and limiting features	Value								
99001: Water-----	Not rated									
99003: Miscellaneous water-----	Not rated									
99007: Dam-----	Not rated									
99015: Udorthents----	Not rated									
Water-----	Not rated									

Table 15.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Moderately limited seepage (moderately limited)	0.50	Limited slope (limited)	0.98	Limited slope (limited)	0.98	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (moderately limited)	0.31	percs slowly (slightly limited)	0.13	erodes easily (moderately limited)	0.60	slope (moderately limited)	0.31	slope (moderately limited)	0.31
					percs slowly (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13
60046: Minnith-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	seepage (very limited)	1.00			erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60
60053: Winfield-----	Moderately limited seepage (moderately limited)	0.50	Limited slope (limited)	0.78	Limited slope (limited)	0.78	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (slightly limited)	0.20			erodes easily (moderately limited)	0.60	wetness (moderately limited)	0.55	wetness (moderately limited)	0.55
							slope (slightly limited)	0.20	slope (slightly limited)	0.20
60054: Minnith-----	Limited slope (limited)	0.99	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.99	Limited slope (limited)	0.99
	seepage (moderately limited)	0.32			erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60
60055: Winfield-----	Moderately limited seepage (moderately limited)	0.50	Slightly limited slope (slightly limited)	0.22	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (slightly limited)	0.05			slope (slightly limited)	0.22	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13
							slope (slightly limited)	0.05	slope (slightly limited)	0.05

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66000: Moniteau-----	Not limited		Moderately limited flooding (moderately limited) percs slowly (slightly limited)	0.60 0.13	Moderately limited flooding (moderately limited) erodes easily (moderately limited) percs slowly (slightly limited)	0.60 0.60 0.60 0.13	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60
66054: Wakeland-----	Moderately limited seepage (moderately limited)	0.50	Limited flooding (limited)	0.90	Limited flooding (limited) erodes easily (moderately limited)	0.90 0.60	Limited wetness (limited) erodes easily (moderately limited)	0.81 0.60	Limited wetness (limited) erodes easily (moderately limited)	0.81 0.60
66055: Haymond-----	Moderately limited seepage (moderately limited)	0.50	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited) erodes easily (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
73055: Alred-----	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Very limited slope (very limited) large surface stones (limited) percs slowly (moderately limited)	1.00 0.70 0.39	Very limited slope (very limited) large surface stones (limited) percs slowly (moderately limited)	1.00 0.70 0.39	Very limited slope (very limited) large surface stones (limited)	1.00 0.70	Very limited slope (very limited) large surface stones (limited)	1.00 0.70
Rueter-----	Very limited slope (very limited) seepage (very limited)	1.00 1.00	Very limited slope (very limited) large stones (very limited) large surface stones (limited)	1.00 1.00 0.70	Very limited slope (very limited) large surface stones (limited)	1.00 0.70	Very limited slope (very limited) large surface stones (limited)	1.00 0.70	Very limited slope (very limited) large surface stones (limited)	1.00 0.70

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73100:										
Wrengart-----	Moderately limited seepage (moderately limited)	0.50	Moderately limited slope (moderately limited)	0.40	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (slightly limited)	0.10	percs slowly (slightly limited)	0.13	slope (moderately limited)	0.40	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13
					percs slowly (slightly limited)	0.13	slope (slightly limited)	0.10	slope (slightly limited)	0.10
73101:										
Wrengart-----	Moderately limited seepage (moderately limited)	0.50	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (moderately limited)	0.45	percs slowly (slightly limited)	0.13	erodes easily (moderately limited)	0.60	slope (moderately limited)	0.45	slope (moderately limited)	0.45
					percs slowly (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13
73139:										
Poynor-----	Very limited seepage (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.99	Limited slope (limited)	0.99
	slope (limited)	0.99	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17
Clarksville---	Limited slope (limited)	0.99	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.99	Limited slope (limited)	0.99
	seepage (moderately limited)	0.50	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17
			large stones (slightly limited)	0.12						
Scholten-----	Very limited seepage (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.99	Limited slope (limited)	0.99
	slope (limited)	0.99	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	wetness (limited)	0.78	rooting depth (limited)	0.80
			large surface stones (slightly limited)	0.17	droughty (moderately limited)	0.45	large surface stones (slightly limited)	0.17	wetness (limited)	0.78

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73140: Clarksville----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	seepage (very limited)	1.00	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70
Scholten-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	seepage (very limited)	1.00	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	large surface stones (limited)	0.70	rooting depth (limited)	0.80
			large surface stones (limited)	0.70	large surface stones (limited)	0.70	wetness (slightly limited)	0.17	large surface stones (limited)	0.70
73141: Firebaugh-----	Moderately limited seepage (moderately limited)	0.50	Very limited large stones (very limited)	1.00	Limited slope (limited)	0.98	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (moderately limited)	0.31	slope (limited)	0.98	erodes easily (moderately limited)	0.60	wetness (moderately limited)	0.50	wetness (moderately limited)	0.50
			percs slowly (moderately limited)	0.39	percs slowly (moderately limited)	0.39	slope (moderately limited)	0.31	slope (moderately limited)	0.31
73145: Crider-----	Moderately limited seepage (moderately limited)	0.50	Limited slope (limited)	0.78	Limited slope (limited)	0.78	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (slightly limited)	0.20			erodes easily (moderately limited)	0.60	slope (slightly limited)	0.20	slope (slightly limited)	0.20
73146: Marquand-----	Moderately limited slope (moderately limited)	0.31	Limited slope (limited)	0.98	Limited slope (limited)	0.98	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
			percs slowly (slightly limited)	0.13	erodes easily (moderately limited)	0.60	wetness (moderately limited)	0.37	wetness (moderately limited)	0.37
					percs slowly (slightly limited)	0.13	slope (moderately limited)	0.31	slope (moderately limited)	0.31

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73150:										
Caneyville-----	Limited slope (limited)	0.99	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Limited slope (limited)	0.99
	depth to bedrock (limited)	0.85	depth to bedrock (slightly limited)	0.30	depth to bedrock (slightly limited)	0.30	slope (limited)	0.99	depth to bedrock (limited)	0.85
			percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13				
Bucklick-----	Limited slope (limited)	0.99	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.99	Limited slope (limited)	0.99
	depth to bedrock (limited)	0.63					depth to bedrock (moderately limited)	0.57	depth to bedrock (limited)	0.63
	seepage (moderately limited)	0.50								
73151:										
Caneyville-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	depth to bedrock (limited)	0.84	depth to bedrock (slightly limited)	0.28	depth to bedrock (slightly limited)	0.28	depth to bedrock (very limited)	1.00	depth to bedrock (limited)	0.84
			percs slowly (slightly limited)	0.13	percs slowly (slightly limited)	0.13				
Gasconade-----	Very limited bedrock <20 in. (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited shallow to bedrock (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited bedrock <20 in. (very limited)	1.00
	slope (very limited)	1.00	shallow to bedrock (very limited)	1.00	droughty (very limited)	1.00	depth to bedrock (very limited)	1.00	slope (very limited)	1.00
			large stones (very limited)	1.00	slope (very limited)	1.00	large stones (very limited)	1.00	droughty (very limited)	1.00
Bucklick-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	depth to bedrock (limited)	0.62					depth to bedrock (moderately limited)	0.54	depth to bedrock (limited)	0.62
	seepage (moderately limited)	0.50								

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73156: Alred-----	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited) percs slowly (moderately limited) large surface stones (slightly limited)	1.00 0.39 0.17	Very limited slope (very limited) percs slowly (moderately limited) large surface stones (slightly limited)	1.00 0.39 0.17	Limited slope (limited) large surface stones (slightly limited)	0.99 0.17	Limited slope (limited) large surface stones (slightly limited)	0.99 0.17
Gepp-----	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited) large surface stones (slightly limited)	1.00 0.17	Very limited slope (very limited) large surface stones (slightly limited)	1.00 0.17	Limited slope (limited) large surface stones (slightly limited)	0.99 0.17	Limited slope (limited) large surface stones (slightly limited)	0.99 0.17
73157: Captina-----	Moderately limited seepage (moderately limited) slope (moderately limited)	0.50 0.31	Limited slope (limited) percs slowly (moderately limited)	0.98 0.39	Limited slope (limited) erodes easily (moderately limited) percs slowly (moderately limited)	0.98 0.60 0.39	Moderately limited erodes easily (moderately limited) wetness (moderately limited) slope (moderately limited)	0.60 0.36 0.31	Limited rooting depth (limited) erodes easily (moderately limited) wetness (moderately limited)	0.80 0.60 0.36
73223: Coulstone-----	Very limited slope (very limited) seepage (very limited)	1.00 1.00	Very limited slope (very limited) large stones (very limited) large surface stones (limited)	1.00 1.00 0.89	Very limited slope (very limited) droughty (very limited) large stones (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large stones (very limited) large surface stones (limited)	1.00 1.00 0.89	Very limited slope (very limited) droughty (very limited) large stones (very limited)	1.00 1.00 1.00
Bender-----	Very limited slope (very limited) seepage (very limited) depth to bedrock (limited)	1.00 1.00 0.84	Very limited slope (very limited) large stones (very limited) large surface stones (moderately limited)	1.00 1.00 0.43	Very limited slope (very limited) droughty (very limited) large stones (very limited)	1.00 1.00 1.00	Very limited slope (very limited) depth to bedrock (very limited) large stones (very limited)	1.00 1.00 1.00	Very limited slope (very limited) droughty (very limited) large stones (very limited)	1.00 1.00 1.00

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73264: Alred-----	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Very limited slope (very limited) large surface stones (limited) percs slowly (moderately limited)	1.00 0.70 0.40	Very limited slope (very limited) large surface stones (limited) erodes easily (moderately limited)	1.00 0.70 0.60	Very limited slope (very limited) large surface stones (limited) erodes easily (moderately limited)	1.00 0.70 0.60	Very limited slope (very limited) large surface stones (limited) erodes easily (moderately limited)	1.00 0.70 0.60
Wrengart-----	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Very limited slope (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited slope (very limited) erodes easily (moderately limited) percs slowly (slightly limited)	1.00 0.60 0.13	Very limited slope (very limited) erodes easily (moderately limited) wetness (slightly limited)	1.00 0.60 0.28	Very limited slope (very limited) erodes easily (moderately limited) wetness (slightly limited)	1.00 0.60 0.28
73265: Captina-----	Moderately limited seepage (moderately limited) slope (moderately limited)	0.50 0.31	Limited slope (limited) percs slowly (moderately limited)	0.98 0.39	Limited slope (limited) erodes easily (moderately limited) percs slowly (moderately limited)	0.98 0.60 0.39	Moderately limited erodes easily (moderately limited) wetness (moderately limited) slope (moderately limited)	0.60 0.47 0.31	Limited rooting depth (limited) erodes easily (moderately limited) wetness (moderately limited)	0.80 0.60 0.47
Scholten-----	Moderately limited seepage (moderately limited) slope (moderately limited)	0.50 0.31	Very limited percs slowly (very limited) slope (limited)	1.00 0.98	Very limited percs slowly (very limited) slope (limited) droughty (slightly limited)	1.00 0.98 0.16	Limited wetness (limited) slope (moderately limited)	0.83 0.31	Limited wetness (limited) rooting depth (limited) slope (moderately limited)	0.83 0.80 0.31
73266: Hildebrecht---	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited) percs slowly (very limited)	1.00 0.99	Very limited slope (very limited) percs slowly (very limited) erodes easily (moderately limited)	1.00 0.99 0.60	Limited slope (limited) erodes easily (moderately limited)	0.99 0.60	Limited slope (limited) rooting depth (limited) erodes easily (moderately limited)	0.99 0.80 0.60

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73267:										
Yelton-----	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited) percs slowly (moderately limited)	1.00 0.40	Very limited slope (very limited) percs slowly (moderately limited)	1.00 0.40	Limited slope (limited) wetness (moderately limited)	0.99 0.58	Limited slope (limited) rooting depth (limited) wetness (moderately limited)	0.99 0.80 0.58
Scholten-----	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited) percs slowly (very limited)	1.00 1.00	Very limited slope (very limited) percs slowly (very limited) droughty (slightly limited)	1.00 0.16	Limited slope (limited) wetness (limited)	0.99 0.83	Limited slope (limited) wetness (limited) rooting depth (limited)	0.99 0.83 0.80
73269:										
Brussels-----	Very limited slope (very limited)	1.00	Very limited slope (very limited) large surface stones (very limited) percs slowly (slightly limited)	1.00 1.00 0.13	Very limited slope (very limited) large surface stones (very limited) percs slowly (slightly limited)	1.00 1.00 0.13	Very limited slope (very limited) large surface stones (very limited)	1.00 1.00	Very limited slope (very limited) large surface stones (very limited) droughty (slightly limited)	1.00 1.00 0.08
Gasconade-----	Very limited bedrock <20 in. (very limited) slope (very limited)	1.00 1.00	Very limited slope (very limited) shallow to bedrock (very limited) large surface stones (very limited)	1.00 1.00 1.00	Very limited shallow to bedrock (very limited) droughty (very limited) slope (very limited)	1.00 1.00 1.00	Very limited slope (very limited) depth to bedrock (very limited) large surface stones (very limited)	1.00 1.00 1.00	Very limited bedrock <20 in. (very limited) slope (very limited) droughty (very limited)	1.00 1.00 1.00
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
73270:										
Wrengart-----	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited) percs slowly (slightly limited)	1.00 0.13	Very limited slope (very limited) erodes easily (moderately limited) percs slowly (slightly limited)	1.00 0.60 0.13	Limited slope (limited) erodes easily (moderately limited) wetness (slightly limited)	0.99 0.60 0.13	Limited slope (limited) erodes easily (moderately limited) wetness (slightly limited)	0.99 0.60 0.13

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73343: Captina-----	Moderately limited seepage (moderately limited)	0.50	Limited slope (limited)	0.98	Limited slope (limited)	0.98	Moderately limited erodes easily (moderately limited)	0.60	Limited rooting depth (limited)	0.80
	slope (moderately limited)	0.31	percs slowly (moderately limited)	0.39	erodes easily (moderately limited)	0.60	wetness (moderately limited)	0.47	erodes easily (moderately limited)	0.60
					percs slowly (moderately limited)	0.39	slope (moderately limited)	0.31	wetness (moderately limited)	0.47
73344: Captina-----	Limited slope (limited)	0.99	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.99	Limited slope (limited)	0.99
	seepage (moderately limited)	0.50	percs slowly (moderately limited)	0.39	erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60	rooting depth (limited)	0.80
					percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.47	erodes easily (moderately limited)	0.60
73345: Hildebrecht----	Moderately limited seepage (moderately limited)	0.50	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Moderately limited erodes easily (moderately limited)	0.60	Limited rooting depth (limited)	0.80
	slope (moderately limited)	0.45	percs slowly (moderately limited)	0.39	erodes easily (moderately limited)	0.60	slope (moderately limited)	0.45	erodes easily (moderately limited)	0.60
					percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.36	slope (moderately limited)	0.45
73346: Hildebrecht----	Moderately limited seepage (moderately limited)	0.50	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Moderately limited erodes easily (moderately limited)	0.60	Limited rooting depth (limited)	0.80
	slope (moderately limited)	0.45	percs slowly (moderately limited)	0.39	erodes easily (moderately limited)	0.60	slope (moderately limited)	0.45	erodes easily (moderately limited)	0.60
					percs slowly (moderately limited)	0.39	wetness (moderately limited)	0.36	slope (moderately limited)	0.45
74644: Deible-----	Not limited		Very limited percs slowly (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
					erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74646: Cornwall-----	Moderately limited seepage (moderately limited)	0.50	Limited slope (limited)	0.98	Limited slope (limited)	0.98	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (moderately limited)	0.31	percs slowly (moderately limited)	0.39	erodes easily (moderately limited)	0.60	wetness (moderately limited)	0.36	wetness (moderately limited)	0.36
					percs slowly (moderately limited)	0.39	slope (moderately limited)	0.31	slope (moderately limited)	0.31
74648: Aslinger-----	Moderately limited seepage (moderately limited)	0.50	Limited slope (limited)	0.98	Limited slope (limited)	0.98	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
	slope (moderately limited)	0.31	percs slowly (slightly limited)	0.13	erodes easily (moderately limited)	0.60	wetness (moderately limited)	0.44	wetness (moderately limited)	0.44
					percs slowly (slightly limited)	0.13	slope (moderately limited)	0.31	slope (moderately limited)	0.31
74649: Aslinger-----	Limited slope (limited)	0.70	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Limited slope (limited)	0.70	Limited slope (limited)	0.70
	seepage (moderately limited)	0.50	percs slowly (slightly limited)	0.13	erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60	erodes easily (moderately limited)	0.60
					percs slowly (slightly limited)	0.13	wetness (moderately limited)	0.44	wetness (moderately limited)	0.44
Waben-----	Very limited seepage (very limited)	1.00	Limited slope (limited)	0.78	Limited slope (limited)	0.78	Very limited large stones (very limited)	1.00	Very limited large stones (very limited)	1.00
	slope (slightly limited)	0.20	large stones (moderately limited)	0.51	droughty (slightly limited)	0.01	slope (slightly limited)	0.20	slope (slightly limited)	0.20
					large stones (slightly limited)	0.01			droughty (slightly limited)	0.01
74679: Higdon-----	Not limited		Slightly limited percs slowly (slightly limited)	0.13	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
					percs slowly (slightly limited)	0.13	wetness (moderately limited)	0.60	wetness (moderately limited)	0.60

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74680: Moniteau-----	Not limited		Slightly limited percs slowly (slightly limited)	0.13	Moderately limited erodes easily (moderately limited) percs slowly (slightly limited)	0.60 0.13	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60
74685: Auxvasse-----	Slightly limited slope (slightly limited)	0.10	Very limited percs slowly (very limited) slope (moderately limited)	1.00 0.40	Very limited percs slowly (very limited) erodes easily (moderately limited) slope (moderately limited)	1.00 0.60 0.40	Moderately limited erodes easily (moderately limited) wetness (moderately limited) slope (slightly limited)	0.60 0.60 0.10	Moderately limited erodes easily (moderately limited) wetness (moderately limited) slope (slightly limited)	0.60 0.60 0.10
75379: Kaintuck-----	Very limited seepage (very limited)	1.00	Limited cutbanks cave (limited) flooding (limited)	0.90 0.90	Limited flooding (limited) erodes easily (moderately limited)	0.90 0.60	Moderately limited too sandy (moderately limited) erodes easily (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited)	0.60
75381: Bearthicket----	Moderately limited seepage (moderately limited)	0.50	Not limited		Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
75395: Jamesfin-----	Moderately limited seepage (moderately limited)	0.50	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited) erodes easily (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
75408: Secesh-----	Very limited seepage (very limited)	1.00	Not limited		Not limited		Not limited		Not limited	
75409: Relfe-----	Very limited seepage (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60	Limited droughty (limited) flooding (moderately limited)	0.84 0.60	Very limited too sandy (very limited)	1.00	Limited droughty (limited)	0.84

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75411: Tilk-----	Very limited seepage (very limited)	1.00	Moderately limited large stones (moderately limited)	0.51	Slightly limited droughty (slightly limited)	0.04	Limited large stones (limited)	0.90	Limited large stones (limited) droughty (slightly limited)	0.90 0.04
75416: Gladden-----	Very limited seepage (very limited)	1.00	Limited cutbanks cave (limited) flooding (moderately limited)	0.90 0.60	Moderately limited flooding (moderately limited)	0.60	Not limited		Not limited	
75417: Relfe-----	Very limited seepage (very limited)	1.00	Limited flooding (limited)	0.90	Very limited droughty (very limited) flooding (limited)	1.00 0.90	Moderately limited too sandy (moderately limited)	0.60	Very limited droughty (very limited)	1.00
Sandbur-----	Very limited seepage (very limited)	1.00	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Very limited too sandy (very limited)	1.00	Not limited	
75426: Gabriel-----	Not limited		Slightly limited percs slowly (slightly limited)	0.13	Moderately limited erodes easily (moderately limited) percs slowly (slightly limited)	0.60 0.13	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.60
75428: Tilk-----	Very limited seepage (very limited)	1.00	Moderately limited flooding (moderately limited) slope (slightly limited)	0.60 0.10	Moderately limited flooding (moderately limited) droughty (moderately limited) slope (slightly limited)	0.60 0.55 0.10	Slightly limited large stones (slightly limited)	0.10	Moderately limited droughty (moderately limited) large stones (slightly limited)	0.55 0.10

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75428:										
Cornwall-----	Limited slope (limited) seepage (moderately limited)	0.70 0.50	Very limited slope (very limited) percs slowly (moderately limited)	1.00 0.39	Very limited slope (very limited) percs slowly (moderately limited)	1.00 0.39	Limited slope (limited) wetness (limited)	0.70 0.68	Limited slope (limited) wetness (limited)	0.70 0.68
Poynor-----	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited)	1.00	Very limited slope (very limited) droughty (moderately limited)	1.00 0.44	Limited slope (limited) large stones (slightly limited)	0.99 0.19	Limited slope (limited) droughty (moderately limited) large stones (slightly limited)	0.99 0.44 0.19
75429:										
Tilk-----	Very limited seepage (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited)	0.60	Not limited		Not limited	
Secesh-----	Very limited seepage (very limited)	1.00	Very limited large stones (very limited)	1.00	Slightly limited large stones (slightly limited)	0.12	Very limited large stones (very limited)	1.00	Very limited large stones (very limited)	1.00
75430:										
Wideman-----	Very limited seepage (very limited)	1.00	Limited cutbanks cave (limited) flooding (moderately limited)	0.90 0.60	Moderately limited flooding (moderately limited)	0.60	Very limited too sandy (very limited)	1.00	Not limited	
75451:										
Gladden-----	Very limited seepage (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited) erodes easily (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
75467:										
Wilbur-----	Moderately limited seepage (moderately limited)	0.50	Limited flooding (limited)	0.90	Limited flooding (limited) erodes easily (moderately limited)	0.90 0.60	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.52	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.52

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75468:										
Elsah-----	Very limited seepage (very limited)	1.00	Limited flooding (limited) large stones (limited)	0.90 0.75	Limited flooding (limited)	0.90	Limited large stones (limited)	0.77	Limited large stones (limited)	0.77
77000:										
Killarney-----	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Very limited slope (very limited) large surface stones (very limited) percs slowly (very limited)	1.00 1.00	Very limited slope (very limited) large surface stones (very limited) percs slowly (very limited)	1.00 1.00	Very limited slope (very limited) large surface stones (very limited) large stones (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) large stones (very limited)	1.00 1.00 1.00
Frenchmill-----	Very limited slope (very limited) seepage (moderately limited)	1.00 0.50	Very limited slope (very limited) large surface stones (very limited) large stones (limited)	1.00 0.79	Very limited slope (very limited) large surface stones (very limited) large stones (slightly limited)	1.00 0.13	Very limited slope (very limited) large surface stones (very limited) large stones (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) large stones (very limited)	1.00 1.00 1.00
77002:										
Delassus-----	Moderately limited seepage (moderately limited) slope (moderately limited) depth to bedrock (slightly limited)	0.50 0.31 0.27	Very limited percs slowly (very limited) slope (limited)	1.00 0.98	Very limited percs slowly (very limited) slope (limited) erodes easily (moderately limited)	1.00 0.98 0.60	Moderately limited erodes easily (moderately limited) wetness (moderately limited) slope (moderately limited)	0.60 0.39 0.31	Limited rooting depth (limited) erodes easily (moderately limited) wetness (moderately limited)	0.80 0.60 0.39
77005:										
Hassler-----	Very limited slope (very limited) depth to bedrock (limited) seepage (moderately limited)	1.00 0.69 0.50	Very limited slope (very limited) large stones (very limited) percs slowly (slightly limited)	1.00 1.00	Very limited slope (very limited) percs slowly (slightly limited) large surface stones (slightly limited)	1.00 0.17 0.17	Very limited slope (very limited) large stones (very limited) depth to bedrock (limited)	1.00 1.00 0.84	Very limited slope (very limited) large stones (very limited) depth to bedrock (limited)	1.00 1.00 0.69

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77005: Syenite-----	Very limited slope (very limited) depth to bedrock (limited)	1.00 0.86	Very limited slope (very limited) depth to bedrock (moderately limited) large stones (slightly limited)	1.00 0.35 0.18	Very limited slope (very limited) depth to bedrock (moderately limited) percs slowly (slightly limited)	1.00 0.35 0.17	Very limited depth to bedrock (very limited) slope (very limited) large surface stones (slightly limited)	1.00 1.00 0.17	Very limited slope (very limited) depth to bedrock (limited) large surface stones (slightly limited)	1.00 0.86 0.17
77008: Hassler-----	Limited depth to bedrock (limited) slope (moderately limited) seepage (moderately limited)	0.61 0.60 0.50	Very limited slope (very limited) percs slowly (slightly limited) large surface stones (slightly limited)	1.00 0.17 0.17	Very limited slope (very limited) percs slowly (slightly limited) large surface stones (slightly limited)	1.00 0.17 0.17	Limited large stones (limited) slope (moderately limited) depth to bedrock (moderately limited)	0.72 0.60 0.52	Limited large stones (limited) depth to bedrock (limited) slope (moderately limited)	0.72 0.61 0.60
80000: Calhoun-----	Not limited		Moderately limited percs slowly (moderately limited)	0.40	Moderately limited erodes easily (moderately limited) percs slowly (moderately limited)	0.60 0.40	Limited wetness (limited) erodes easily (moderately limited)	0.99 0.60	Limited wetness (limited) erodes easily (moderately limited)	0.99 0.60
80001: Oaklimeter----	Moderately limited seepage (moderately limited)	0.50	Not limited		Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.44	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.44
82000: Dubbs-----	Very limited seepage (very limited)	1.00	Not limited		Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
82001: Amagon-----	Not limited		Very limited ponded (wetness) (very limited) percs slowly (moderately limited)	1.00 0.39	Very limited ponded (wetness) (very limited) erodes easily (moderately limited) percs slowly (moderately limited)	1.00 0.60 0.39	Very limited ponded (wetness) (very limited) wetness (very limited) erodes easily (moderately limited)	1.00 1.00 0.60	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82002: Forestdale-----	Not limited		Very limited ponded (wetness) (very limited) percs slowly (very limited)	1.00 1.00	Very limited ponded (wetness) (very limited) percs slowly (very limited) slow intake (moderately limited)	1.00 1.00 0.60	Very limited ponded (wetness) (very limited) wetness (very limited)	1.00 1.00	Very limited wetness (very limited)	1.00
82005: Malden-----	Very limited seepage (very limited)	1.00	Limited cutbanks cave (limited)	0.90	Limited fast intake (limited) droughty (limited)	0.90 0.70	Very limited too sandy (very limited)	1.00	Limited droughty (limited)	0.70
82006: Bosket-----	Very limited seepage (very limited)	1.00	Limited cutbanks cave (limited) slope (slightly limited)	0.90 0.10	Slightly limited slope (slightly limited)	0.10	Very limited too sandy (very limited)	1.00	Not limited	
82007: Bosket-----	Very limited seepage (very limited)	1.00	Limited cutbanks cave (limited) flooding (moderately limited)	0.90 0.60	Moderately limited flooding (moderately limited) erodes easily (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
82009: Forestdale-----	Not limited		Very limited percs slowly (very limited)	1.00	Very limited percs slowly (very limited) slow intake (moderately limited)	1.00 0.60	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
82010: Amagon-----	Moderately limited seepage (moderately limited)	0.50	Moderately limited percs slowly (moderately limited)	0.39	Moderately limited erodes easily (moderately limited) percs slowly (moderately limited)	0.60 0.39	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82011: Crowley-----	Very limited seepage (very limited)	1.00	Very limited percs slowly (very limited) cutbanks cave (limited)	1.00 0.90	Very limited percs slowly (very limited) erodes easily (moderately limited)	1.00 0.60	Limited wetness (limited) erodes easily (moderately limited)	0.99 0.60	Limited wetness (limited) erodes easily (moderately limited)	0.99 0.60
86000: Dubbs-----	Very limited seepage (very limited)	1.00	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited) erodes easily (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited)	0.60	Moderately limited erodes easily (moderately limited)	0.60
86001: Calhoun-----	Not limited		Moderately limited flooding (moderately limited) percs slowly (slightly limited)	0.60 0.23	Moderately limited flooding (moderately limited) erodes easily (moderately limited) percs slowly (slightly limited)	0.60 0.60 0.23	Limited wetness (limited) erodes easily (moderately limited)	0.99 0.60	Limited wetness (limited) erodes easily (moderately limited)	0.99 0.60
86002: Falaya-----	Moderately limited seepage (moderately limited)	0.50	Moderately limited flooding (moderately limited)	0.60	Moderately limited flooding (moderately limited) erodes easily (moderately limited)	0.60 0.60	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60	Very limited wetness (very limited) erodes easily (moderately limited)	1.00 0.60
86003: Amagon-----	Moderately limited seepage (moderately limited)	0.50	Moderately limited flooding (moderately limited) percs slowly (moderately limited)	0.60 0.39	Moderately limited flooding (moderately limited) erodes easily (moderately limited) percs slowly (moderately limited)	0.60 0.60 0.39	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.60	Moderately limited erodes easily (moderately limited) wetness (moderately limited)	0.60 0.60

Table 15.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Drainage		Irrigation		Terraces and diversions		Grassed waterways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86004: Forestdale-----	Not limited		Very limited percs slowly (very limited) flooding (moderately limited)	1.00 0.60	Very limited percs slowly (very limited) flooding (moderately limited) slow intake (moderately limited)	1.00 0.60 0.60	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00
90000: Memphis-----	Moderately limited seepage (moderately limited) slope (moderately limited)	0.50 0.31	Limited slope (limited)	0.98	Limited slope (limited) erodes easily (moderately limited)	0.98 0.60	Moderately limited erodes easily (moderately limited) slope (moderately limited)	0.60 0.31	Moderately limited erodes easily (moderately limited) slope (moderately limited)	0.60 0.31
90001: Memphis-----	Limited slope (limited) seepage (moderately limited)	0.99 0.50	Very limited slope (very limited)	1.00	Very limited slope (very limited) erodes easily (moderately limited)	1.00 0.60	Limited slope (limited) erodes easily (moderately limited)	0.99 0.60	Limited slope (limited) erodes easily (moderately limited)	0.99 0.60
99001: Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99003: Miscellaneous water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99007: Dam-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99015: Udorthents-----	Not rated		Not rated		Not rated		Not rated		Not rated	
Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 16.--Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60033: Wrengart-----	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Moderately limited slope (moderately limited) wetness (slightly limited)	0.31	Moderately limited slope (moderately limited) wetness (slightly limited)	0.31	Very limited percs slowly (very limited) wetness (very limited) slope (limited)	1.00
60046: Minnith-----	Very limited slope (very limited) percs slowly (limited)	1.00 0.61	Very limited slope (very limited) percs slowly (limited)	1.00 0.61	Very limited slope (very limited) percs slowly (limited)	1.00 0.61	Very limited slope (very limited) percs slowly (limited)	1.00 0.61	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00 1.00 1.00
60053: Winfield-----	Moderately limited wetness (moderately limited)	0.55	Moderately limited wetness (moderately limited)	0.55	Moderately limited wetness (moderately limited) slope (slightly limited)	0.55 0.20	Moderately limited wetness (moderately limited) slope (slightly limited)	0.55 0.20	Very limited percs slowly (very limited) wetness (very limited) slope (limited)	1.00 1.00 0.66
60054: Minnith-----	Limited slope (limited) percs slowly (limited)	0.76 0.61	Limited slope (limited) percs slowly (limited)	0.76 0.61	Limited slope (limited) percs slowly (limited)	0.99 0.61	Limited slope (limited) percs slowly (limited)	0.99 0.61	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00 1.00 1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60055:										
Winfield-----	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Very limited percs slowly (very limited)	1.00
					slope (slightly limited)	0.05	slope (slightly limited)	0.05	wetness (very limited)	1.00
									slope (slightly limited)	0.17
66000:										
Moniteau-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	wetness (very limited)	1.00
	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	flooding (moderately limited)	0.60
66054:										
Wakeland-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	wetness (limited)	0.81	wetness (limited)	0.81	wetness (limited)	0.81	wetness (limited)	0.81	wetness (very limited)	1.00
									flooding (very limited)	1.00
66055:										
Haymond-----	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Very limited percs slowly (very limited)	1.00
									flooding (moderately limited)	0.60
73055:										
Alred-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	slope (very limited)	1.00
	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73055:										
Rueter-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	slope (very limited)	1.00
	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70	large surface stones (limited)	0.70
73100:										
Wrengart-----	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Slightly limited wetness (slightly limited)	0.13	Very limited percs slowly (very limited)	1.00
					slope (slightly limited)	0.10	slope (slightly limited)	0.10	wetness (very limited)	1.00
									slope (moderately limited)	0.31
73101:										
Wrengart-----	Slightly limited slope (slightly limited)	0.15	Slightly limited slope (slightly limited)	0.15	Moderately limited slope (moderately limited)	0.45	Moderately limited slope (moderately limited)	0.45	Very limited percs slowly (very limited)	1.00
	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (very limited)	1.00
									slope (very limited)	1.00
73139:										
Poynor-----	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited slope (very limited)	1.00
	slope (limited)	0.76	slope (limited)	0.76	slope (limited)	0.99	slope (limited)	0.99	percs slowly (moderately limited)	0.32
	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17
Clarksville----	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	slope (limited)	0.76	slope (limited)	0.76	slope (limited)	0.99	slope (limited)	0.99	slope (very limited)	1.00
	too acid (slightly limited)	0.30	too acid (slightly limited)	0.30	too acid (slightly limited)	0.30	too acid (slightly limited)	0.30	large surface stones (slightly limited)	0.17

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value						
73139:										
Scholten-----	Very limited poor filter (very limited) wetness (limited) too acid (limited)	1.00  0.78  0.76	Very limited poor filter (very limited) wetness (limited) too acid (limited)	1.00  0.78  0.76	Very limited poor filter (very limited) slope (limited) wetness (limited)	1.00  0.99  0.78	Very limited poor filter (very limited) slope (limited) wetness (limited)	1.00  0.99  0.78	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00  1.00  1.00
73140:										
Clarksville----	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited percs slowly (very limited) slope (very limited) large surface stones (limited)	1.00  1.00  0.70
Scholten-----	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00  1.00  0.70	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00  1.00  1.00
73141:										
Firebaugh-----	Very limited poor filter (very limited) percs slowly (limited) wetness (moderately limited)	1.00  0.99  0.50	Very limited poor filter (very limited) percs slowly (limited) wetness (moderately limited)	1.00  0.99  0.50	Very limited poor filter (very limited) percs slowly (limited) wetness (moderately limited)	1.00  0.99  0.50	Very limited poor filter (very limited) percs slowly (limited) wetness (moderately limited)	1.00  0.99  0.50	Very limited percs slowly (very limited) wetness (very limited) slope (limited)	1.00  1.00  0.91
73145:										
Crider-----	Not limited		Not limited		Slightly limited slope (slightly limited)	0.20	Slightly limited slope (slightly limited)	0.20	Very limited percs slowly (very limited) slope (limited)	1.00  0.66

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73146:										
Marquand-----	Limited percs slowly (limited) wetness (moderately limited)	0.61  0.37	Limited percs slowly (limited) wetness (moderately limited)	0.61  0.37	Limited percs slowly (limited) wetness (moderately limited) slope (moderately limited)	0.61  0.37  0.31	Limited percs slowly (limited) wetness (moderately limited) slope (moderately limited)	0.61  0.37  0.31	Very limited percs slowly (very limited) wetness (very limited) slope (limited)	1.00  1.00  0.91
73150:										
Caneyville-----	Limited slope (limited) percs slowly (limited) depth to bedrock (slightly limited)	0.76  0.61  0.30	Limited slope (limited) percs slowly (limited) depth to bedrock (slightly limited)	0.76  0.61  0.30	Limited slope (limited) percs slowly (limited) depth to bedrock (slightly limited)	0.99  0.61  0.30	Very limited depth to bedrock (very limited) slope (limited) percs slowly (limited)	1.00  0.99  0.61	Very limited percs slowly (very limited) slope (very limited) depth to bedrock (very limited)	1.00  1.00  1.00
Bucklick-----	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Limited slope (limited)	0.99	Limited slope (limited) depth to bedrock (moderately limited)	0.99  0.57	Very limited percs slowly (very limited) slope (very limited) depth to bedrock (very limited)	1.00  1.00  1.00
73151:										
Caneyville-----	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00  1.00  0.61	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00  1.00  0.61	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00  1.00  0.61	Very limited depth to bedrock (very limited) slope (very limited) poor filter (very limited)	1.00  1.00  1.00	Very limited percs slowly (very limited) slope (very limited) depth to bedrock (very limited)	1.00  1.00  1.00
Gasconade-----	Very limited shallow to bedrock (very limited) droughty (very limited) slope (very limited)	1.00  1.00  1.00	Very limited droughty (very limited) shallow to bedrock (very limited) slope (very limited)	1.00  1.00  1.00	Very limited droughty (very limited) slope (very limited) shallow to bedrock (very limited)	1.00  1.00  1.00	Very limited depth to bedrock (very limited) slope (very limited) large stones (limited)	1.00  1.00  0.76	Very limited percs slowly (very limited) slope (very limited) depth to bedrock (very limited)	1.00  1.00  1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73151:										
Bucklick-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	slope (very limited)	1.00
							depth to bedrock (moderately limited)	0.54	depth to bedrock (very limited)	1.00
73156:										
Alred-----	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	slope (limited)	0.76	slope (limited)	0.76	slope (limited)	0.99	slope (limited)	0.99	slope (very limited)	1.00
	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17	large surface stones (slightly limited)	0.17
Gepp-----	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	slope (limited)	0.76	slope (limited)	0.76	slope (limited)	0.99	slope (limited)	0.99	slope (very limited)	1.00
	too acid (limited)	0.61	too acid (limited)	0.61	too acid (limited)	0.61	too acid (limited)	0.61	too acid (slightly limited)	0.21
73157:										
Captina-----	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Very limited percs slowly (very limited)	1.00
							slope (moderately limited)	0.31	wetness (very limited)	1.00
									slope (limited)	0.91
73223:										
Coulstone-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	droughty (very limited)	1.00	droughty (very limited)	1.00	droughty (very limited)	1.00	poor filter (very limited)	1.00	too stony (very limited)	1.00
	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	large stones >35% (very limited)	0.99	too cobbly (very limited)	1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73223: Bender-----	Very limited droughty (very limited) slope (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited droughty (very limited) slope (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) droughty (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited depth to bedrock (very limited) slope (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) depth to bedrock (very limited) too cobbly (very limited)	1.00 1.00 1.00
73264: Alred-----	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00 1.00 1.00 0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00 1.00 1.00 0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00 1.00 1.00 0.70	Very limited slope (very limited) poor filter (very limited) large surface stones (limited)	1.00 1.00 1.00 0.70	Very limited percs slowly (very limited) slope (very limited) large surface stones (limited)	1.00 1.00 1.00 0.70
Wrengart-----	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00 1.00 1.00 0.61	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00 1.00 1.00 0.61	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00 1.00 1.00 0.61	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00 1.00 1.00 0.61	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00 1.00 1.00
73265: Captina-----	Moderately limited wetness (moderately limited) too acid (moderately limited) large stones (slightly limited)	0.47 0.36 0.15	Moderately limited wetness (moderately limited) too acid (moderately limited) large stones (slightly limited)	0.47 0.36 0.15	Moderately limited wetness (moderately limited) too acid (moderately limited) slope (moderately limited)	0.47 0.36 0.31	Moderately limited wetness (moderately limited) too acid (moderately limited) slope (moderately limited)	0.47 0.36 0.31	Very limited percs slowly (very limited) wetness (very limited) slope (limited)	1.00 1.00 0.91
Scholten-----	Limited wetness (limited) too acid (moderately limited) droughty (slightly limited)	0.83 0.36 0.16	Limited wetness (limited) too acid (moderately limited) droughty (slightly limited)	0.83 0.36 0.16	Limited wetness (limited) too acid (moderately limited) slope (moderately limited)	0.83 0.36 0.31	Limited wetness (limited) too acid (moderately limited) slope (moderately limited)	0.83 0.36 0.31	Very limited wetness (very limited) slope (limited) percs slowly (moderately limited)	1.00 0.91 0.32

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73266: Hildebrecht----	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Limited slope (limited)	0.99	Limited slope (limited)	0.99	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00 1.00 1.00
73267: Yelton-----	Limited slope (limited) wetness (moderately limited) too acid (slightly limited)	0.76 0.58 0.30	Limited slope (limited) wetness (moderately limited) too acid (slightly limited)	0.76 0.58 0.30	Limited slope (limited) wetness (moderately limited) too acid (slightly limited)	0.99 0.58 0.30	Limited slope (limited) wetness (moderately limited) too acid (slightly limited)	0.99 0.58 0.30	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00 1.00 1.00
Scholten-----	Limited wetness (limited) too acid (limited) slope (limited)	0.83 0.76 0.76	Limited wetness (limited) too acid (limited) slope (limited)	0.83 0.76 0.76	Limited slope (limited) wetness (limited) too acid (limited)	0.99 0.83 0.76	Limited slope (limited) wetness (limited) too acid (limited)	0.99 0.83 0.76	Very limited slope (very limited) wetness (very limited) percs slowly (moderately limited)	1.00 1.00 0.32
73269: Brussels-----	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited percs slowly (very limited) slope (very limited) large surface stones (very limited)	1.00 1.00 1.00
Gasconade-----	Very limited slope (very limited) shallow to bedrock (very limited) droughty (very limited)	1.00 1.00 1.00	Very limited droughty (very limited) shallow to bedrock (very limited) slope (very limited)	1.00 1.00 1.00	Very limited droughty (very limited) slope (very limited) shallow to bedrock (very limited)	1.00 1.00 1.00	Very limited depth to bedrock (very limited) slope (very limited) large surface stones (very limited)	1.00 1.00 1.00	Very limited percs slowly (very limited) slope (very limited) depth to bedrock (very limited)	1.00 1.00 1.00
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73270:										
Wrengart-----	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Limited slope (limited)	0.99	Limited slope (limited)	0.99	Very limited percs slowly (very limited)	1.00
	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	slope (very limited)	1.00
	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (slightly limited)	0.13	wetness (very limited)	1.00
73343:										
Captina-----	Moderately limited wetness (moderately limited)	0.47	Moderately limited wetness (moderately limited)	0.47	Moderately limited wetness (moderately limited)	0.47	Moderately limited wetness (moderately limited)	0.47	Very limited percs slowly (very limited)	1.00
					slope (moderately limited)	0.31	slope (moderately limited)	0.31	wetness (very limited)	1.00
									slope (limited)	0.91
73344:										
Captina-----	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Limited slope (limited)	0.99	Limited slope (limited)	0.99	Very limited percs slowly (very limited)	1.00
	too acid (limited)	0.61	too acid (limited)	0.61	too acid (limited)	0.61	too acid (limited)	0.61	slope (very limited)	1.00
	wetness (moderately limited)	0.47	wetness (moderately limited)	0.47	wetness (moderately limited)	0.47	wetness (moderately limited)	0.47	wetness (very limited)	1.00
73345:										
Hildebrecht----	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited slope (moderately limited)	0.45	Moderately limited slope (moderately limited)	0.45	Very limited percs slowly (very limited)	1.00
	slope (slightly limited)	0.15	slope (slightly limited)	0.15	wetness (moderately limited)	0.36	wetness (moderately limited)	0.36	wetness (very limited)	1.00
	too acid (slightly limited)	0.12	too acid (slightly limited)	0.12	too acid (slightly limited)	0.12	too acid (slightly limited)	0.12	slope (very limited)	1.00
73346:										
Hildebrecht----	Moderately limited wetness (moderately limited)	0.36	Moderately limited wetness (moderately limited)	0.36	Moderately limited slope (moderately limited)	0.45	Moderately limited slope (moderately limited)	0.45	Very limited percs slowly (very limited)	1.00
	too acid (moderately limited)	0.36	too acid (moderately limited)	0.36	wetness (moderately limited)	0.36	wetness (moderately limited)	0.36	wetness (very limited)	1.00
	slope (slightly limited)	0.15	slope (slightly limited)	0.15	too acid (moderately limited)	0.36	too acid (moderately limited)	0.36	slope (very limited)	1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74644: Deible-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited) wetness (very limited)	1.00 1.00
74646: Cornwall-----	Limited percs slowly (limited) wetness (moderately limited)	0.99 0.36	Limited percs slowly (limited) wetness (moderately limited)	0.99 0.36	Limited percs slowly (limited) wetness (moderately limited) slope (moderately limited)	0.99 0.36 0.31	Limited percs slowly (limited) wetness (moderately limited) slope (moderately limited)	0.99 0.36 0.31	Very limited percs slowly (very limited) wetness (very limited) slope (limited)	1.00 1.00 0.91
74648: Aslinger-----	Limited percs slowly (limited) wetness (moderately limited) droughty (slightly limited)	0.61 0.44 0.01	Limited percs slowly (limited) wetness (moderately limited) droughty (slightly limited)	0.61 0.44 0.01	Limited percs slowly (limited) wetness (moderately limited) slope (moderately limited)	0.61 0.44 0.31	Limited percs slowly (limited) wetness (moderately limited) slope (moderately limited)	0.61 0.44 0.31	Very limited percs slowly (very limited) wetness (very limited) slope (limited)	1.00 1.00 0.91
74649: Aslinger-----	Limited percs slowly (limited) too acid (limited) slope (moderately limited)	0.61 0.61 0.45	Limited percs slowly (limited) too acid (limited) slope (moderately limited)	0.61 0.61 0.45	Limited slope (limited) percs slowly (limited) too acid (limited)	0.70 0.61 0.61	Limited slope (limited) percs slowly (limited) too acid (limited)	0.70 0.61 0.61	Very limited percs slowly (very limited) wetness (very limited) slope (very limited)	1.00 1.00 1.00
Waben-----	Not limited droughty (slightly limited)	0.01	Slightly limited droughty (slightly limited)	0.01	Slightly limited slope (slightly limited) droughty (slightly limited)	0.20 0.01	Slightly limited slope (slightly limited)	0.20	Limited slope (limited) percs slowly (moderately limited) too cobbly (slightly limited)	0.66 0.32 0.01

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74679: Higdon-----	Limited percs slowly (limited) wetness (moderately limited) flooding (slightly limited)	0.61 0.60 0.30	Limited percs slowly (limited) wetness (moderately limited) flooding (slightly limited)	0.61 0.60 0.30	Limited percs slowly (limited) wetness (moderately limited) flooding (slightly limited)	0.61 0.60 0.30	Limited percs slowly (limited) wetness (moderately limited) flooding (slightly limited)	0.61 0.60 0.30	Very limited percs slowly (very limited) wetness (very limited)	1.00 1.00
74680: Moniteau-----	Very limited wetness (very limited) percs slowly (limited) flooding (slightly limited)	1.00 0.61 0.30	Very limited wetness (very limited) percs slowly (limited) flooding (slightly limited)	1.00 0.61 0.30	Very limited wetness (very limited) percs slowly (limited) flooding (slightly limited)	1.00 0.61 0.30	Very limited wetness (very limited) percs slowly (limited) flooding (slightly limited)	1.00 0.61 0.30	Very limited percs slowly (very limited) wetness (very limited)	1.00 1.00
74685: Auxvasse-----	Very limited percs slowly (very limited) wetness (moderately limited)	1.00 0.60	Very limited percs slowly (very limited) wetness (moderately limited)	1.00 0.60	Very limited percs slowly (very limited) wetness (moderately limited) slope (slightly limited)	1.00 0.60 0.10	Very limited percs slowly (very limited) wetness (moderately limited) slope (slightly limited)	1.00 0.60 0.10	Very limited percs slowly (very limited) wetness (very limited) too acid (limited)	1.00 1.00 0.77
75379: Kaintuck-----	Very limited flooding (very limited) poor filter (very limited)	1.00 1.00	Very limited flooding (very limited) poor filter (very limited)	1.00 1.00	Very limited flooding (very limited) poor filter (very limited)	1.00 1.00	Very limited flooding (very limited) poor filter (very limited)	1.00 1.00	Very limited flooding (very limited) percs slowly (moderately limited)	1.00 0.32
75381: Bearthicket----	Slightly limited flooding (slightly limited)	0.30	Slightly limited flooding (slightly limited)	0.30	Slightly limited flooding (slightly limited)	0.30	Slightly limited flooding (slightly limited)	0.30	Very limited percs slowly (very limited)	1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value						
75395: Jamesfin-----	Limited flooding (limited)	0.90	Very limited percs slowly (very limited) wetness (limited) flooding (moderately limited)	1.00 0.61 0.60						
75408: Secesh-----	Slightly limited flooding (slightly limited)	0.30	Very limited percs slowly (very limited)	1.00						
75409: Relfe-----	Very limited poor filter (very limited) flooding (limited) droughty (limited)	1.00 0.90 0.84	Very limited poor filter (very limited) flooding (limited) droughty (limited)	1.00 0.90 0.84	Very limited poor filter (very limited) flooding (limited) droughty (limited)	1.00 0.90 0.84	Very limited poor filter (very limited) flooding (limited)	1.00 0.90	Limited flooding (moderately limited)	0.60
75411: Tilk-----	Very limited poor filter (very limited) flooding (slightly limited) too acid (slightly limited)	1.00 0.30 0.18	Very limited poor filter (very limited) flooding (slightly limited) too acid (slightly limited)	1.00 0.30 0.18	Very limited poor filter (very limited) flooding (slightly limited) too acid (slightly limited)	1.00 0.30 0.18	Very limited poor filter (very limited) flooding (slightly limited) too acid (slightly limited)	1.00 0.30 0.18	Slightly limited percs slowly (moderately limited) too acid (slightly limited)	0.32 0.01
75416: Gladden-----	Very limited poor filter (very limited) flooding (limited)	1.00 0.90	Very limited poor filter (very limited) flooding (limited)	1.00 0.90	Very limited poor filter (very limited) flooding (limited)	1.00 0.90	Very limited poor filter (very limited) flooding (limited)	1.00 0.90	Very limited percs slowly (very limited) flooding (moderately limited)	1.00 0.60

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75417:										
Relfe-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00
	droughty (very limited)	1.00	droughty (very limited)	1.00	droughty (very limited)	1.00	poor filter (very limited)	1.00	percs slowly (moderately limited)	0.50
	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00				
Sandbur-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00
									percs slowly (moderately limited)	0.32
75426:										
Gabriel-----	Limited percs slowly (limited)	0.61	Limited percs slowly (limited)	0.61	Limited percs slowly (limited)	0.61	Limited percs slowly (limited)	0.61	Very limited percs slowly (very limited)	1.00
	wetness (moderately limited)	0.60	wetness (moderately limited)	0.60	wetness (moderately limited)	0.60	wetness (moderately limited)	0.60	wetness (very limited)	1.00
	flooding (slightly limited)	0.30	flooding (slightly limited)	0.30	flooding (slightly limited)	0.30	flooding (slightly limited)	0.30		
75428:										
Tilk-----	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (moderately limited)	0.60
	droughty (moderately limited)	0.55	droughty (moderately limited)	0.55	droughty (moderately limited)	0.55	too acid (slightly limited)	0.24	percs slowly (moderately limited)	0.32
	too acid (slightly limited)	0.24	too acid (slightly limited)	0.24	too acid (slightly limited)	0.24	large stones (slightly limited)	0.01	too acid (slightly limited)	0.21
Cornwall-----	Limited wetness (limited)	0.68	Limited wetness (limited)	0.68	Limited slope (limited)	0.70	Limited slope (limited)	0.70	Very limited percs slowly (very limited)	1.00
	slope (moderately limited)	0.45	slope (moderately limited)	0.45	wetness (limited)	0.68	wetness (limited)	0.68	wetness (very limited)	1.00
	too acid (slightly limited)	0.24	too acid (slightly limited)	0.24	too acid (slightly limited)	0.24	too acid (slightly limited)	0.24	slope (very limited)	1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value						
75428: Poynor-----	Very limited poor filter (very limited) slope (limited) too acid (moderately limited)	1.00  0.76  0.48	Very limited poor filter (very limited) slope (limited) too acid (moderately limited)	1.00  0.76  0.48	Very limited poor filter (very limited) slope (limited) too acid (moderately limited)	1.00  0.99  0.48	Very limited poor filter (very limited) slope (limited) too acid (moderately limited)	1.00  0.99  0.48	Very limited slope (very limited) percs slowly (limited) too acid (slightly limited)	1.00  0.78  0.07
75429: Tilk-----	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (moderately limited) percs slowly (moderately limited)	0.60  0.32
Secesh-----	Moderately limited large stones (moderately limited) flooding (slightly limited)	0.45  0.30	Very limited percs slowly (very limited) too cobbly (limited)	1.00  0.92						
75430: Wideman-----	Very limited poor filter (very limited) flooding (limited)	1.00  0.90	Limited flooding (moderately limited) percs slowly (moderately limited)	0.60  0.32						
75451: Gladden-----	Very limited poor filter (very limited) flooding (limited)	1.00  0.90	Very limited percs slowly (very limited) flooding (moderately limited)	1.00  0.60						
75467: Wilbur-----	Very limited flooding (very limited) wetness (moderately limited)	1.00  0.52	Very limited percs slowly (very limited) wetness (very limited) flooding (very limited)	1.00  1.00  1.00						

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75468: Elsah-----	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited flooding (very limited)	1.00	Very limited percs slowly (very limited) flooding (very limited)	1.00
77000: Killarney-----	Very limited large surface stones (very limited) slope (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited large surface stones (very limited) slope (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited percs slowly (very limited) slope (very limited) wetness (very limited)	1.00 1.00 1.00
Frenchmill-----	Very limited large surface stones (very limited) slope (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited large surface stones (very limited) slope (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited slope (very limited) large surface stones (very limited) poor filter (very limited)	1.00 1.00 1.00	Very limited percs slowly (very limited) slope (very limited) large surface stones (very limited)	1.00 1.00 1.00
77002: Delassus-----	Moderately limited wetness (moderately limited) too acid (slightly limited)	0.39 0.18	Moderately limited wetness (moderately limited) too acid (slightly limited)	0.39 0.18	Moderately limited wetness (moderately limited) slope (moderately limited) too acid (slightly limited)	0.39 0.31 0.18	Moderately limited wetness (moderately limited) slope (moderately limited) too acid (slightly limited)	0.39 0.31 0.18	Very limited percs slowly (very limited) depth to bedrock (very limited) wetness (very limited)	1.00 1.00 1.00
77005: Hassler-----	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00 1.00 0.61	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00 1.00 0.61	Very limited slope (very limited) poor filter (very limited) percs slowly (limited)	1.00 1.00 0.61	Very limited slope (very limited) poor filter (very limited) depth to bedrock (limited)	1.00 1.00 0.84	Very limited percs slowly (very limited) slope (very limited) depth to bedrock (very limited)	1.00 1.00 1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
77005:										
Syenite-----	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00	Very limited depth to bedrock (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	poor filter (very limited)	1.00	poor filter (very limited)	1.00	poor filter (very limited)	1.00	slope (very limited)	1.00	slope (very limited)	1.00
	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	poor filter (very limited)	1.00	depth to bedrock (very limited)	1.00
77008:										
Hassler-----	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited poor filter (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	depth to bedrock (very limited)	1.00
	wetness (moderately limited)	0.40	wetness (moderately limited)	0.40	slope (moderately limited)	0.60	slope (moderately limited)	0.60	wetness (very limited)	1.00
80000:										
Calhoun-----	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99	Limited wetness (limited)	0.99	Very limited percs slowly (very limited)	1.00
	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	percs slowly (limited)	0.61	wetness (very limited)	1.00
80001:										
Oaklimeter-----	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Moderately limited wetness (moderately limited)	0.44	Very limited percs slowly (very limited)	1.00
									wetness (very limited)	1.00
									too acid (slightly limited)	0.21
82000:										
Dubbs-----	Slightly limited too acid (slightly limited)	0.06	Slightly limited too acid (slightly limited)	0.06	Slightly limited too acid (slightly limited)	0.06	Slightly limited too acid (slightly limited)	0.06	Very limited percs slowly (very limited)	1.00
									too acid (slightly limited)	0.01

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value						
82001: Amagon-----	Very limited wetness (very limited) ponded (wetness) (very limited) percs slowly (limited)	1.00 1.00 0.99	Very limited wetness (very limited) ponded (wetness) (very limited) percs slowly (limited)	1.00 1.00 0.99	Very limited ponded (wetness) (very limited) wetness (very limited) percs slowly (limited)	1.00 1.00 0.99	Very limited ponded (wetness) (very limited) wetness (very limited) percs slowly (limited)	1.00 1.00 0.99	Very limited percs slowly (very limited) ponded (wetness) (very limited) wetness (very limited)	1.00 1.00 1.00
82002: Forestdale----	Very limited wetness (very limited) ponded (wetness) (very limited) percs slowly (very limited)	1.00 1.00 1.00	Very limited wetness (very limited) percs slowly (very limited) ponded (wetness) (very limited)	1.00 1.00 1.00	Very limited percs slowly (very limited) ponded (wetness) (very limited) wetness (very limited)	1.00 1.00 1.00	Very limited percs slowly (very limited) ponded (wetness) (very limited) wetness (very limited)	1.00 1.00 1.00	Very limited percs slowly (very limited) ponded (wetness) (very limited) wetness (very limited)	1.00 1.00 1.00
82005: Malden-----	Very limited poor filter (very limited) droughty (limited)	1.00 0.70	Very limited poor filter (very limited) droughty (limited)	1.00 0.70	Very limited poor filter (very limited) droughty (limited)	1.00 0.70	Very limited poor filter (very limited)	1.00	Unlimited	
82006: Bosket-----	Moderately limited too acid (moderately limited)	0.36	Very limited percs slowly (very limited) slope (slightly limited)	1.00 0.08						
82007: Bosket-----	Limited flooding (limited)	0.90	Very limited percs slowly (very limited) flooding (moderately limited) too acid (slightly limited)	1.00 0.60 0.14						

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value						
82009: Forestdale-----	Very limited wetness (very limited) percs slowly (very limited)	1.00  1.00	Very limited wetness (very limited) percs slowly (very limited)	1.00  1.00	Very limited percs slowly (very limited) wetness (very limited)	1.00  1.00	Very limited percs slowly (very limited) wetness (very limited)	1.00  1.00	Very limited percs slowly (very limited) wetness (very limited)	1.00  1.00
82010: Amagon-----	Very limited wetness (very limited) percs slowly (limited)	1.00  0.99	Very limited percs slowly (very limited) wetness (very limited) too acid (slightly limited)	1.00  1.00  0.01						
82011: Crowley-----	Very limited percs slowly (very limited) poor filter (very limited) wetness (limited)	1.00  1.00  0.99	Very limited percs slowly (very limited) poor filter (very limited) wetness (limited)	1.00  1.00  0.99	Very limited percs slowly (very limited) poor filter (very limited) wetness (limited)	1.00  1.00  0.99	Very limited percs slowly (very limited) poor filter (very limited) wetness (limited)	1.00  1.00  0.99	Very limited percs slowly (very limited) wetness (very limited) too acid (slightly limited)	1.00  1.00  0.21
86000: Dubbs-----	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Limited flooding (limited)	0.90	Very limited percs slowly (very limited) flooding (moderately limited) too acid (slightly limited)	1.00  0.60  0.01
86001: Calhoun-----	Limited wetness (limited) flooding (limited) percs slowly (limited)	0.99  0.90  0.61	Very limited percs slowly (very limited) wetness (very limited) flooding (moderately limited)	1.00  1.00  0.60						

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86002: Falaya-----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	wetness (very limited)	1.00
									flooding (moderately limited)	0.60
86003: Amagon-----	Limited percs slowly (limited)	0.99	Limited percs slowly (limited)	0.99	Limited percs slowly (limited)	0.99	Limited percs slowly (limited)	0.99	Very limited percs slowly (very limited)	1.00
	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	wetness (very limited)	1.00
	wetness (moderately limited)	0.60	wetness (moderately limited)	0.60	wetness (moderately limited)	0.60	wetness (moderately limited)	0.60	flooding (moderately limited)	0.60
86004: Forestdale----	Very limited wetness (very limited)	1.00	Very limited wetness (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Very limited percs slowly (very limited)	1.00	Very limited percs slowly (very limited)	1.00
	percs slowly (very limited)	1.00	percs slowly (very limited)	1.00	wetness (very limited)	1.00	wetness (very limited)	1.00	wetness (very limited)	1.00
	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	flooding (limited)	0.90	flooding (moderately limited)	0.60
90000: Memphis-----	Not limited		Not limited		Moderately limited slope (moderately limited)	0.31	Moderately limited slope (moderately limited)	0.31	Very limited percs slowly (very limited)	1.00
									slope (limited)	0.91
90001: Memphis-----	Limited slope (limited)	0.76	Limited slope (limited)	0.76	Limited slope (limited)	0.99	Limited slope (limited)	0.99	Very limited percs slowly (very limited)	1.00
	too acid (slightly limited)	0.12	too acid (slightly limited)	0.12	too acid (slightly limited)	0.12	too acid (slightly limited)	0.12	slope (very limited)	1.00

Table 16.--Waste Management--Continued

Map symbol and soil name	Land application of manure and food-processing waste		Land application of municipal sewage sludge		Disposal of wastewater by irrigation		Treatment of wastewater by slow rate process		Treatment of wastewater by rapid infiltration process	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
99001: Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99003: Miscellaneous water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99007: Dam-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99015: Udorthents----	Not rated		Not rated		Not rated		Not rated		Not rated	
Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 17.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated. For an explanation of the abbreviations in the USDA texture column, see "Texture, soil" in the Glossary.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage Passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
60033:												
Wrengart-----	0-5	SIL	CL, CL-ML	A-4	0	0	100	100	90-100	80-100	18-30	5-10
	5-11	SICL, SIL	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	85-100	80-100	25-40	5-15
	11-34	SIL, SICL	CL	A-4, A-6	0	0	95-100	90-100	85-100	80-100	25-40	8-20
	34-57	GR-SICL, SICL	CL	A-4, A-6	0	0-5	75-100	70-100	65-95	65-95	25-40	8-20
	57-72	GRX-SIL, GRV-SICL	GC	A-2, A-4, A-6	0-5	0-20	25-55	20-50	20-45	15-40	25-40	8-15
60046:												
Minnith-----	0-5	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	20-35	5-15
	5-35	SICL, SIL	CL	A-6, A-7	0	0	100	100	90-100	70-95	25-45	5-20
	35-80	L	CL	A-6, A-4	0	0-5	95-100	90-100	80-95	60-75	20-35	5-15
60053:												
Winfield-----	0-6	SIL	CL, CL-ML	A-4	0	0	100	100	95-100	90-100	20-30	5-10
	6-20	SICL, SIL	CL	A-6, A-4	0	0	100	100	95-100	90-100	30-40	10-20
	20-26	SIL, SICL	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	30-45	15-25
	26-52	SIL	CL	A-6, A-4	0	0	100	100	95-100	90-100	25-35	10-15
	52-60	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
60054:												
Minnith-----	0-5	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	20-35	5-15
	5-35	SIL, SICL	CL	A-6, A-7	0	0	100	100	90-100	70-95	25-45	5-20
	35-59	L, CL	CL-ML, CL	A-6, A-4	0	0-5	95-100	90-100	80-95	60-75	20-35	5-15
	59-80	SCL, L, CL	CL, SC	A-6	0	0-5	95-100	90-100	60-90	40-80	25-40	10-20
60055:												
Winfield-----	0-9	SIL	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
	9-13	SIL, SICL	CL	A-6	0	0	100	100	95-100	90-100	30-40	15-20
	13-62	SIL, SICL	CL	A-6, A-7	0	0	100	100	95-100	95-100	35-45	15-25
	62-80	SIL	CL	A-6	0	0	100	100	95-100	90-100	30-35	10-15
66000:												
Moniteau-----	0-10	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	15-35	5-15
	10-18	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	15-35	5-15
	18-34	SIL, SICL	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	15-45	5-25
	34-75	SIL, SICL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	15-40	5-15
66054:												
Wakeland-----	0-6	SIL	ML, CL, CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	NP-10
	6-24	SIL	CL-ML, CL, ML	A-4	0	0	100	100	90-100	70-90	20-30	NP-10
	24-58	SIL	ML, CL-ML, CL	A-4	0	0	100	100	90-100	70-90	20-30	NP-10
	58-80	SIL	ML, CL-ML, CL	A-4	0	0	100	100	90-100	70-90	20-30	NP-10
66055:												
Haymond-----	0-5	SIL	ML, CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-30	NP-10
	5-51	SIL	ML, CL, CL-ML	A-4	0	0	100	100	90-100	80-100	20-30	NP-10
	51-80	FSL, L, SIL	CL, ML, SC, SM	A-4, A-6	0	0	95-100	90-100	65-100	35-95	15-35	NP-15
73055:												
Alred-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-7	GRV-SIL	GC-GM, GC, GM	A-1-b, A-2-4	0-7	0-25	35-50	25-50	25-50	20-35	15-25	NP-10
	7-11	GR-SIL, GRV-SIL	GC, GM	A-2-4, A-4	0-7	0-25	50-75	35-70	35-65	30-50	15-25	NP-10
	11-30	GRV-L, GRX-L, GRV-SIL, GRX-SIL	GP-GC, GC	A-2-6, A-1-a	0-10	0-40	25-50	15-50	15-50	10-35	20-35	5-15
	30-80	C, GR-C, CB-C	CH	A-7-6, A-7-5	0-7	0-18	80-100	70-100	65-95	60-95	50-80	25-45

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
73055: Rueter-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-4	GRV-SIL	GC-GM, GM, GC	A-1-b, A-2-4	0-7	0-25	35-50	25-50	25-50	20-35	15-25	NP-10
	4-17	GR-SIL, GRV-SIL	CL-ML, GM, GC	A-2-4, A-4	0-7	0-25	50-75	35-70	35-65	30-50	15-25	NP-10
	17-32	GRV-L, CBV-SIL, GRV-SIL, GRX-L	GP-GC, GC	A-2-4, A-2-6, A-1-a	0-10	0-40	25-50	15-50	15-50	10-35	20-35	5-15
	32-43	GRV-CL, GRV- SICL, CBV-SIC, GRV-SIC, GRV-C	GC	A-7-6, A-2-6, A-2-7	0-10	0-40	35-50	25-50	25-50	20-40	35-50	15-25
	43-71	C, GR-C, CB-C, GRV-C, CBV-C	GC, CH	A-2-7, A-7-5	0-10	0-40	35-95	25-90	25-90	25-85	60-80	30-45
73100: Wrengart-----	0-8	SIL	CL, CL-ML	A-6, A-4	0	0	100	100	90-100	70-90	20-40	5-15
	8-36	SICL, SIL	CL	A-6	0	0	100	95-100	85-100	65-90	30-45	10-20
	36-61	SICL, SIL, GR- SICL, GR-SIL	CL	A-6	0	0-5	55-100	50-100	45-100	35-90	25-40	10-20
	61-80	GR-SIC, SIC, GR-C	CH, CL	A-7, A-7-6	0	0-15	60-95	55-90	50-90	40-85	45-70	25-45
73101: Wrengart-----	0-8	SIL	CL, CL-ML	A-6, A-4	0	0	100	100	90-100	70-90	20-40	5-15
	8-36	SICL, SIL	CL	A-6	0	0	100	95-100	85-100	65-90	30-45	10-20
	36-61	SICL, SIL, GR- SICL, GR-SIL, GRV-SIL	CL	A-6	0	0-5	50-100	45-100	45-100	35-90	25-40	10-20
	61-80	GR-SIC, SIC, GR-C, GRV-C	CH, CL	A-7, A-7-6	0	0-15	50-95	45-90	45-90	40-85	45-70	25-45
73139: Poynor-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-4	GR-SIL	GC-GM, GM, SC	A-1-b, A-2-4	0-2	0-15	60-80	50-75	25-50	20-35	15-25	NP-10
	4-13	GRV-SIL, GR-SIL	GC-GM, GM, CL	A-2-4, A-4	0-7	0-25	50-75	35-70	35-65	30-55	15-25	NP-10
	13-24	GRV-SICL, GRX- SIL	GC	A-2-6, A-6, A-2-4	0-10	0-40	30-50	20-50	20-50	15-45	25-35	10-15
	24-80	C, CB-C, GR-C	CH	A-7-5, A-7-6	0-12	0-15	80-100	70-100	65-95	60-95	50-80	25-45
Clarksville----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-5	GR-SIL	GM, SC-SM, SC	A-1-b, A-2-4, A-4	0-2	0-15	60-80	50-75	25-50	20-40	15-25	NP-10
	5-8	GR-SIL, GRV-SIL	GM, GC	A-1-b, A-4	0-7	0-25	50-75	35-70	30-65	25-50	15-25	NP-10
	8-18	GR-L, GR-SIL, GRV-L, GRV-SIL	GC-GM, GC	A-2-6, A-1-b, A-6	0-7	0-25	50-75	35-70	30-65	25-50	20-35	5-15
	18-42	GRV-L, GRV-SIL, GRV-CL, GRV- SICL, GRX-CL	GC, GP-GC, GC-GM	A-2-6, A-7-6	0-10	0-40	25-50	15-50	10-45	10-40	30-45	15-25
	42-65	C, GR-C, GRV-C	CL, CH, GC	A-2-6, A-7-6	0-7	0-20	30-95	25-90	25-85	25-80	40-60	20-30
Scholten-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-3	GR-SIL	SC, GC-GM, GM	A-1-b, A-4	0-2	0-15	60-80	50-75	45-50	20-40	15-25	NP-10
	3-8	GRV-SIL, GR-SIL	CL-ML, GM, GC	A-2-4, A-4	0-7	0-25	50-75	35-70	35-65	30-50	15-25	NP-10
	8-17	GRV-SICL, GRV- SIL	GC-GM, GC	A-1-b, A-6	0-7	0-25	35-50	25-50	25-50	20-45	20-40	5-20
	17-41	GRV-SICL, CBV- SIL, CBV-SICL, GRV-SIL, GRX- SIL	GC, GP-GC	A-2-4, A-2-6	0-7	0-25	25-50	15-50	15-50	10-35	25-35	10-15
	41-80	GR-SICL, GRV- SICL, GR-C, GRV-C, GR-SIC	CH, GC	A-2-6, A-7-6	0-7	0-25	45-80	35-75	35-75	30-70	40-70	20-40



Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
73151:												
Caneyville-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-4	SIL	CL, CL-ML	A-4, A-6	0	0-2	90-100	85-100	75-100	60-95	20-35	5-15
	4-11	SIC, C, SICL	CL, CH	A-7-6, A-7-5, A-6	0	0-2	95-100	85-100	75-100	65-100	40-70	20-35
	11-31	SIC, C, SICL	CL, CH	A-7-6, A-7-5, A-6	0	0-2	95-100	85-100	75-100	65-100	40-70	20-35
	31-80	BR	---	---	---	---	---	---	---	---	---	---
Gasconade-----	0-3	SIC	CL, CH	A-7-6, A-4	0-5	0-10	90-95	85-90	80-85	75-80	35-60	10-30
	3-16	CBV-CL, GRV-C, GRV-SIC, CBV- SICL	GC	A-7-6, A-2-6, A-7-5	0-25	15-50	35-60	25-50	25-50	25-45	40-70	20-35
	16-80	BR	---	---	---	---	---	---	---	---	---	---
Bucklick-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-6	SIL	CL	A-4, A-6	0	0-2	90-100	85-100	75-100	60-95	20-35	5-15
	6-31	SICL, SIC, C	CH, CL	A-7-6, A-4	0	0	90-100	85-100	75-100	65-100	30-60	10-30
	31-47	SIC, C, GR-C	SC, CL, CH	A-7-6, A-6	0-7	0-7	50-100	50-100	50-100	45-100	40-70	20-40
	47-80	BR	---	---	---	---	---	---	---	---	---	---
73156:												
Alred-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-6	GRV-SIL	GC-GM, GC	A-1-b, A-2-4	0-7	0-25	35-50	25-50	25-50	20-35	15-25	NP-10
	6-11	GR-SIL, GRV-SIL	GC-GM, GC	A-4, A-2-4	0-7	0-25	50-75	35-70	35-65	30-50	15-25	NP-10
	11-31	GRV-L, GRX-L, GRV-SIL, GRX- SIL	GC, GC-GM	A-2-6, A-1-a	0-10	0-40	25-50	15-50	15-50	10-35	20-35	5-15
	31-79	C, GR-C, CB-C	CH	A-7-6, A-7-5	0-7	0-15	80-100	70-100	65-95	60-95	50-80	25-45
Gepp-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-6	GRV-SIL	GC-GM, GC	A-1-b, A-2-4	0-7	0-25	35-50	25-50	25-50	20-35	15-25	NP-10
	6-12	GR-CL, GR-SICL, SIC, C	SC, CL, CH	A-6, A-7-6, A-7-5	0	0-7	60-100	50-100	45-100	40-95	35-65	15-30
	12-67	C	CH	A-7-5, A-7-6	0-2	0-10	85-100	75-100	70-100	65-95	60-80	30-45
73157:												
Captina-----	0-5	SIL	CL-ML, CL	A-4	0	0	95-100	95-100	90-100	75-95	15-25	NP-10
	5-25	SIL, SICL	CL	A-6, A-4	0	0	90-100	90-100	85-100	80-95	30-40	10-20
	25-31	GRV-SICL, SIL, SICL, GRV-SIL, GR-SIL	GC, SC, CL	A-2-6, A-6, A-2-4	0	0-25	35-100	30-100	30-100	25-95	30-40	10-20
	31-78	GR-C, CB-CL, CBV-C, GRV-C, GR-SIC, GRV- SIC	GC, SC, CL, CH	A-7-5, A-2-6, A-7-6	0	0-25	45-80	35-75	35-75	30-70	40-70	20-35
73223:												
Coulstone-----	0-1	SPM	---	---	0-55	0-60	---	---	---	---	---	---
	1-6	CBX-SL	GP-GM, GC-GM, GM	A-1-b, A-2-4, A-1-a	0-55	0-55	23-70	20-55	15-45	5-35	10-20	NP-5
	6-29	CBX-SL, GRX-SL, CBX-GRX-L	GP-GC, GC, GC-GM, GM	A-1-a, A-2-4, A-1-b	0-55	0-55	25-70	25-50	15-45	5-35	10-30	NP-10
	29-42	STX-SL, CBX-L, CBX-C	GC, GC-GM, GM	A-2-4, A-7-6, A-1-a	0-55	0-45	39-65	20-50	15-45	5-40	20-52	5-23
	42-80	STX-CL, GRV-C, CBX-SCL, GRX- SL	GC, GC-GM, GM	A-2-6, A-7-6, A-2-4	0-75	0-37	30-60	15-50	10-45	5-40	25-52	7-23

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
73223: Bender-----	0-1	SPM	---	---	0-18	0-60	---	---	---	---	---	---
	1-5	CBX-SL	GC-GM, GM	A-1-b, A-1-a	0-20	0-55	30-60	15-50	10-40	5-25	5-10	NP-5
	5-21	CBX-SL, CBX- FSL, GRV-L	GM, SM	A-1-b, A-1-a, A-2-4	0-30	0-55	30-60	15-50	10-40	5-30	5-20	NP-5
	21-31	STX-SL, GRV- FSL, GRX-COSL, GRX-L	GP-GC, GC, GC-GM, GM	A-2-4, A-1-a	0-90	0-90	30-60	15-50	10-40	5-20	5-35	NP-10
	31-80	BR	---	---	---	---	---	---	---	---	---	---
73264: Alred-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-3	GR-SIL	CL-ML, CL	A-4	0-2	0-15	55-80	50-75	50-70	40-60	15-25	NP-10
	3-8	GR-SIL, GRV-SIL	CL, SC-SM, SC	A-2-4, A-4	0-7	0-25	50-80	35-75	35-70	30-60	15-25	NP-10
	8-22	GRV-SICL, GRV- SIL	GC-GM, GC	A-6, A-2-4	0-7	0-25	30-60	25-55	20-50	15-49	20-35	10-15
	22-80	C, GR-C, CB-C	CH	A-7-6, A-7-5	0-2	0-15	75-100	65-100	60-95	55-90	50-80	25-45
Wrengart-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-10	SIL	CL, CL-ML	A-4	0	0	100	95-100	90-100	75-90	15-30	4-10
	10-30	SICL, SIL	CL	A-4, A-6	0	0	100	95-100	85-95	75-95	25-40	8-15
	30-53	SIL, SICL, L	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-95	65-95	25-40	5-15
	53-80	GRV-SICL, C, GRV-SIC	CH, GC	A-7-6, A-2-7, A-2-6	0-5	0-10	25-90	20-90	20-90	15-85	25-60	15-40
73265: Captina-----	0-8	SIL	ML, CL-ML, CL	A-4	0	0	95-100	95-100	90-100	75-95	15-25	NP-10
	8-26	SIL, SICL	CL	A-6, A-4	0	0	95-100	90-100	85-100	80-95	30-40	10-20
	26-43	GRV-SICL, GR- SIL, SIL, GRV- SIL, GRX-SIL, SICL	GC, SC, CL	A-2-6, A-6, A-2-4	0	0-30	25-100	25-95	20-90	15-90	30-40	10-20
	43-80	GR-CL, CB-C, CBV-C, GRV-C, GR-SIC, GRV- SIC	GC, SC, CL, CH	A-7-6, A-2-6, A-2-7	0	0-30	30-80	30-75	30-75	25-70	40-70	20-45
Scholten-----	0-2	GR-SIL	CL, GC-GM, CL-ML	A-4	0	0-5	60-80	55-75	50-70	40-70	15-25	5-10
	2-7	GR-SIL	GC-GM, CL, CL-ML	A-4	0	0-5	55-80	50-75	50-70	45-70	15-25	5-10
	7-16	GRV-SIL, GRV- SICL	GC	A-2-4, A-6, A-7-6	0-2	0-5	35-55	25-50	25-50	25-50	30-45	10-25
	16-40	GRV-SIL, CB- SIL, CBV-SICL, CBV-SIL, GR- SICL, GRV- SICL, GRX-SIL	GC	A-2-6, A-6, A-2-4	0	0-30	20-55	15-50	15-45	15-40	25-35	10-15
	40-80	GR-SICL, GRV- SICL, C, GR-C, GRV-C, STX-C, SIC, GR-SIC	CL, GC	A-2-7, A-7-6, A-2-6	0-50	0-20	20-80	15-75	15-75	15-75	40-50	20-40
73266: Hildebrecht----	0-4	SIL	CL, CL-ML	A-4	0	0	100	95-100	90-100	75-90	15-30	4-10
	4-36	SICL, SIL	CL	A-4, A-6	0	0	100	95-100	85-95	75-95	25-40	8-15
	36-39	SIL	CL-ML, CL	A-4, A-6	0	0-5	90-100	85-100	80-90	75-90	20-35	5-15
	39-62	GRX-SIL, GRV- SICL	GC-GM, GC	A-2-4, A-4, A-1-a	0	0-5	30-55	25-50	15-45	15-40	20-40	5-10
	62-80	GRV-SIC, GR-C, GRV-SICL	CH, GC	A-7-6, A-2-7, A-2-6	0-5	0-10	25-85	25-75	15-65	15-65	25-60	15-40

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
73267:												
Yelton-----	0-5	SIL	CL, CL-ML	A-4	0	0-5	95-100	90-100	75-85	60-75	15-25	4-10
	5-11	SIL, GR-SIL	CL, CL-ML	A-4	0	0-5	50-95	50-90	45-85	40-75	15-25	4-10
	11-29	GR-L, CL, GR-SICL, GR-SIL, SICL	CL, SC	A-6, A-4	0	0-5	70-95	65-90	55-85	45-75	30-40	10-20
	29-42	GRV-L, GRX-SIL	GC, SC	A-1-a, A-2-4, A-6	0-5	0-10	30-75	25-50	20-45	15-40	20-35	5-15
	42-80	SCL, CBV-SCL, GRV-CL, CL, GR-C	GC	A-2-6, A-2-4, A-7-6	0-5	0-55	35-90	30-85	20-75	15-60	25-60	10-30
Scholten-----	0-2	GR-SIL	SC-SM, CL, CL-ML	A-4	0-2	0-15	60-80	50-75	50-70	50-65	15-25	5-10
	2-7	GR-SIL	SC-SM, CL, CL-ML	A-4	0-2	0-15	60-80	50-75	50-70	50-65	15-25	5-10
	7-16	GRV-SIL, GRV-SICL	GC	A-2-4, A-6	0-7	0-15	35-55	25-50	25-50	20-45	25-40	10-25
	16-40	CB-SIL, GRV-SIL, GRV-SICL, GRX-SIL, GR-SICL, CBV-SIL, CBV-SICL	GC	A-2-6, A-2-4	0-7	0-25	25-55	20-50	15-45	10-35	25-35	10-15
	40-80	GR-SCL, GRV-SCL, CBV-SCL, GR-C, GRV-C, GR-CL	CL, GC	A-7-6, A-2-6	0-7	0-30	45-85	35-80	35-75	30-70	40-50	20-40
73269:												
Brussels-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-10	GR-SICL	CL, GC	A-6, A-7-6	0-5	0-15	50-85	50-75	50-75	45-70	30-45	15-25
	10-49	GRV-SICL, GRV-SIC, GRV-C	GC	A-2-6, A-7-6	0-5	0-15	25-60	25-50	25-50	25-45	40-50	20-30
	49-70	GR-SICL, GR-SIC, C	CL, GC	A-7-6, A-4	0-5	0-15	50-95	50-90	50-85	45-80	30-45	10-25
Gasconade-----	0-9	CB-C	CH, CL	A-7-6, A-7-5, A-6	0-10	7-20	70-90	60-85	50-80	50-80	40-70	20-35
	9-14	CBV-CL, CBV-C, FLX-SIC	GC	A-2-6, A-7-6, A-7-5	0-20	20-40	35-65	30-60	30-60	25-50	40-70	20-35
	14-80	BR	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-80	BR	---	---	---	---	---	---	---	---	---	---
73270:												
Wrengart-----	0-6	SIL	CL, CL-ML	A-4	0	0	100	100	90-100	75-90	18-30	4-10
	6-26	SICL, SIL	CL	A-4, A-6	0	0	100	95-100	85-95	75-95	25-40	8-15
	26-45	SIL, SICL	CL	A-4, A-6	0	0	100	95-100	85-95	75-95	25-40	8-15
	45-60	GRV-SIL, GRX-CL, GRV-SICL	GC	A-2-4, A-2-6, A-6	0-5	0-10	25-55	20-50	20-50	15-50	25-40	8-15
	60-80	GR-SIC, SIC, GR-C	CH, CL, GC	A-7-6	0-5	0-15	55-90	50-90	45-90	40-90	44-70	20-40

Table 17.--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											
73343: Captina-----	0-4	SIL	CL-ML, CL	A-4	0	0	95-100	95-100	90-100	75-95	20-35	5-15
	4-20	SIL, SICL	CL	A-6	0	0	90-100	90-100	85-100	80-95	30-40	10-20
	20-28	GR-SIL, GRV- SICL, SIL, GRV-SIL, GRX- SIL, SICL	GC, SC, CL	A-2, A-6	0	0-25	30-100	20-100	20-100	15-95	30-40	10-20
	28-75	GR-SIC, GRV- SIC, GR-C, CB- C, CBV-C, GRV- C	GC, SC, CL, CH	A-2, A-7	0	0-25	45-80	35-75	35-75	30-75	40-70	20-35
73344: Captina-----	0-7	SIL	CL-ML, CL	A-4	0	0	97-100	95-100	85-100	75-95	20-24	5-8
	7-24	SIL, SICL	CL	A-6, A-4	0	0	91-100	90-100	85-100	75-95	26-40	9-19
	24-47	SIL, GR-SIL, GRV-SIL, GRX- SIL, SICL, GR- SICL, GRV-SICL	GC, CL	A-2, A-6	0	0-30	23-100	15-100	15-95	15-95	29-41	11-19
	47-75	GRV-CL, GR-C, CB-C, CBV-C, GRV-C, GRX-C, GR-SIC, GRV- SIC	GC, CL, CH	A-2, A-6, A-7	0	0-20	25-100	20-75	15-70	10-65	35-66	15-37
73345: Hildebrecht-----	0-11	SIL	CL, CL-ML	A-4	0	0	100	100	95-100	80-100	20-35	5-15
	11-27	SIL, SICL	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-20
	27-44	SIL, GRV-SIL, GRV-CL	CL, GC, SC, SC-SM	A-2, A-6	0	0-10	60-95	30-80	30-75	25-70	30-40	10-20
	44-60	GR-SIC, GRV-C, C	CH, CL, GC, SC	A-2-7, A-7	0	0-10	60-100	30-100	30-100	25-95	45-75	20-40
73346: Hildebrecht-----	0-6	SIL	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	80-100	20-35	5-15
	6-31	SICL	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-20
	31-52	GRV-SIL, GR- SIL, GRV-CL, GRV-SICL	CL, GC, SC	A-2, A-6	0	0-10	60-95	30-75	30-75	25-70	30-40	10-20
	52-80	C, GR-SIC, GRV- C	CH, CL, GC, SC	A-2-7, A-7	0-10	0-10	60-100	30-100	30-100	25-95	45-75	20-40
74644: Deible-----	0-7	SIL	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	80-100	75-95	20-35	5-15
	7-16	SIL	CL, CL-ML	A-6, A-4	0	0	85-100	75-100	65-100	65-95	20-35	5-15
	16-40	SICL, SIC	CL, CH	A-7-6, A-6	0	0	100	95-100	90-100	80-95	40-60	20-30
	40-65	SIL, CL, SICL, GR-CL	CL	A-7-6, A-6	0	0	85-100	75-100	70-100	60-95	30-45	15-25
74646: Cornwall-----	0-5	SIL	CL, CL-ML	A-4	0	0	85-100	80-100	80-100	75-95	20-30	5-10
	5-17	SIL, SICL	CL	A-6, A-4	0	0	85-100	80-100	80-100	75-95	30-40	10-20
	17-39	SIL, SICL, GR- SIL, GRV-SIL	CL, SC, GC	A-6, A-2-4, A-4	0-2	0-15	30-100	25-100	25-100	20-95	30-40	10-20
	39-60	GRV-SICL, GR- SICL, SICL, GRV-C, GRX-CL	CL, GC, SC	A-7-6, A-2-4, A-6	0-2	0-15	30-90	25-85	20-85	15-80	35-50	10-25

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
<b>74648:</b>												
Aslinger-----	0-4	SIL	CL, CL-ML	A-4	0	0	95-100	90-100	80-95	70-90	20-30	5-10
	4-8	SIL	CL, CL-ML	A-4	0	0	95-100	90-100	80-95	60-90	20-30	5-10
	8-21	SIL, SICL	CL	A-6, A-4	0	0	80-100	75-100	70-100	60-95	25-40	10-20
	21-29	GR-L, GR-SIL, GRV-L, GRV- SIL, GRX-L, GRX-SIL	GC-GM, GC, CL	A-2-6, A-6, A-1-a	0-2	0-15	30-85	25-75	20-70	15-65	20-35	5-15
	29-55	GR-L, GR-CL, GRV-L, GRV-CL	GC, CL	A-2-6, A-6, A-2-4	0-2	0-15	35-80	25-75	25-70	20-65	25-40	10-25
	55-70	GR-SICL, GR-C, GRV-CL, GRX-C, CBX-C	GC	A-2-7, A-2-6, A-7-6	0-10	0-40	35-65	25-60	25-55	20-50	35-60	15-35
<b>74649:</b>												
Aslinger-----	0-3	SIL	CL, CL-ML	A-4	0	0	95-100	90-100	80-95	70-90	20-30	5-10
	3-8	SIL	CL, CL-ML	A-4	0	0	95-100	90-100	80-95	60-90	20-30	5-10
	8-20	SIL, SICL	CL	A-6, A-4	0	0	80-100	75-100	70-100	60-95	25-40	10-20
	20-39	GR-L, GR-SIL, GRV-L, GRV- SIL, GRX-L, GRX-SIL	GC, SC, CL	A-1-a, A-6	0-2	0-15	30-85	25-75	20-70	15-65	20-35	5-15
	39-52	GR-L, GR-CL, GRV-L, GRV-CL	GC, SC, CL	A-6, A-2-4	0-2	0-15	35-80	25-75	25-70	20-65	25-40	10-25
	52-80	GR-SICL, GR-C, GRV-CL, GRX-C, CBX-C	GC, SC, CH	A-2-6, A-7-6	0-10	0-40	35-65	25-60	25-55	20-50	35-60	15-35
<b>Waben-----</b>	0-6	GR-SIL	GC-GM, CL-ML	A-4	0-5	0-10	60-90	50-75	50-70	50-65	15-25	NP-10
	6-15	GR-SIL, GRV-L, GRV-SIL	GC-GM, GC	A-1-b, A-2-4, A-4	0-5	0-25	30-80	25-50	25-50	20-40	20-30	5-10
	15-54	GRV-L, GRV-SIL	GC, GC-GM	A-2-6, A-6, A-1-b	0-5	0-40	30-60	25-50	25-50	20-40	25-35	5-15
	54-80	GRV-SCL, GRV- CL, GRX-CL	GC, GC-GM	A-2-7, A-2-4, A-7-6	0-5	0-40	30-60	25-50	25-50	20-40	30-45	10-25
<b>74679:</b>												
Higdon-----	0-7	SIL	ML, CL, CL-ML	A-4	0	0	95-100	95-100	90-100	70-90	20-30	NP-10
	7-13	SIL	ML, CL, CL-ML	A-4	0	0	95-100	95-100	90-100	70-95	20-30	NP-10
	13-43	SIL, SICL	CL	A-6, A-4	0	0	95-100	95-100	85-95	70-95	30-40	10-20
	43-80	L, SIL, CL, SICL	CL	A-6, A-4	0	0	80-100	75-100	70-95	65-95	25-40	10-20
<b>74680:</b>												
Moniteau-----	0-6	SIL	ML, CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	85-100	15-35	NP-15
	6-15	SIL	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	85-100	25-35	5-15
	15-52	SICL, SIL	CL	A-6, A-7-6	0	0	100	95-100	95-100	80-100	30-45	15-25
	52-78	GR-L, SIL, SICL	CL, CL-ML	A-4, A-6	0	0	65-100	60-100	60-100	55-100	15-40	5-15
<b>74685:</b>												
Auxvasse-----	0-6	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	20-33	5-14
	6-17	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	23-31	7-13
	17-51	SIC, SICL	CL, CH	A-6, A-7	0	0	100	100	90-100	80-100	30-55	15-30
	51-80	SICL, SIL	CL	A-7, A-6	0	0	100	95-100	90-100	80-100	30-45	14-25
<b>75379:</b>												
Kaintuck-----	0-9	L	CL-ML, ML, SC-SM	A-4	0	0	95-100	85-100	75-95	60-75	0-20	NP-5
	9-36	SL, FSL, L, SIL	CL-ML, ML, SM	A-4	0	0	95-100	50-100	50-90	40-55	0-20	NP-5
	36-80	COS, LS, LFS, SL, FSL	SM, SC-SM	A-2-4, A-1-b	0	0	95-100	85-100	50-60	20-25	0-20	NP-5

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
<b>75381:</b>												
Bearthicket-----	0-6	SIL	CL-ML, CL	A-4	0	0	100	95-100	95-100	75-100	20-30	5-10
	6-19	SIL	CL-ML, CL	A-4	0	0	100	95-100	95-100	75-100	20-30	5-10
	19-45	SICL, SIL	CL	A-6, A-4	0	0	95-100	95-100	90-100	70-100	25-35	10-15
	45-64	L, SIL	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	90-100	65-100	20-35	5-15
	64-80	COSL, FSL, L, SL, GR-SL, GR- FSL, GRV-SL	GC-GM, SC, CL-ML, CL	A-2-4, A-6, A-1-b	0	0-10	60-100	50-100	50-100	20-60	15-30	5-15
<b>75395:</b>												
Jamesfin-----	0-6	SIL	CL, CL-ML	A-4	0	0	95-100	95-100	90-100	75-100	20-30	5-10
	6-15	SIL	CL, CL-ML	A-4	0	0	95-100	95-100	90-100	75-100	20-30	5-10
	15-53	SIL	CL	A-4, A-6	0	0	95-100	95-100	90-100	75-100	25-35	10-15
	53-62	FSL, L, SIL	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-100	50-100	20-35	5-15
<b>75408:</b>												
Secesh-----	0-4	SIL	CL-ML, CL	A-4	0	0	80-100	75-100	65-95	50-90	20-30	5-10
	4-10	L, SIL	CL-ML, CL	A-4	0	0	80-100	75-100	65-95	50-90	20-30	5-10
	10-26	L, SIL, GR-L, GR-SIL	CL	A-4, A-6	0	0-10	70-100	60-90	55-90	50-80	25-40	10-20
	26-36	L, SCL, GR-L, GRV-SL	SC, GC	A-2-6, A-6, A-2-4	0-7	0-25	50-100	35-90	25-80	15-50	25-35	10-15
	36-80	GRV-SL, GRV- COSL, GRX- COSL, GRX-SCL	GC, GP-GC	A-2-6, A-1-a	0-7	0-40	25-55	15-50	10-40	5-30	20-35	5-15
<b>75409:</b>												
Relfe-----	0-7	SL	SC-SM, SC	A-4, A-2-4, A-1-b	0-1	0-10	75-100	75-100	45-65	20-40	15-25	5-10
	7-64	GRV-COS, GRV- LCOS, GRX-S, GRX-LCOS	GW, GW-GM, GP, SP-SM	A-2-4, A-1-a	0-7	0-40	20-80	15-50	5-35	0-10	15-25	NP-10
<b>75411:</b>												
Tilk-----	0-8	GRV-SL	GC-GM, GW-GC, SC	A-2-4, A-1-a	0	0-15	30-90	15-50	10-35	5-35	20-25	5-10
	8-16	GRV-L, CBV-L, GRX-L, GRV- COSL	SC, GC-GM, GW-GC	A-2-4, A-1-a	0	0-15	30-90	15-50	10-45	5-35	20-25	5-10
	16-47	GRV-L, GRX-L, GRX-SL, CBV-L, GRV-SL	SC, SC-SM, GC, GW-GC	A-2-6, A-1-a	0-5	0-40	30-90	15-50	10-45	5-35	20-30	5-15
	47-70	GRX-LCOS, CBX- LCOS, GRV- COSL, GRX- COSL, CBX- COSL, GRX-SL	GW-GC, GC, GP-GC	A-2-6, A-1-a	0-30	0-40	20-50	15-40	10-30	5-20	20-30	5-15
<b>75416:</b>												
Gladden-----	0-5	L	CL, CL-ML	A-4	0	0	90-100	80-100	70-95	50-75	20-30	5-10
	5-26	L, SIL	CL, CL-ML	A-4	0	0	90-100	80-100	70-100	60-80	20-30	5-10
	26-58	SL, FSL, L	CL, CL-ML, SM, SC-SM	A-2-4, A-4	0	0	90-100	80-100	50-95	30-70	15-30	NP-10
	58-77	COS, S, LS	SM, SP-SM, SC-SM	A-1-b, A-2-4	0	0	80-100	75-100	5-85	5-35	10-20	NP-5
<b>75417:</b>												
Relfe-----	0-6	GRV-SL	GP-GM, GC, GC-GM	A-2-4, A-1-a	0-1	0-5	30-55	25-50	15-35	10-20	10-25	3-9
	6-80	SR- CBX-COS GRV-LS	GC, GW-GM, GW	A-1-a, A-2-4	0-5	0-40	25-60	10-55	5-40	3-15	8-20	2-10

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
75417: Sandbur-----	0-8	FSL	CL, ML, SM	A-4, A-2-4	0	0	80-100	75-100	60-80	35-55	10-30	NP-10
	8-50	SR- FS SIL	CL, ML, SM	A-4, A-2-4	0	0-5	80-100	75-100	55-95	20-85	10-30	NP-10
	50-80	CBX-L, GRX- COSL, GRV-SL, STX-L	GW-GM, GC-GM, GC	A-1-a, A-2-4	0-38	0-30	30-60	20-55	10-30	5-20	10-30	NP-10
75426: Gabriel-----	0-14	SIL	CL, CL-ML	A-6, A-4	0	0	100	95-100	90-100	70-90	25-35	5-15
	14-46	SIL, CL, SICL	CL	A-7-6, A-6	0	0	100	100	90-100	70-95	35-45	15-20
	46-81	SIL, CL, SICL	CL	A-7-6, A-6	0	0	100	100	90-100	70-95	35-45	15-20
75428: Tilk-----	0-4	GRV-L	GC-GM, GC, GP-GC	A-2-4, A-4, A-1-a	0	0-15	20-60	15-55	10-50	5-40	20-25	5-10
	4-10	GRX-L, CBV-L, CBV-SL, GRV- COSL	GP-GC, GC-GM, GC	A-2-4, A-1-a	0	0-15	20-55	15-50	10-45	5-35	20-25	5-10
	10-35	CBV-L, GRX-L, GRV-L, GRX-SL, GRV-SL	GP-GC, GC	A-2-6, A-1-a	0-5	0-40	20-55	15-50	10-45	5-35	20-30	5-15
	35-65	GRX-LCOS, CBX- LCOS, GRV- COSL, GRX- COSL, CBX- COSL, GRX-SL	GP-GC	A-2-6, A-1-a	0-30	0-40	20-55	15-50	10-25	5-12	20-30	5-15
Cornwall-----	0-8	SIL	CL, CL-ML	A-4	0	0	85-100	80-100	70-100	65-95	20-30	5-10
	8-35	SICL, SIL	CL	A-6, A-4	0	0	85-100	80-100	80-100	75-95	30-40	10-20
	35-62	GR-SIL, GRV- SICL, GRV-SIL, SICL, SIL	CL, SC, GC	A-6, A-2-4	0-2	0-15	35-100	30-100	25-100	20-95	30-40	10-20
	62-80	GRX-CL, GRV- SICL, GR-SICL, GRX-C, SICL, GRV-C	CL, GC, SC	A-7-6, A-2-4, A-6	0-2	0-15	30-85	20-85	20-85	15-80	35-50	10-25
Poynor-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-4	GR-SIL	GC, GC-GM, SC-SM	A-4	0-1	0-5	60-80	50-75	45-65	40-55	20-30	5-10
	4-9	GR-SIL, GRV- SIL, CBV-SIL	GC, GC-GM, SC-SM	A-1-b, A-4	0	0-15	40-80	35-75	25-65	20-50	20-30	5-10
	9-26	CBV-SIL, GRV- SICL, GRX-SIL	GC	A-2-6, A-6, A-7-6	0-10	0-20	25-60	20-50	15-50	15-45	30-45	15-25
	26-80	GR-C, C, CB-C	CH, CL	A-7-6, A-6	0-10	0-10	75-100	70-100	65-90	50-85	40-70	20-40
75429: Tilk-----	0-8	GR-L	GC-GM, SC, GM	A-2-4, A-4	0	0-15	60-80	55-75	45-60	30-45	15-30	NP-10
	8-14	CBV-L, GRX-L, GRV-L, GRV-SL, GRX-SL	GM, GC, GC-GM	A-2-4, A-1-a	0	0-35	30-55	25-50	25-30	15-25	20-30	3-10
	14-37	GRX-SL, GRV-SL, GRV-L	GP-GM, GM, GW-GC	A-2-4, A-1-a	0-5	0-35	30-55	25-50	15-25	10-15	20-35	3-10
	37-80	GRX-LCOS, CBX- LCOS, GRV- COSL, GRX- COSL, CBX- COSL, GRV-SL	GC, GC-GM, GM	A-2-4, A-1-a, A-2-6	0-10	0-35	30-55	25-50	20-40	15-30	20-35	3-15

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
75429:												
Secesh-----	0-10	GR-SIL	CL-ML, CL	A-4	0	0-20	80-100	60-85	55-75	50-70	15-25	3-10
	10-16	GR-SIL, SIL	CL	A-6	0	0-20	80-100	60-95	55-85	50-75	25-35	10-15
	16-36	GR-SIL, L, SIL, GR-L	CL-ML, SC-SM, CL	A-2-4, A-4, A-6	0-2	7-40	70-100	50-95	40-85	30-75	25-35	5-15
	36-80	GR-L, GR-SIL, GRV-SL, GRV- SCL	GC, GW-GC, SC	A-2-6, A-1-a	0-7	7-40	50-100	15-75	10-40	10-30	20-35	5-15
75430:												
Wideman-----	0-5	FSL	SM, SC-SM	A-4, A-2-4	0	0	95-100	85-100	60-90	35-50	15-25	NP-7
	5-13	FSL	SM, SC-SM	A-4, A-2-4	0	0	95-100	85-100	60-90	35-50	15-25	NP-7
	13-21	L, FSL	SM, ML, CL-ML	A-4, A-2-4	0	0	95-100	85-100	60-95	35-75	15-30	NP-7
	21-49	S, FS, LS, LFS	SM, SC-SM	A-2-4, A-1-b	0	0	95-100	85-100	50-85	15-35	10-20	NP-4
	49-71	GR-FS, GR-LS, LFS, GR-SL, FSL	SP-SM, SC-SM	A-1-b, A-4	0	0	95-100	50-100	35-85	5-50	10-25	NP-7
75451:												
Gladden-----	0-5	SIL	ML, CL, CL-ML	A-4	0	0	90-100	85-100	65-100	65-90	20-30	NP-10
	5-53	GR-L, GR-SIL	CL, ML, SM, SC-SM	A-2-4, A-4, A-1-b	0	0-15	65-100	50-75	45-75	25-65	15-30	NP-10
	53-80	GRX-COSL, GRV- SL, GRV-L	GP-GM, GM, GW-GM, SC-SM	A-4, A-2-4, A-1-a, A-1-b	0	0-15	30-90	15-50	10-50	5-40	10-20	NP-5
75467:												
Wilbur-----	0-9	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-100	25-35	5-15
	9-60	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-100	25-35	5-15
75468:												
Elsah-----	0-10	SIL	CL	A-6, A-4	0-1	0-15	95-100	90-100	90-100	80-100	22-32	8-15
	10-20	GR-SIL, GR-L	SC, CL	A-4, A-6	0-1	0-15	80-95	60-75	50-70	45-60	20-35	5-15
	20-60	GRV-SIL, GRX-L	SC, SC-SM	A-4	0-5	15-60	40-70	25-50	20-50	20-45	0-30	NP-8
77000:												
Killarney-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-5	CBV-SIL	GC-GM, GC, GM	A-2-4, A-4, A-1-b	0-10	15-60	50-70	35-60	30-55	25-50	15-25	NP-10
	5-16	GR-SIL, CBV- SIL, GRV-SIL	CL, GM, GC-GM	A-4, A-2-4	0-10	0-60	50-90	45-85	40-75	35-65	15-25	NP-10
	16-32	GRV-SIL, CBV- SIL	GC, GC-GM	A-2-4, A-1-b, A-6	0-10	0-60	40-70	35-60	30-55	25-50	20-35	5-15
	32-48	GR-L, CBV-SIL, GRV-SIL, CBV- L, GRV-L, GRX- SIL	GC	A-2-6, A-6, A-2-4	0-10	0-60	25-80	20-70	15-65	15-50	25-35	10-15
	48-80	GR-L, GR-CL, GRV-L, GRV-CL, CBV-L	CL, GC	A-2-6, A-2-4, A-7-6	0	0-40	40-90	35-85	25-75	20-65	25-45	10-25
Frenchmill-----	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-6	CBV-SIL	GM, SC, GC	A-1-b, A-4	0-10	20-60	50-70	35-60	30-55	20-50	15-25	NP-10
	6-19	GR-SIL, GRV- SIL, CBV-L	GM, CL	A-2-4, A-4	0-10	0-60	50-95	45-85	35-75	30-70	15-25	NP-10
	19-27	CBV-SIL, GRV- SIL	GC-GM, GC	A-2-4, A-1-b, A-6	0-10	0-60	40-70	35-60	30-55	25-50	20-35	5-15
	27-58	GRV-L, CBV-L, GRV-CL, CBX-CL	GC	A-2-4, A-6	0-10	0-60	40-70	35-60	25-55	20-50	25-40	10-20
	58-80	SCL, CL, GR- SCL, GR-CL, CB-CL	GC, CL	A-7-6, A-6, A-2-4	0-10	0-40	65-100	60-100	35-85	30-80	30-45	10-25

Table 17.--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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
<b>77002:</b>												
<b>Delassus-----</b>	0-3	SIL	CL-ML, CL, ML	A-4	0	0-10	85-100	80-100	75-100	65-90	15-25	NP-10
	3-7	SIL	CL, CL-ML	A-4	0	0-10	85-100	80-100	75-100	65-90	20-30	5-10
	7-31	SIL, L, SICL	CL	A-6	0	0-10	85-100	80-100	65-100	60-95	25-40	10-20
	31-61	SIL, L, SL, GR- COSL, CB-SIL	CL, GC-GM, CL-ML	A-6, A-4	0	0-25	65-100	60-95	40-90	35-80	20-35	5-15
	61-80	BR	---	---	---	---	---	---	---	---	---	---
<b>77005:</b>												
<b>Hassler-----</b>	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-6	SIL	CL, CL-ML	A-4	0-2	0-10	95-100	85-100	70-85	60-80	20-30	5-10
	6-11	SIL, GR-SIL, CB-SIL	CL-ML, CL	A-4	0-5	0-25	80-100	70-100	60-95	50-90	20-30	5-10
	11-20	L, SIL, SICL, CB-L, GR-CL, GR-SIL	CL	A-6	0-5	0-25	80-100	70-100	60-95	50-90	30-40	10-20
	20-34	GRV-L, GR-L, CBV-L	SC	A-2, A-6	0-10	0-50	55-95	40-85	30-75	20-50	30-40	10-20
	34-42	COSL, BY-COSL, GR-COSL, CB- COSL, STV-COSL	SC	A-2	0-40	0-40	55-100	40-85	25-50	15-35	25-35	10-15
	---	BR	---	---	---	---	---	---	---	---	---	---
<b>Syenite-----</b>	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-4	SIL	CL, CL-ML	A-4	0-2	0-10	95-100	85-100	70-85	50-80	20-30	5-10
	4-9	SIL, CB-SIL, GR-SIL	CL, CL-ML	A-4	0-5	0-25	95-100	85-100	70-85	50-80	20-30	5-10
	9-19	L, SIL, SICL, CB-L, GR-CL, GR-L	CL	A-6	0-5	0-25	80-100	70-100	60-95	50-90	30-40	10-20
	19-29	L, GR-L, CBV-L, BY-L, CB-L	SC	A-2, A-6	0-15	0-50	60-95	50-90	30-75	20-50	25-35	10-20
	---	BR	---	---	---	---	---	---	---	---	---	---
<b>77008:</b>												
<b>Hassler-----</b>	0-1	SPM	---	---	---	---	---	---	---	---	---	---
	1-3	SIL	CL, CL-ML	A-4	0-2	0-10	95-100	85-100	70-85	60-80	20-30	5-10
	3-9	SIL, GR-SIL, CB-SIL	CL, CL-ML	A-4	0-5	0-25	80-100	70-100	60-95	50-90	20-30	5-10
	9-24	L, SIL, SICL, CB-L, GR-CL, GR-SIL	CL	A-6	0-5	0-25	80-100	70-100	60-95	50-90	30-40	10-20
	24-31	GR-L, GRV-L, CBV-L	SC	A-2, A-6	0-10	0-50	55-95	40-85	30-75	20-50	30-40	10-20
	31-48	COSL, BY-COSL, CB-COSL, GR- COSL, STV-COSL	SC	A-2	0-40	0-40	55-100	40-85	25-50	15-30	25-35	10-15
	---	BR	---	---	---	---	---	---	---	---	---	---
<b>80000:</b>												
<b>Calhoun-----</b>	0-9	SIL	CL, ML	A-4	0	0	100	100	95-100	90-100	15-25	NP-10
	9-24	SIL	ML, CL	A-4	0	0	100	100	95-100	90-100	15-25	NP-10
	24-36	SIL, SICL	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	36-80	SIL, SICL	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
<b>80001:</b>												
<b>Oaklimeter-----</b>	0-14	SIL	ML, CL, CL-ML	A-4	0	0	100	100	95-100	90-100	15-25	NP-10
	14-34	SIL, SI	ML, CL, CL-ML	A-4	0	0	100	100	95-100	90-100	15-25	NP-10
	34-57	SI, SIL	ML, CL, CL-ML	A-4	0	0	100	100	100	90-100	15-25	NP-10
	57-71	SICL, SIL	CL, ML	A-6, A-4	0	0	100	100	95-100	90-100	15-35	NP-15

Table 17.--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		
82000:	In											
Dubbs-----	0-9	SIL	CL-ML, ML, CL	A-4	0	0	100	100	95-100	60-95	15-25	NP-10
	9-58	SICL, SIL, CL	CL-ML, CL	A-6	0	0	100	100	95-100	60-95	20-40	5-20
	58-80	L, SIL, VFSL	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-100	55-90	20-35	NP-15
82001:												
Amagon-----	0-5	SIL	CL, CL-ML	A-4	0	0	100	100	95-100	90-100	20-35	5-15
	5-20	SIL	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	20-53	SICL, SIL	CL	A-6, A-7	0	0	100	100	90-100	85-95	30-45	15-25
	53-80	SIL, SICL	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
82002:												
Forestdale-----	0-2	SPM	---	---	---	---	---	---	---	---	---	---
	2-9	SICL	CH, CL	A-6, A-7	0	0	100	100	95-100	90-100	30-58	12-30
	9-51	SIC, C, SICL	CH, CL	A-7	0	0	100	100	95-100	90-100	40-65	20-40
	51-80	VFSL, SIL, SICL, SIC	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	95-100	60-100	20-50	5-30
82005:												
Malden-----	0-6	LFS	SM	A-2-4	0	0	100	100	75-90	15-30	10-25	NP-10
	6-37	LS, LFS	SM, SC-SM	A-2-4	0	0	100	100	55-90	10-30	10-25	NP-10
	37-80	S, FS	SM, SC-SM	A-2-4	0	0	100	100	55-90	10-25	10-20	NP-10
82006:												
Bosket-----	0-9	FSL	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	100	60-100	30-65	10-20	NP-10
	9-20	L, FSL, SL	CL-ML, ML, SC-SM, SM, CL	A-2-4, A-4	0	0	100	100	60-100	30-65	10-25	NP-10
	20-45	L, SCL, CL, SL	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-6	0	0	100	100	60-100	30-80	25-40	7-20
	45-80	FSL, SL, S	SC-SM, SM, CL, CL-ML, ML	A-2-4, A-4	0	0	100	100	60-100	10-55	10-30	NP-10
82007:												
Bosket-----	0-7	L	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	100	60-100	30-65	10-20	NP-10
	7-16	L, FSL, SL	CL-ML, ML, SC-SM, SM, CL	A-2-4, A-4	0	0	100	100	60-100	30-65	10-25	NP-10
	16-37	L, SCL, CL, SL	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-6	0	0	100	100	60-100	30-80	25-40	7-20
	37-67	FSL, SL, S	CL-ML, ML, SC-SM, SM, CL	A-2-4, A-4	0	0	100	100	60-100	30-55	10-30	NP-10
82009:												
Forestdale-----	0-4	SICL	CH, CL	A-6, A-7	0	0	100	100	95-100	90-100	30-58	12-30
	4-40	SIC, C, SICL	CH, CL	A-7	0	0	100	100	95-100	90-100	40-65	20-40
	40-60	SICL, SIL, VFSL	CL, CL-ML	A-7, A-4, A-6	0	0	100	100	95-100	75-100	20-50	5-30
82010:												
Amagon-----	0-12	SIL	CL, CL-ML	A-4	0	0	100	100	85-100	85-100	0-30	4-10
	12-28	SIL	CL, CL-ML	A-4	0	0	100	100	85-100	85-100	0-30	4-10
	28-70	SICL, SIL	CL	A-6	0	0	100	100	85-100	70-100	30-40	10-20
	70-80	FSL, SIL, L, SICL	CL, ML, CL-ML	A-4, A-6	0	0	100	100	80-100	55-95	20-40	3-20





Table 18.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
60033: Wrengart-----	0-5	1-15	65-80	12-27	1.30-1.50	4.00-14.00	0.17-0.20	0.0-2.9	1.0-4.0	.43	.43	4	5	56
	5-11	1-15	65-80	12-30	1.30-1.50	4.00-14.00	0.17-0.20	0.0-2.9	0.5-2.0	.55	.55			
	11-34	1-10	55-70	25-35	1.30-1.50	4.00-14.00	0.17-0.20	3.0-5.9	0.1-0.5	.43	.43			
	34-57	5-25	50-70	27-35	1.50-1.70	1.40-4.00	0.10-0.20	3.0-5.9	0.1-0.5	.43	.43			
	57-72	10-35	40-65	15-30	1.30-1.50	4.00-14.00	0.05-0.15	0.0-2.9	0.1-0.5	.10	.43			
60046: Minnith-----	0-5	2-15	60-80	10-27	1.20-1.40	4.00-14.00	0.22-0.24	0.1-2.9	1.0-2.0	.37	.37	5	5	56
	5-35	2-15	55-75	15-35	1.30-1.60	1.40-14.00	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	35-80	45-65	20-45	12-27	1.40-1.60	1.40-42.00	0.14-0.19	0.1-2.9	0.0-0.5	.37	.37			
60053: Winfield-----	0-6	5-25	50-85	10-20	1.10-1.30	4.00-14.00	0.22-0.24	0.1-2.9	2.0-4.0	.49	.49	5	5	56
	6-20	1-20	50-85	20-30	1.25-1.45	4.00-14.00	0.18-0.22	0.1-2.9	0.2-1.0	.49	.49			
	20-26	1-20	50-80	25-40	1.25-1.45	4.00-14.00	0.18-0.22	3.0-5.9	0.1-0.5	.37	.37			
	26-52	1-20	50-80	15-27	1.25-1.45	4.00-14.00	0.20-0.22	0.1-2.9	0.1-0.5	.55	.55			
	52-60	1-20	50-80	10-27	1.25-1.45	4.00-14.00	0.20-0.22	0.1-2.9	0.1-0.5	.55	.55			
60054: Minnith-----	0-5	2-15	60-80	10-27	1.20-1.40	4.00-14.00	0.22-0.24	0.1-2.9	1.0-2.0	.43	.43	5	5	56
	5-35	2-15	55-75	15-35	1.30-1.60	1.40-14.00	0.18-0.20	3.0-5.9	0.5-1.0	.43	.43			
	35-59	20-52	25-50	12-35	1.40-1.60	1.40-14.00	0.14-0.19	0.1-2.9	0.0-0.5	.32	.32			
	59-80	20-65	5-45	15-35	1.40-1.60	1.40-14.00	0.14-0.19	3.0-5.9	0.0-0.5	.43	.49			
60055: Winfield-----	0-9	1-7	64-78	20-27	1.30-1.50	4.00-14.00	0.22-0.24	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	9-13	1-7	65-75	22-30	1.30-1.50	4.00-14.00	0.18-0.22	3.0-5.9	0.1-0.5	.49	.49			
	13-62	1-7	62-70	24-35	1.30-1.50	4.00-14.00	0.18-0.20	3.0-5.9	0.1-0.5	.43	.43			
	62-80	1-7	64-78	20-27	1.30-1.50	4.00-14.00	0.20-0.22	0.0-2.9	0.1-0.5	.49	.49			
66000: Moniteau-----	0-10	1-15	70-85	5-20	1.20-1.40	4.00-14.00	0.22-0.24	0.0-2.9	1.0-2.0	.55	.55	5	6	48
	10-18	1-15	70-85	10-20	1.20-1.40	4.00-14.00	0.20-0.22	0.0-2.9	0.1-0.5	.64	.64			
	18-34	1-15	55-80	18-35	1.30-1.50	1.40-4.00	0.18-0.22	0.0-5.9	0.1-0.5	.64	.64			
	34-75	1-20	60-75	18-27	1.25-1.45	1.40-4.00	0.18-0.22	0.0-2.9	0.1-0.5	.55	.55			
66054: Wakeland-----	0-6	5-15	60-80	10-20	1.20-1.40	4.00-14.00	0.22-0.24	0.1-2.9	1.0-3.0	.49	.49	5	5	56
	6-24	10-30	50-75	10-20	1.20-1.40	4.00-14.00	0.22-0.24	0.1-2.9	0.5-2.0	.43	.43			
	24-58	5-15	60-80	10-20	1.20-1.40	4.00-14.00	0.20-0.22	0.1-2.9	0.2-1.0	.55	.55			
	58-80	5-15	60-80	10-20	1.20-1.40	4.00-14.00	0.20-0.22	0.1-2.9	0.2-1.0	.55	.55			
66055: Haymond-----	0-5	2-30	50-85	10-20	1.20-1.40	4.00-14.00	0.22-0.24	0.1-2.9	1.0-3.0	.49	.49	5	5	56
	5-51	2-40	50-80	10-20	1.20-1.40	4.00-14.00	0.20-0.22	0.1-2.9	0.5-2.0	.55	.55			
	51-80	2-50	30-80	5-27	1.20-1.40	4.00-14.00	0.14-0.22	0.1-2.9	0.2-1.5	.55	.55			
73055: Alred-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	8	0
	1-7	10-40	50-80	5-15	1.20-1.45	4.00-14.00	0.09-0.15	0.1-2.9	1.0-10	.20	.43			
	7-11	10-40	50-80	5-15	1.25-1.45	4.00-14.00	0.12-0.17	0.1-2.9	0.5-2.0	.20	.49			
	11-30	10-40	40-80	10-27	1.40-1.55	4.00-14.00	0.06-0.15	0.1-2.9	0.2-1.0	.15	.49			
	30-80	0-30	5-40	45-95	1.50-1.65	0.42-1.40	0.07-0.09	3.0-5.9	0.1-1.0	.10	.17			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
73055: Rueter-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-4	10-40	50-80	5-15	1.05-1.25	14.00-42.00	0.09-0.15	0.1-2.9	2.0-10	.15	.37			
	4-17	10-40	50-80	5-15	1.05-1.25	14.00-42.00	0.12-0.18	0.1-2.9	0.2-3.0	.32	.55			
	17-32	10-40	40-80	10-27	1.15-1.35	14.00-42.00	0.06-0.15	0.1-2.9	0.2-1.0	.15	.49			
	32-43	5-35	25-50	27-50	1.30-1.50	4.00-14.00	0.05-0.08	0.1-2.9	0.2-1.0	.10	.32			
	43-71	1-30	5-40	60-95	1.50-1.70	4.00-14.00	0.04-0.09	3.0-5.9	0.2-0.5	.05	.10			
73100: Wrengart-----	0-8	2-10	60-80	12-27	1.30-1.50	4.00-14.00	0.22-0.24	0.1-2.9	1.0-3.0	.43	.43	4	5	56
	8-36	2-10	55-70	20-35	1.30-1.50	4.00-14.00	0.18-0.19	3.0-5.9	0.1-0.5	.43	.43			
	36-61	5-15	55-75	18-32	1.50-1.70	1.40-4.00	0.09-0.15	0.1-2.9	0.1-0.5	.37	.43			
	61-80	5-15	35-50	40-80	1.30-1.50	1.40-4.00	0.08-0.12	6.0-8.9	0.1-0.5	.17	.24			
73101: Wrengart-----	0-8	2-10	60-80	12-27	1.30-1.50	4.00-14.00	0.22-0.24	0.1-2.9	1.0-3.0	.43	.43	4	5	56
	8-36	2-10	55-70	20-35	1.30-1.50	4.00-14.00	0.18-0.19	3.0-5.9	0.1-0.5	.43	.43			
	36-61	5-15	55-75	18-32	1.50-1.70	1.40-4.00	0.09-0.15	0.1-2.9	0.1-0.5	.43	.49			
	61-80	5-15	35-50	40-80	1.30-1.50	1.40-4.00	0.08-0.12	6.0-8.9	0.1-0.5	.17	.24			
73139: Poynor-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-4	10-40	50-80	5-15	1.20-1.45	14.00-42.00	0.15-0.20	0.1-2.9	1.0-8.0	.15	.32			
	4-13	10-40	50-80	5-15	1.25-1.45	14.00-42.00	0.12-0.18	0.1-2.9	0.2-2.0	.20	.43			
	13-24	10-40	40-80	15-30	1.40-1.55	14.00-42.00	0.05-0.12	0.1-2.9	0.2-1.0	.10	.43			
	24-80	1-30	10-50	45-90	1.50-1.65	4.00-14.00	0.07-0.09	3.0-5.9	0.2-0.3	.05	.10			
Clarksville-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-5	10-40	50-70	5-15	1.20-1.40	14.00-42.00	0.15-0.20	0.1-2.9	2.0-10	.17	.28			
	5-8	10-40	50-70	5-15	1.20-1.40	14.00-42.00	0.12-0.18	0.1-2.9	0.5-2.0	.17	.37			
	8-18	10-40	40-80	10-27	1.30-1.45	14.00-42.00	0.09-0.14	0.1-2.9	0.1-1.0	.10	.32			
	18-42	15-50	20-60	20-40	1.35-1.55	4.00-14.00	0.05-0.12	0.1-2.9	0.1-0.5	.10	.28			
	42-65	10-40	15-40	40-60	1.35-1.55	4.00-14.00	0.04-0.08	3.0-5.9	0.1-0.2	.20	.24			
Scholten-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-3	10-40	50-80	5-15	1.20-1.40	14.00-42.00	0.15-0.20	0.1-2.9	2.0-7.0	.28	.43			
	3-8	10-40	50-80	5-15	1.20-1.40	4.00-14.00	0.12-0.18	0.1-2.9	1.0-2.0	.37	.55			
	8-17	5-30	50-80	10-36	1.30-1.45	4.00-14.00	0.08-0.12	0.1-2.9	0.7-2.0	.17	.37			
	17-41	5-30	50-80	15-30	1.55-1.75	0.01-0.42	0.02-0.06	0.1-2.9	0.2-0.3	.17	.43			
	41-80	5-25	10-50	35-80	1.35-1.55	14.00-42.00	0.01-0.05	3.0-5.9	0.0-0.2	.15	.24			
73140: Clarksville-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-6	10-40	50-70	5-15	1.20-1.40	14.00-42.00	0.15-0.20	0.0-2.9	2.0-10	.15	.37			
	6-13	10-40	50-70	5-15	1.20-1.40	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.20	.49			
	13-21	10-40	40-80	10-27	1.30-1.45	14.00-42.00	0.09-0.14	0.0-2.9	0.2-1.0	.15	.49			
	21-43	15-50	20-60	20-40	1.35-1.55	4.00-14.00	0.05-0.12	0.0-2.9	0.2-0.5	.05	.28			
	43-66	10-40	15-40	40-60	1.35-1.55	4.00-14.00	0.04-0.08	3.0-5.9	0.1-0.2	.05	.15			
Scholten-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-6	10-40	50-80	5-15	1.20-1.40	14.00-42.00	0.09-0.15	0.0-2.9	1.0-5.0	.10	.37			
	6-13	10-40	50-80	5-15	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.6-2.0	.15	.43			
	13-34	20-52	20-60	10-30	1.30-1.45	4.00-14.00	0.06-0.10	0.0-2.9	0.1-0.7	.05	.32			
	34-58	15-45	20-60	15-30	1.55-1.75	0.01-0.42	0.02-0.06	0.0-2.9	0.0-0.5	.17	.43			
	58-80	10-45	10-50	35-80	1.35-1.55	14.00-42.00	0.01-0.05	3.0-5.9	0.0-0.3	.15	.32			
73141: Firebaugh-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	5	56
	1-4	5-20	80-90	5-15	0.95-1.15	4.00-14.00	0.22-0.24	0.0-2.9	2.0-5.0	.55	.55			
	4-8	5-25	65-90	5-15	1.25-1.40	4.00-14.00	0.22-0.24	0.0-2.9	1.0-2.0	.64	.64			
	8-21	5-25	45-75	20-35	1.25-1.45	4.00-14.00	0.16-0.20	0.0-2.9	0.5-1.0	.37	.43			
	21-36	5-35	40-65	20-35	1.50-1.70	0.42-1.40	0.05-0.10	0.0-2.9	0.2-0.3	.15	.49			
	36-71	5-40	15-40	35-60	1.35-1.60	1.40-4.00	0.05-0.10	3.0-5.9	0.2-0.2	.05	.20			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
73145: Crider-----	0-8	2-20	50-80	10-27	1.00-1.20	4.00-14.00	0.22-0.24	0.0-2.9	2.0-5.0	.49	.49	5	5	56
	8-32	2-20	50-75	25-35	1.20-1.45	4.00-14.00	0.18-0.22	0.0-2.9	0.3-1.0	.43	.43			
	32-74	2-25	35-70	30-55	1.20-1.55	4.00-14.00	0.08-0.18	3.0-5.9	0.2-0.5	.37	.37			
73146: Marquand-----	0-5	5-25	60-80	10-20	0.95-1.15	4.00-14.00	0.22-0.24	0.0-2.9	2.0-5.0	.43	.43	5	5	56
	5-8	5-25	60-80	10-20	0.95-1.15	4.00-14.00	0.22-0.24	0.0-2.9	0.9-2.0	.49	.49			
	8-22	2-20	50-75	20-35	1.25-1.45	1.40-4.00	0.17-0.22	0.0-2.9	0.2-0.9	.43	.43			
	22-43	2-20	50-75	20-35	1.25-1.45	1.40-4.00	0.17-0.20	0.0-2.9	0.2-0.3	.43	.43			
	43-80	2-30	35-70	25-40	1.30-1.50	1.40-4.00	0.14-0.20	0.0-2.9	0.2-0.3	.32	.37			
73150: Caneyville-----	0-8	2-30	50-80	10-27	1.00-1.20	4.00-14.00	0.22-0.24	0.0-2.9	2.0-5.0	.32	.37	2	5	56
	8-18	2-20	20-60	27-50	1.25-1.55	1.40-4.00	0.10-0.16	3.0-5.9	0.5-2.0	.28	.28			
	18-30	2-20	20-60	35-70	1.25-1.55	1.40-4.00	0.10-0.16	3.0-5.9	0.2-1.0	.20	.20			
	30-80	---	---	---	---	0.00-0.42	---	---	---	---	---			
Bucklick-----	0-3	2-30	50-80	10-27	1.30-1.40	4.00-14.00	0.23-0.24	0.0-2.9	2.0-4.0	.24	.28	4	6	48
	3-16	2-20	20-70	30-60	1.30-1.40	4.00-14.00	0.10-0.16	3.0-5.9	0.5-2.0	.17	.17			
	16-45	1-40	10-60	40-80	1.30-1.40	4.00-14.00	0.06-0.12	6.0-9.0	0.2-1.0	.15	.17			
	45-80	---	---	---	---	0.00-0.42	---	---	---	---	---			
73151: Caneyville-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	2	5	56
	1-4	2-30	50-80	10-27	1.00-1.20	4.00-14.00	0.22-0.24	0.0-2.9	2.0-5.0	.32	.37			
	4-11	2-20	20-60	27-50	1.25-1.55	1.40-4.00	0.10-0.16	3.0-5.9	0.5-2.0	.28	.28			
	11-31	2-20	20-60	35-70	1.25-1.55	1.40-4.00	0.10-0.16	3.0-5.9	0.2-1.0	.28	.28			
	31-80	---	---	---	---	0.00-0.42	---	---	---	---	---			
Gasconade-----	0-3	2-20	40-60	40-60	1.35-1.50	4.00-14.00	0.11-0.15	3.0-5.9	6.0-12	.20	.20	1	5	56
	3-16	2-40	20-60	35-70	1.45-1.70	1.40-4.00	0.04-0.10	3.0-5.9	2.0-10	.05	.24			
	16-80	---	---	---	---	0.00-0.42	---	---	---	---	---			
Bucklick-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	6	48
	1-6	2-20	50-80	10-27	1.30-1.40	4.00-14.00	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28			
	6-31	2-20	20-70	35-70	1.30-1.40	4.00-14.00	0.10-0.16	3.0-5.9	0.5-2.0	.24	.24			
	31-47	1-40	10-60	40-80	1.30-1.40	4.00-14.00	0.06-0.12	6.0-9.0	0.2-1.0	.15	.15			
	47-80	---	---	---	---	0.00-0.42	---	---	---	---	---			
73156: Alred-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	8	0
	1-6	10-45	50-80	5-15	1.20-1.45	4.00-14.00	0.09-0.15	0.0-2.9	1.0-10	.15	.37			
	6-11	10-45	50-80	5-15	1.25-1.45	4.00-14.00	0.12-0.17	0.0-2.9	0.5-2.0	.24	.49			
	11-31	10-40	40-70	10-27	1.40-1.55	4.00-14.00	0.06-0.15	0.0-2.9	0.2-1.0	.15	.43			
	31-79	1-30	5-40	45-95	1.50-1.65	0.42-1.40	0.07-0.09	3.0-5.9	0.1-1.0	.15	.20			
Gepp-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	8	0
	1-6	10-40	50-80	8-18	0.95-1.05	4.00-14.00	0.09-0.15	0.0-2.9	2.0-10	.15	.37			
	6-12	5-30	30-60	27-65	1.25-1.40	4.00-14.00	0.09-0.16	3.0-5.9	0.3-1.0	.05	.10			
	12-67	1-30	5-40	60-95	1.20-1.40	4.00-14.00	0.07-0.10	3.0-5.9	0.2-1.0	.10	.10			
73157: Captina-----	0-5	5-30	60-80	5-15	0.95-1.15	4.00-14.00	0.22-0.24	0.0-2.9	2.0-6.0	.49	.49	3	5	56
	5-25	2-20	50-80	20-35	1.25-1.45	4.00-14.00	0.17-0.21	0.0-2.9	0.3-1.0	.49	.49			
	25-31	2-30	50-80	20-35	1.55-1.75	0.42-1.40	0.02-0.08	0.0-2.9	0.1-0.3	.20	.55			
	31-78	2-45	10-60	35-70	1.45-1.65	1.40-4.00	0.02-0.08	3.0-5.9	0.1-0.3	.10	.20			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
73223:														
Coulstone-----	0-1	40-70	25-55	5-12	0.02-0.20	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-6	40-70	25-55	5-12	1.20-1.45	42.00-141.00	0.03-0.10	0.1-2.9	1.0-3.0	.05	.20			
	6-29	35-70	25-55	6-24	1.25-1.45	14.00-42.00	0.02-0.09	0.1-2.9	0.2-1.0	.05	.24			
	29-42	35-60	15-55	14-50	1.40-1.55	14.00-42.00	0.02-0.10	0.1-2.9	0.1-0.3	.05	.24			
	42-80	30-55	8-40	18-50	1.50-1.65	14.00-42.00	0.02-0.11	0.1-5.9	0.1-0.3	.05	.20			
Bender-----	0-1	50-75	15-50	1-8	0.02-0.20	42.00-141.00	0.10-0.20	---	35-90	---	---	2	8	0
	1-5	50-75	15-50	1-8	1.30-1.50	14.00-42.00	0.01-0.09	0.1-2.9	1.5-3.0	.05	.32			
	5-21	45-75	10-55	1-15	1.30-1.50	14.00-42.00	0.01-0.06	0.1-2.9	0.2-1.5	.10	.37			
	21-31	40-85	5-50	2-30	1.30-1.50	14.00-42.00	0.01-0.06	0.1-2.9	0.0-0.5	.05	.28			
	31-80	---	---	---	---	0.00-1.40	---	---	---	---	---			
73264:														
Alred-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	8	0
	1-3	10-40	50-80	5-20	1.20-1.45	4.00-14.00	0.09-0.19	0.0-2.9	1.0-10	.37	.55			
	3-8	10-40	50-80	5-15	1.25-1.45	4.00-14.00	0.12-0.19	0.0-2.9	0.5-2.0	.37	.55			
	8-22	10-40	40-80	20-35	1.40-1.55	4.00-14.00	0.06-0.15	0.0-2.9	0.1-1.0	.17	.43			
	22-80	0-30	5-40	45-95	1.50-1.65	0.42-1.40	0.07-0.09	3.0-5.9	0.1-1.0	.10	.15			
Wrengart-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	5	56
	1-10	1-10	70-80	10-25	1.30-1.50	4.00-14.00	0.20-0.22	0.0-2.9	1.0-2.0	.55	.55			
	10-30	1-10	65-80	20-35	1.30-1.50	4.00-14.00	0.18-0.20	3.0-5.9	0.5-1.0	.55	.55			
	30-53	5-40	40-70	15-35	1.50-1.70	1.40-4.00	0.10-0.15	0.0-2.9	0.0-0.5	.43	.43			
	53-80	5-15	25-70	30-65	1.30-1.50	4.00-14.00	0.05-0.10	3.0-5.9	0.0-0.5	.10	.24			
73265:														
Captina-----	0-8	5-30	60-80	5-15	0.95-1.15	4.00-14.00	0.22-0.24	0.0-2.9	2.0-6.0	.49	.49	3	5	56
	8-26	2-20	50-80	20-35	1.25-1.45	4.00-14.00	0.17-0.21	0.0-2.9	0.3-1.0	.43	.43			
	26-43	2-30	50-80	20-35	1.55-1.75	0.42-1.40	0.02-0.08	0.0-2.9	0.1-0.3	.10	.49			
	43-80	2-45	10-60	35-70	1.45-1.65	1.40-4.00	0.02-0.08	3.0-5.9	0.1-0.3	.05	.24			
Scholten-----	0-2	10-40	60-80	5-20	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	2.0-8.0	.20	.43	3	8	0
	2-7	10-40	60-80	5-20	1.20-1.40	14.00-42.00	0.08-0.16	0.0-2.9	1.0-2.0	.24	.49			
	7-16	5-20	45-70	15-35	1.30-1.45	14.00-42.00	0.07-0.12	0.0-2.9	0.5-2.0	.15	.32			
	16-40	10-40	50-70	15-27	1.55-1.75	0.01-0.42	0.05-0.08	0.0-2.9	0.1-0.3	.10	.43			
	40-80	5-40	15-40	35-80	1.35-1.55	4.00-14.00	0.05-0.08	3.0-5.9	0.1-0.2	.05	.10			
73266:														
Hildebrecht-----	0-4	5-10	70-80	10-25	1.30-1.50	4.00-14.00	0.20-0.22	0.0-2.9	1.0-5.0	.43	.43	4	5	56
	4-36	2-15	60-80	20-35	1.30-1.50	4.00-14.00	0.18-0.20	3.0-5.9	0.5-1.0	.43	.43			
	36-39	5-30	55-75	15-25	1.50-1.70	0.42-1.40	0.05-0.09	0.0-2.9	0.1-0.5	.43	.55			
	39-62	5-20	60-70	15-30	1.50-1.70	0.42-1.40	0.02-0.06	0.0-2.9	0.1-0.5	.10	.55			
	62-80	5-15	20-70	35-80	1.30-1.50	1.40-4.00	0.05-0.10	3.0-5.9	0.1-0.5	.05	.17			
73267:														
Yelton-----	0-5	10-40	50-80	5-25	1.30-1.50	4.00-14.00	0.15-0.20	0.0-2.9	1.0-4.0	.32	.37	3	5	56
	5-11	10-40	50-80	5-25	1.30-1.50	4.00-14.00	0.15-0.20	0.0-2.9	0.5-2.0	.32	.43			
	11-29	20-40	25-50	20-35	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.5-1.0	.32	.37			
	29-42	30-50	30-60	15-27	1.60-1.90	0.42-1.40	0.02-0.08	0.0-2.9	0.1-0.5	.10	.32			
	42-80	10-70	10-40	15-60	1.20-1.40	4.00-14.00	0.05-0.10	3.0-5.9	0.1-0.5	.05	.24			
Scholten-----	0-2	10-40	60-80	5-20	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	2.0-8.0	.28	.43	3	8	0
	2-7	10-40	60-80	10-20	1.20-1.40	14.00-42.00	0.08-0.16	0.0-2.9	1.0-2.0	.37	.55			
	7-16	5-15	50-75	15-35	1.30-1.45	14.00-42.00	0.07-0.12	0.0-2.9	0.7-2.0	.17	.37			
	16-40	10-40	45-70	15-27	1.55-1.75	0.01-0.42	0.05-0.08	0.0-2.9	0.1-0.3	.10	.55			
	40-80	5-40	15-50	35-80	1.35-1.55	4.00-14.00	0.05-0.08	3.0-5.9	0.1-0.2	.15	.20			
73269:														
Brussels-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	5	8	0
	1-10	1-20	40-70	27-40	1.05-1.25	1.40-4.00	0.09-0.14	3.0-5.9	4.0-8.0	.15	.28			
	10-49	1-20	30-60	35-50	1.30-1.50	1.40-4.00	0.06-0.10	3.0-5.9	2.0-4.0	.10	.28			
	49-70	1-40	30-70	20-40	1.30-1.50	1.40-4.00	0.06-0.10	3.0-5.9	0.5-2.0	.20	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
73269: Gasconade-----	0-9	10-40	10-40	40-70	1.05-1.35	1.40-4.00	0.08-0.10	3.0-5.9	6.0-10	.10	.15	1	8	0
	9-14	10-40	10-50	35-70	1.30-1.50	1.40-4.00	0.04-0.07	3.0-5.9	2.0-10	.10	.20			
	14-80	---	---	---	---	0.00-0.11	---	---	---	---	---			
Rock outcrop-----	0-80	---	---	---	---	0.00-0.42	---	---	---	---	---	---	---	---
73270: Wrengart-----	0-6	2-20	55-85	10-27	1.30-1.50	4.00-14.00	0.20-0.22	0.0-2.9	1.0-2.0	.49	.49	4	5	56
	6-26	2-20	50-75	20-35	1.30-1.50	4.00-14.00	0.18-0.20	3.0-5.9	0.5-1.0	.49	.49			
	26-45	2-20	50-75	15-35	1.50-1.70	1.40-4.00	0.10-0.15	0.0-2.9	0.0-0.5	.55	.55			
	45-60	2-40	50-75	15-35	1.30-1.50	4.00-14.00	0.05-0.10	3.0-5.9	0.0-0.5	.15	.55			
	60-80	2-30	10-50	40-80	1.30-1.50	1.40-4.00	0.08-0.12	3.0-5.9	0.0-0.5	.10	.15			
73343: Captina-----	0-4	5-30	60-80	12-25	0.95-1.15	4.00-14.00	0.22-0.24	0.0-2.9	2.0-6.0	.43	.43	3	5	56
	4-20	2-20	50-80	20-35	1.25-1.45	4.00-14.00	0.17-0.21	0.0-2.9	0.3-1.0	.43	.43			
	20-28	2-30	50-80	20-35	1.55-1.75	0.42-1.40	0.06-0.10	0.0-2.9	0.1-0.3	.10	.49			
	28-75	2-45	10-60	35-70	1.45-1.65	1.40-4.00	0.02-0.08	3.0-5.9	0.1-0.3	.15	.20			
73344: Captina-----	0-7	5-30	60-80	12-25	0.95-1.15	4.00-14.00	0.14-0.20	0.0-2.9	2.0-6.0	.49	.49	3	5	56
	7-24	2-20	50-80	20-35	1.25-1.45	4.00-14.00	0.14-0.20	0.0-2.9	0.3-1.2	.43	.43			
	24-47	2-30	50-80	20-35	1.55-1.75	0.42-1.40	0.08-0.12	0.0-2.9	0.1-0.3	.32	.43			
	47-75	2-45	10-60	35-70	1.45-1.65	1.40-4.00	0.02-0.08	3.0-5.9	0.1-0.3	.15	.37			
73345: Hildebrecht-----	0-11	2-30	60-80	8-22	1.35-1.45	4.00-14.00	0.22-0.24	0.0-2.9	1.0-2.0	.55	.55	4	5	56
	11-27	2-20	50-80	20-35	1.40-1.50	4.00-14.00	0.18-0.21	0.0-2.9	0.2-0.4	.49	.49			
	27-44	2-30	50-80	12-35	1.60-1.75	0.42-1.40	0.06-0.10	0.0-2.9	0.1-0.3	.28	.55			
	44-60	2-45	10-60	35-75	1.45-1.65	1.40-4.00	0.02-0.08	3.0-5.9	0.1-0.3	.17	.32			
73346: Hildebrecht-----	0-6	2-30	60-80	8-22	1.35-1.45	4.00-14.00	0.22-0.24	0.0-2.9	1.0-2.0	.49	.49	4	5	56
	6-31	2-20	50-80	20-35	1.40-1.50	4.00-14.00	0.18-0.21	0.0-2.9	0.2-0.4	.49	.49			
	31-52	2-30	50-80	12-35	1.55-1.75	0.42-1.40	0.06-0.10	0.0-2.9	0.1-0.3	.43	.55			
	52-80	2-45	10-60	35-75	1.45-1.65	1.40-4.00	0.02-0.08	3.0-5.9	0.1-0.3	.10	.15			
74644: Deible-----	0-7	5-30	50-80	10-27	1.30-1.45	4.00-14.00	0.22-0.24	0.0-2.9	1.0-4.0	.55	.55	3	5	56
	7-16	5-30	50-80	10-27	1.30-1.45	4.00-14.00	0.20-0.22	0.0-2.9	0.3-1.0	.49	.49			
	16-40	2-20	40-70	35-60	1.35-1.50	0.01-0.42	0.10-0.16	6.0-8.9	0.3-0.8	.32	.32			
	40-65	2-30	30-70	25-40	1.35-1.50	1.40-4.00	0.18-0.21	3.0-5.9	0.1-0.5	.37	.43			
74646: Cornwall-----	0-5	2-20	60-80	10-20	1.00-1.20	4.00-14.00	0.20-0.24	0.0-2.9	1.0-3.0	.49	.49	4	5	56
	5-17	2-20	60-80	20-35	1.25-1.45	4.00-14.00	0.16-0.20	0.0-2.9	0.5-1.0	.43	.43			
	17-39	2-20	60-80	20-30	1.50-1.70	0.42-1.40	0.08-0.18	0.0-2.9	0.1-0.3	.55	.55			
	39-60	10-40	20-60	27-50	1.45-1.65	4.00-14.00	0.06-0.14	0.0-2.9	0.1-0.3	.32	.43			
74648: Aslinger-----	0-4	10-40	50-80	10-20	0.90-1.10	4.00-14.00	0.18-0.22	0.0-2.9	2.0-4.0	.43	.43	4	5	56
	4-8	10-40	50-80	10-20	0.90-1.10	4.00-14.00	0.18-0.22	0.0-2.9	0.5-2.0	.49	.49			
	8-21	5-20	45-70	20-35	1.25-1.45	4.00-14.00	0.08-0.16	0.0-2.9	0.2-1.0	.49	.49			
	21-29	10-45	45-70	12-27	1.40-1.70	1.40-4.00	0.01-0.05	0.0-2.9	0.2-0.3	.15	.55			
	29-55	10-45	25-50	18-35	1.30-1.60	1.40-4.00	0.05-0.13	0.0-2.9	0.2-0.3	.10	.37			
	55-70	5-45	15-50	35-55	1.30-1.60	1.40-4.00	0.02-0.13	3.0-5.9	0.1-0.3	.05	.17			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
74649: Aslinger-----	0-3	10-40	50-80	10-20	0.90-1.10	4.00-14.00	0.18-0.22	0.0-2.9	2.0-4.0	.37	.43	4	5	56
	3-8	10-40	50-80	10-20	0.90-1.10	4.00-14.00	0.18-0.22	0.0-2.9	1.0-2.0	.49	.49			
	8-20	5-20	45-70	20-35	1.25-1.45	4.00-14.00	0.08-0.16	0.0-2.9	0.3-1.0	.37	.43			
	20-39	10-45	45-70	12-27	1.40-1.70	1.40-4.00	0.01-0.05	0.0-2.9	0.2-0.5	.32	.49			
	39-52	10-45	25-50	18-35	1.30-1.60	1.40-4.00	0.05-0.13	0.0-2.9	0.2-0.3	.24	.43			
	52-80	5-45	15-50	35-55	1.30-1.60	1.40-4.00	0.02-0.13	3.0-5.9	0.1-0.3	.05	.17			
Waben-----	0-6	5-40	50-80	10-15	1.20-1.50	14.00-42.00	0.09-0.13	0.0-2.9	1.0-3.0	.24	.43	4	8	0
	6-15	5-40	40-80	12-22	1.20-1.50	14.00-42.00	0.05-0.13	0.0-2.9	0.5-1.0	.15	.49			
	15-54	20-52	28-65	15-27	1.30-1.60	14.00-42.00	0.05-0.15	0.0-2.9	0.5-1.0	.10	.24			
	54-80	20-50	20-50	27-40	1.30-1.60	14.00-42.00	0.05-0.15	0.0-2.9	0.1-0.5	.05	.20			
74679: Higdon-----	0-7	2-35	50-85	10-20	1.20-1.45	4.00-14.00	0.22-0.24	0.0-2.9	1.0-3.0	.55	.55	5	5	56
	7-13	2-35	50-80	10-20	1.40-1.50	4.00-14.00	0.18-0.20	0.0-2.9	0.5-2.0	.64	.64			
	13-43	2-30	45-75	20-35	1.40-1.50	1.40-4.00	0.15-0.19	3.0-5.9	0.3-0.7	.55	.55			
	43-80	2-30	30-75	15-35	1.35-1.50	1.40-4.00	0.15-0.20	3.0-5.9	0.1-0.3	.49	.49			
74680: Moniteau-----	0-6	1-15	70-85	5-20	1.20-1.40	4.00-14.00	0.17-0.22	0.0-2.9	1.0-2.0	.55	.55	5	6	48
	6-15	1-15	70-85	10-20	1.20-1.40	4.00-14.00	0.17-0.20	0.0-2.9	0.1-0.5	.64	.64			
	15-52	1-15	55-70	20-35	1.30-1.50	1.40-4.00	0.17-0.20	3.0-5.9	0.1-0.5	.49	.49			
	52-78	1-40	40-75	15-30	1.25-1.45	1.40-4.00	0.17-0.20	0.0-2.9	0.1-0.5	.55	.55			
74685: Auxvasse-----	0-6	5-20	60-80	10-27	1.30-1.45	4.00-14.00	0.22-0.24	0.0-2.9	1.0-3.0	.55	.55	3	5	56
	6-17	5-20	60-80	10-27	1.30-1.45	4.00-14.00	0.20-0.22	0.0-2.9	0.3-2.0	.64	.64			
	17-51	2-15	40-70	35-57	1.35-1.55	0.01-0.42	0.10-0.16	6.0-8.9	0.1-0.5	.43	.43			
	51-80	2-25	40-70	25-45	1.35-1.55	1.40-4.00	0.18-0.20	3.0-5.9	0.1-0.3	.55	.55			
75379: Kaintuck-----	0-9	35-52	30-50	7-15	1.30-1.50	14.00-42.00	0.09-0.17	0.0-2.9	0.5-2.0	.37	.37	5	3	86
	9-36	30-80	10-60	4-18	1.20-1.50	14.00-42.00	0.14-0.19	0.0-2.9	0.5-1.0	.24	.28			
	36-80	60-95	2-35	1-10	1.20-1.50	42.00-141.00	0.04-0.16	0.0-2.9	0.1-0.5	.15	.15			
75381: Bearthicket-----	0-6	2-40	50-85	10-20	1.20-1.40	4.00-14.00	0.22-0.24	0.0-2.9	1.0-4.0	.43	.43	5	5	56
	6-19	2-40	50-85	10-20	1.20-1.50	4.00-14.00	0.22-0.24	0.0-2.9	0.5-2.0	.43	.43			
	19-45	2-40	50-80	15-30	1.20-1.50	4.00-14.00	0.20-0.22	0.0-2.9	0.2-1.0	.43	.43			
	45-64	2-40	40-80	10-25	1.20-1.50	4.00-14.00	0.18-0.22	0.0-2.9	0.2-0.5	.43	.43			
	64-80	40-80	10-50	5-20	1.20-1.50	4.00-14.00	0.07-0.13	0.0-2.9	0.2-0.5	.15	.15			
75395: Jamesfin-----	0-6	2-40	50-85	10-20	1.20-1.40	4.00-14.00	0.22-0.24	0.1-2.9	2.0-4.0	.37	.37	5	5	56
	6-15	2-40	50-85	10-20	1.20-1.40	4.00-14.00	0.22-0.24	0.1-2.9	1.0-2.0	.49	.49			
	15-53	2-35	50-80	15-27	1.20-1.50	4.00-14.00	0.20-0.22	0.1-2.9	0.2-1.0	.49	.49			
	53-62	2-65	30-80	7-27	1.20-1.50	4.00-14.00	0.14-0.22	0.1-2.9	0.2-1.0	.37	.43			
75408: Secesh-----	0-4	10-40	50-75	10-20	1.00-1.10	4.00-14.00	0.21-0.23	0.0-2.9	2.0-4.0	.20	.32	5	5	56
	4-10	10-52	28-70	10-20	1.00-1.10	4.00-14.00	0.19-0.23	0.0-2.9	0.5-2.0	.32	.37			
	10-26	10-40	35-65	18-27	1.20-1.40	4.00-14.00	0.14-0.21	0.0-2.9	0.3-1.0	.28	.43			
	26-36	40-60	20-50	15-27	1.30-1.50	4.00-14.00	0.13-0.19	0.0-2.9	0.2-0.5	.15	.28			
	36-80	52-85	5-35	10-27	1.50-1.70	14.00-42.00	0.04-0.12	0.0-2.9	0.2-0.5	.05	.24			
75409: Relfe-----	0-7	50-80	10-45	4-10	1.10-1.50	42.00-141.00	0.11-0.15	0.0-2.9	1.0-4.0	.02	.05	5	8	0
	7-64	75-98	2-35	1-10	1.10-1.50	42.00-141.00	0.02-0.08	0.0-2.9	0.0-0.7	.02	.05			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
75411: Tilk-----	0-8	45-80	20-50	5-15	1.00-1.30	14.00-42.00	0.03-0.11	0.0-2.9	2.0-8.0	.05	.20	5	8	0
	8-16	45-80	20-50	5-15	1.00-1.30	14.00-42.00	0.04-0.14	0.0-2.9	0.9-2.0	.10	.37			
	16-47	35-75	20-50	7-20	1.25-1.50	14.00-42.00	0.04-0.14	0.0-2.9	0.2-1.0	.10	.28			
	47-70	52-85	5-35	5-15	1.35-1.60	42.00-141.00	0.02-0.10	0.0-2.9	0.0-0.5	.05	.15			
75416: Gladden-----	0-5	35-52	33-50	10-15	0.95-1.15	4.00-14.00	0.18-0.22	0.0-2.9	1.0-3.0	.32	.32	4	3	86
	5-26	20-52	33-70	10-15	0.95-1.15	4.00-14.00	0.15-0.22	0.0-2.9	0.5-1.0	.37	.37			
	26-58	30-75	20-50	5-20	1.25-1.55	4.00-14.00	0.12-0.18	0.0-2.9	0.1-1.0	.37	.37			
	58-77	70-98	2-25	1-10	1.45-1.55	42.00-140.00	0.02-0.12	0.0-2.9	0.0-0.2	.10	.10			
75417: Relfe-----	0-6	48-80	15-45	4-15	1.10-1.50	14.00-42.00	0.05-0.09	0.1-2.9	1.0-4.0	.05	.17	5	5	56
	6-80	85-96	2-35	1-13	1.10-1.30	42.00-141.00	0.03-0.05	0.1-2.9	0.0-1.0	.02	.10			
Sandbur-----	0-8	55-75	20-45	5-18	1.30-1.50	14.00-42.00	0.09-0.17	0.1-2.9	1.0-4.0	.24	.24	4	3	86
	8-50	40-90	10-55	5-18	1.20-1.50	14.00-42.00	0.06-0.20	0.1-2.9	0.2-1.0	.28	.28			
	50-80	52-85	5-35	5-27	1.35-1.60	14.00-42.00	0.04-0.10	0.1-2.9	0.1-0.5	.05	.17			
75426: Gabriel-----	0-14	2-10	60-80	12-27	1.25-1.30	4.00-14.00	0.22-0.24	0.1-2.9	2.0-4.0	.37	.37	5	6	48
	14-46	2-40	50-75	25-35	1.25-1.40	1.40-4.00	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43			
	46-81	2-40	50-75	25-35	1.35-1.45	1.40-4.00	0.18-0.20	3.0-5.9	0.1-1.0	.43	.43			
75428: Tilk-----	0-4	45-80	20-50	5-15	1.00-1.30	14.00-42.00	0.08-0.14	0.0-2.9	2.0-8.0	.05	.15	5	8	0
	4-10	45-80	20-50	5-15	1.00-1.30	14.00-42.00	0.08-0.11	0.0-2.9	0.9-2.0	.05	.15			
	10-35	35-75	20-50	10-20	1.25-1.50	14.00-42.00	0.05-0.08	0.0-2.9	0.2-1.0	.10	.20			
	35-65	52-85	5-35	5-15	1.35-1.60	14.00-42.00	0.02-0.10	0.0-2.9	0.0-0.5	.05	.10			
Cornwall-----	0-8	2-20	60-80	10-20	1.00-1.20	4.00-14.00	0.20-0.24	0.0-2.9	1.0-6.0	.32	.43	4	5	56
	8-35	2-20	55-80	20-35	1.25-1.45	4.00-14.00	0.16-0.20	0.0-2.9	0.1-1.0	.43	.43			
	35-62	2-20	55-80	20-30	1.50-1.70	0.42-1.40	0.08-0.18	0.0-2.9	0.1-0.3	.15	.43			
	62-80	10-40	10-60	27-50	1.45-1.65	4.00-14.00	0.06-0.14	0.0-2.9	0.1-0.3	.32	.43			
Poynor-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	8	0
	1-4	10-40	50-80	5-15	1.20-1.45	14.00-42.00	0.04-0.12	0.0-2.9	2.0-8.0	.17	.28			
	4-9	10-40	50-80	5-15	1.25-1.45	14.00-42.00	0.02-0.09	0.0-2.9	0.2-2.0	.17	.37			
	9-26	10-40	40-80	15-30	1.40-1.55	4.00-14.00	0.02-0.09	0.0-2.9	0.1-0.5	.17	.43			
	26-80	1-40	10-50	45-90	1.50-1.65	4.00-14.00	0.08-0.12	3.0-5.9	0.1-0.5	.10	.15			
75429: Tilk-----	0-8	30-50	30-50	5-20	1.00-1.30	14.00-42.00	0.06-0.18	0.0-2.9	2.0-8.0	.15	.24	5	5	56
	8-14	30-75	10-50	5-20	1.25-1.50	14.00-42.00	0.04-0.16	0.0-2.9	0.5-1.0	.10	.32			
	14-37	30-80	10-50	10-20	1.25-1.50	14.00-42.00	0.04-0.14	0.0-2.9	0.2-1.0	.05	.15			
	37-80	52-75	5-35	5-25	1.35-1.60	14.00-42.00	0.02-0.10	0.0-2.9	0.1-0.5	.05	.20			
Secesh-----	0-10	10-35	50-80	10-20	1.00-1.10	4.00-14.00	0.20-0.22	0.0-2.9	2.0-4.0	.20	.32	5	5	56
	10-16	10-35	50-70	18-27	1.00-1.40	4.00-14.00	0.18-0.20	0.0-2.9	0.5-1.0	.28	.43			
	16-36	25-50	30-50	18-27	1.20-1.40	4.00-14.00	0.12-0.19	0.0-2.9	0.3-0.8	.10	.28			
	36-80	40-80	10-50	15-27	1.30-1.50	14.00-42.00	0.06-0.12	0.0-2.9	0.2-0.5	.05	.24			
75430: Wideman-----	0-5	50-80	10-50	5-15	1.20-1.40	42.00-141.00	0.12-0.16	0.0-2.9	1.0-3.0	.17	.17	5	1	180
	5-13	50-80	10-50	5-15	1.20-1.40	42.00-141.00	0.12-0.16	0.0-2.9	1.0-2.0	.17	.17			
	13-21	30-80	10-50	5-20	1.30-1.50	14.00-42.00	0.12-0.18	0.0-2.9	0.2-2.0	.37	.37			
	21-49	70-99	0-30	1-10	1.40-1.60	42.00-141.00	0.06-0.10	0.0-2.9	0.2-1.0	.10	.10			
	49-71	50-95	5-40	1-15	1.30-1.60	14.00-42.00	0.04-0.12	0.0-2.9	0.3-1.0	.10	.17			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
75451: Gladden-----	0-5	10-45	50-80	10-20	1.25-1.45	4.00-14.00	0.20-0.24	0.0-2.9	2.0-5.0	.37	.37	4	5	56
	5-53	30-75	20-55	5-20	1.30-1.50	4.00-14.00	0.12-0.19	0.0-2.9	0.5-1.0	.24	.43			
	53-80	45-85	5-40	5-20	1.30-1.55	42.00-141.00	0.02-0.13	0.0-2.9	0.1-1.0	.05	.15			
75467: Wilbur-----	0-9	2-35	50-80	10-17	1.30-1.45	4.00-14.00	0.22-0.24	0.0-2.9	1.0-3.0	.49	.49	5	5	56
	9-60	2-35	50-80	10-17	1.30-1.45	4.00-14.00	0.20-0.22	0.0-2.9	0.5-2.0	.64	.64			
75468: Elsah-----	0-10	2-30	50-80	20-27	1.20-1.40	4.00-14.00	0.17-0.24	0.0-2.9	1.0-2.0	.32	.37	3	5	56
	10-20	10-45	35-80	10-25	1.30-1.50	4.00-14.00	0.14-0.18	0.0-2.9	0.2-1.0	.32	.55			
	20-60	20-50	30-80	5-20	1.40-1.60	14.00-42.00	0.10-0.15	0.0-2.9	0.0-0.5	.20	.55			
77000: Killarney-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	4	8	0
	1-5	10-45	50-80	5-15	0.95-1.10	4.00-14.00	0.09-0.15	0.0-2.9	3.0-6.0	.15	.37			
	5-16	10-45	50-80	5-15	0.95-1.10	4.00-14.00	0.12-0.20	0.0-2.9	0.5-2.0	.20	.64			
	16-32	10-40	50-75	10-27	1.15-1.45	4.00-14.00	0.08-0.14	0.0-2.9	0.2-1.0	.17	.55			
	32-48	20-45	40-60	10-27	1.55-1.75	0.01-0.42	0.02-0.06	0.0-2.9	0.1-0.3	.15	.49			
	48-80	20-50	30-50	15-40	1.45-1.65	1.40-4.00	0.03-0.07	0.0-2.9	0.0-0.3	.15	.43			
Frenchmill-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	5	8	0
	1-6	10-45	50-80	5-15	1.10-1.40	4.00-14.00	0.09-0.15	0.0-2.9	1.0-8.0	.15	.37			
	6-19	10-45	45-80	5-15	1.20-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.5-2.0	.20	.43			
	19-27	10-40	50-70	10-27	1.20-1.50	4.00-14.00	0.08-0.14	0.0-2.9	0.2-0.8	.17	.49			
	27-58	23-50	30-50	12-30	1.30-1.55	4.00-14.00	0.06-0.12	0.0-2.9	0.1-0.5	.17	.37			
	58-80	23-60	15-50	20-40	1.20-1.50	4.00-14.00	0.10-0.16	0.0-2.9	0.1-0.3	.20	.20			
77002: Delassus-----	0-3	5-40	50-80	5-15	1.20-1.40	4.00-14.00	0.20-0.24	0.0-2.9	2.0-5.0	.49	.49	3	5	56
	3-7	5-40	50-80	10-20	1.20-1.40	4.00-14.00	0.20-0.24	0.0-2.9	0.5-2.0	.49	.49			
	7-31	5-40	40-70	18-35	1.30-1.50	4.00-14.00	0.15-0.21	0.0-2.9	0.3-1.0	.43	.43			
	31-61	20-60	20-70	7-27	1.60-1.80	0.01-0.42	0.04-0.08	0.0-2.9	0.1-0.3	.43	.49			
	61-80	---	---	---	---	0.00-0.11	---	---	---	---	---			
77005: Hassler-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	5	56
	1-6	15-45	50-80	5-15	1.00-1.20	4.00-14.00	0.20-0.24	0.0-2.9	2.0-10	.24	.28			
	6-11	15-45	50-80	5-15	1.10-1.30	4.00-14.00	0.20-0.24	0.0-2.9	0.5-2.0	.28	.37			
	11-20	5-40	40-65	18-35	1.30-1.50	1.40-4.00	0.14-0.20	0.0-2.9	0.2-1.0	.24	.37			
	20-34	40-52	30-50	15-25	1.30-1.50	1.40-4.00	0.10-0.18	0.0-2.9	0.1-0.7	.17	.37			
	34-42	52-75	10-40	5-15	1.35-1.60	4.00-14.00	0.06-0.12	0.0-2.9	0.1-0.2	.10	.32			
Syenite-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	2	8	0
	1-4	15-45	50-80	5-15	1.00-1.20	4.00-14.00	0.20-0.24	0.0-2.9	2.0-10	.28	.37			
	4-9	15-45	50-80	5-15	1.10-1.30	4.00-14.00	0.20-0.24	0.0-2.9	0.5-2.0	.37	.43			
	9-19	5-40	40-65	18-35	1.30-1.50	1.40-4.00	0.14-0.20	0.0-2.9	0.2-0.9	.28	.43			
	19-29	40-52	30-50	15-25	1.30-1.50	1.40-4.00	0.10-0.18	0.0-2.9	0.1-0.7	.28	.43			
	---	---	---	---	---	0.00-0.11	---	---	---	---	---			
77008: Hassler-----	0-1	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	3	5	56
	1-3	15-45	50-80	5-15	1.00-1.20	4.00-14.00	0.20-0.24	0.0-2.9	2.0-10	.28	.37			
	3-9	15-45	50-80	5-15	1.10-1.30	4.00-14.00	0.20-0.24	0.0-2.9	0.5-2.0	.32	.37			
	9-24	5-40	40-65	18-35	1.30-1.50	1.40-4.00	0.14-0.20	0.0-2.9	0.2-1.0	.28	.37			
	24-31	40-52	30-50	15-27	1.30-1.50	1.40-4.00	0.10-0.18	0.0-2.9	0.1-0.5	.15	.32			
	31-48	52-75	10-40	5-15	1.35-1.60	4.00-14.00	0.06-0.12	0.0-2.9	0.1-0.2	.17	.32			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
80000: Calhoun-----	0-9	5-15	70-85	10-25	1.30-1.65	4.00-14.00	0.22-0.24	0.0-2.9	0.5-4.0	.55	.55	5	5	56
	9-24	5-15	70-85	10-25	1.30-1.65	1.40-4.00	0.20-0.22	0.0-2.9	0.1-1.0	.64	.64			
	24-36	0-15	65-85	15-30	1.30-1.65	1.40-4.00	0.20-0.22	3.0-5.9	0.1-1.0	.64	.64			
	36-80	0-15	65-85	18-30	1.30-1.65	0.42-1.40	0.20-0.22	3.0-5.9	0.1-1.0	.64	.64			
80001: Oaklimeter-----	0-14	0-5	80-85	5-15	1.40-1.50	4.00-14.00	0.20-0.22	0.0-2.9	1.0-4.0	.43	.43	5	5	56
	14-34	0-5	75-85	5-18	1.40-1.50	4.00-14.00	0.20-0.22	0.0-2.9	0.1-1.0	.64	.64			
	34-57	5-10	80-85	5-18	1.40-1.50	4.00-14.00	0.20-0.22	0.0-2.9	0.1-0.5	.64	.64			
	57-71	0-5	45-80	10-30	1.40-1.50	4.00-14.00	0.20-0.22	0.0-2.9	0.1-0.5	.64	.64			
82000: Dubbs-----	0-9	10-35	50-75	5-20	1.40-1.50	4.00-14.00	0.22-0.24	0.0-2.9	0.5-2.0	.55	.55	5	5	56
	9-58	10-50	20-75	15-30	1.45-1.55	4.00-14.00	0.18-0.22	3.0-5.9	0.1-1.0	.55	.55			
	58-80	20-65	30-65	10-25	1.40-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.1-0.3	.55	.55			
82001: Amagon-----	0-5	0-10	65-80	18-25	1.25-1.50	4.00-14.00	0.16-0.24	0.0-2.9	2.0-8.0	.37	.37	5	5	56
	5-20	0-10	65-80	18-25	1.25-1.50	0.42-1.40	0.16-0.24	0.0-2.9	0.5-1.0	.64	.64			
	20-53	0-10	55-70	18-35	1.25-1.60	0.42-1.40	0.16-0.24	3.0-6.0	0.2-1.0	.43	.43			
	53-80	15-20	50-70	20-35	1.25-1.60	0.42-1.40	0.15-0.24	0.0-2.9	0.0-0.5	.55	.55			
82002: Forestdale-----	0-2	---	---	---	---	42.00-141.00	0.10-0.20	---	35-90	---	---	5	7	38
	2-9	1-15	50-70	27-40	1.50-1.55	1.40-4.00	0.20-0.22	3.0-5.9	2.0-6.0	.28	.28			
	9-51	1-10	35-60	35-65	1.50-1.60	0.01-0.42	0.14-0.18	6.0-8.9	0.2-0.5	.37	.37			
	51-80	1-60	25-60	15-50	1.45-1.55	1.40-4.00	0.17-0.22	3.0-5.9	0.1-0.3	.37	.37			
82005: Malden-----	0-6	70-90	0-25	0-15	1.45-1.60	42.00-141.00	0.06-0.10	0.0-2.9	0.5-3.0	.05	.05	5	2	134
	6-37	70-90	0-25	0-12	1.50-1.65	42.00-141.00	0.04-0.10	0.0-2.9	0.1-0.5	.10	.10			
	37-80	85- 100	0-15	0-8	1.55-1.70	42.00-141.00	0.02-0.06	0.0-2.9	0.0-0.5	.05	.05			
82006: Bosket-----	0-9	25-80	15-50	5-15	1.30-1.50	14.00-42.00	0.16-0.18	0.0-2.9	0.5-2.0	.20	.20	5	3	86
	9-20	25-80	15-50	4-15	1.30-1.50	14.00-42.00	0.12-0.19	0.0-2.9	0.1-1.0	.28	.28			
	20-45	20-75	10-50	18-30	1.25-1.50	4.00-14.00	0.12-0.19	0.0-2.9	0.1-1.0	.24	.24			
	45-80	45-90	5-50	4-20	1.30-1.50	14.00-42.00	0.05-0.16	0.0-2.9	0.0-0.5	.15	.15			
82007: Bosket-----	0-7	25-80	15-50	5-15	1.30-1.50	14.00-42.00	0.20-0.22	0.0-2.9	0.5-2.0	.37	.37	5	3	86
	7-16	25-80	15-50	5-15	1.30-1.50	14.00-42.00	0.12-0.19	0.0-2.9	0.1-1.0	.43	.43			
	16-37	20-75	10-50	18-30	1.25-1.50	4.00-14.00	0.12-0.19	0.0-2.9	0.1-1.0	.32	.32			
	37-67	45-90	10-50	8-20	1.30-1.50	14.00-42.00	0.05-0.16	0.0-2.9	0.0-0.5	.37	.37			
82009: Forestdale-----	0-4	1-15	50-70	27-40	1.50-1.55	1.40-4.00	0.20-0.22	3.0-5.9	2.0-4.0	.28	.28	5	7	38
	4-40	1-10	35-60	35-60	1.50-1.60	0.01-0.42	0.14-0.18	6.0-8.9	0.2-0.5	.37	.37			
	40-60	1-60	25-60	10-40	1.45-1.55	1.40-4.00	0.17-0.22	0.0-5.9	0.1-0.3	.43	.43			
82010: Amagon-----	0-12	5-15	65-85	15-25	1.25-1.50	4.00-14.00	0.16-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	12-28	5-15	65-85	15-25	1.25-1.50	0.42-1.40	0.16-0.24	0.0-2.9	0.5-1.0	.55	.55			
	28-70	5-25	35-75	20-35	1.25-1.50	0.42-1.40	0.16-0.24	3.0-5.9	0.1-1.0	.43	.43			
	70-80	5-60	25-70	15-35	1.25-1.60	0.42-14.00	0.14-0.24	0.0-2.9	0.0-0.5	.49	.49			



Table 19.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
<b>60033:</b>				
Wrengart-----	0-5	9.0-18	---	5.6-7.3
	5-11	6.0-15	---	5.6-7.3
	11-34	11-22	10-20	5.1-6.5
	34-57	11-22	10-20	4.5-6.5
	57-72	10-16	5.0-15	5.1-7.8
<b>60046:</b>				
Minnith-----	0-5	7.0-17	5.0-13	5.1-7.3
	5-35	15-25	12-23	4.5-7.3
	35-80	5.0-11	12-18	4.5-7.3
<b>60053:</b>				
Winfield-----	0-6	10-15	7.0-12	5.1-7.3
	6-20	12-17	8.0-13	5.1-6.5
	20-26	20-30	17-27	4.5-6.0
	26-52	10-20	7.0-17	5.1-6.0
	52-60	10-14	7.0-11	5.1-6.0
<b>60054:</b>				
Minnith-----	0-5	7.0-17	5.0-13	5.1-7.3
	5-35	15-25	12-23	4.5-7.3
	35-59	5.0-11	12-18	4.5-7.3
	59-80	8.0-18	5.0-15	5.1-7.3
<b>60055:</b>				
Winfield-----	0-9	10-15	10-15	5.1-7.3
	9-13	12-17	12-17	5.1-6.5
	13-62	13-18	13-18	4.5-6.0
	62-80	10-14	10-14	5.1-7.3
<b>66000:</b>				
Moniteau-----	0-10	7.0-16	4.3-10	5.1-7.3
	10-18	6.0-12	4.0-8.0	4.5-6.5
	18-34	9.0-25	4.0-24	3.5-7.3
	34-75	9.0-20	5.0-15	5.1-7.8
<b>66054:</b>				
Wakeland-----	0-6	6.0-20	4.0-18	5.6-7.3
	6-24	4.0-18	3.0-16	5.6-7.3
	24-58	4.0-18	3.0-16	5.6-7.3
	58-80	4.0-18	3.0-16	4.5-7.3
<b>66055:</b>				
Haymond-----	0-5	6.0-20	4.0-18	5.6-7.8
	5-51	6.0-20	5.0-19	5.6-7.8
	51-80	6.0-20	5.0-19	5.6-7.8
<b>73055:</b>				
Alred-----	0-1	10-40	5.0-30	3.5-6.5
	1-7	4.4-19	2.3-11	4.5-6.0
	7-11	3.7-7.6	1.6-3.9	4.5-6.0
	11-30	3.2-9.7	1.7-6.4	4.5-5.5
	30-80	9.8-46	6.7-53	5.1-6.5

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
<b>73055:</b>				
<b>Rueter</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-4	6.8-23	2.8-10	4.5-6.0
	4-17	2.5-7.0	0.8-4.1	4.5-6.0
	17-32	2.9-11	1.7-7.2	4.5-5.5
	32-43	8.6-21	5.5-17	5.1-6.0
	43-71	12-42	9.3-36	5.1-6.5
<b>73100:</b>				
<b>Wrengart</b> -----	0-8	7.0-14	3.0-12	5.1-7.3
	8-36	15-26	11-21	4.5-7.3
	36-61	11-22	7.0-18	5.1-7.3
	61-80	24-40	19-35	5.1-7.8
<b>73101:</b>				
<b>Wrengart</b> -----	0-8	7.0-14	3.0-12	5.1-7.3
	8-36	15-26	11-21	4.5-7.3
	36-61	11-22	7.0-18	4.5-7.3
	61-80	24-40	19-35	5.1-7.8
<b>73139:</b>				
<b>Poynor</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-4	6.9-15	2.8-7.0	3.5-6.0
	4-13	3.2-7.3	1.2-3.2	3.5-6.0
	13-24	2.9-12	1.8-8.3	4.5-5.5
	24-80	8.5-22	6.1-19	4.5-5.5
<b>Clarksville</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-5	7.1-25	2.3-21	3.5-6.0
	5-8	3.7-8.1	1.7-5.2	3.5-6.0
	8-18	3.7-9.6	1.9-7.9	4.5-5.5
	18-42	5.1-13	3.7-9.1	4.5-5.5
	42-65	6.4-16	5.2-12	4.5-5.5
<b>Scholten</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-3	9.2-18	3.6-8.5	3.5-6.0
	3-8	5.6-8.6	2.3-4.3	3.5-6.0
	8-17	7.3-18	4.5-13	4.5-5.5
	17-41	5.7-14	4.6-11	4.5-5.5
	41-80	7.6-22	5.2-18	4.5-5.5
<b>73140:</b>				
<b>Clarksville</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-6	7.1-25	2.3-21	3.5-6.0
	6-13	3.7-8.1	1.7-5.2	3.5-6.0
	13-21	3.7-9.6	1.9-7.9	4.5-5.5
	21-43	5.1-13	3.7-9.1	4.5-5.5
	43-66	6.4-16	5.2-12	4.5-5.5
<b>Scholten</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-6	5.5-11	1.9-4.5	3.5-6.0
	6-13	3.9-6.4	1.7-3.9	3.5-6.0
	13-34	3.0-13	1.5-12	4.5-5.5
	34-58	3.4-11	2.1-8.3	4.5-5.5
	58-80	5.8-16	4.5-14	4.5-5.5

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
<b>73141:</b>				
Firebaugh-----	0-1	10-40	5.0-30	3.5-6.5
	1-4	6.5-13	3.5-7.9	4.5-6.0
	4-8	5.2-7.3	2.5-5.0	4.5-6.0
	8-21	9.7-20	7.6-17	4.5-5.5
	21-36	5.9-17	4.3-16	4.5-5.5
	36-71	6.6-23	5.4-21	4.5-5.5
<b>73145:</b>				
Crider-----	0-8	8.5-16	7.4-9.1	5.1-7.3
	8-32	8.8-14	6.1-12	5.1-7.3
	32-74	9.3-20	6.3-10	5.1-6.5
<b>73146:</b>				
Marquand-----	0-5	6.3-13	2.8-12	5.6-6.5
	5-8	6.3-13	2.8-12	5.6-6.5
	8-22	8.1-23	4.5-18	4.5-6.0
	22-43	8.8-20	7.4-15	4.5-5.5
	43-80	8.1-26	6.1-22	4.5-5.5
<b>73150:</b>				
Caneyville-----	0-8	8.7-18	4.9-9.0	4.5-6.0
	8-18	16-36	11-33	5.1-7.3
	18-30	16-36	11-33	5.6-7.8
	30-80	---	---	---
Bucklick-----	0-3	8.0-18	4.4-7.0	5.6-7.3
	3-16	13-27	6.0-10	5.6-7.3
	16-45	22-33	16-30	5.6-7.3
	45-80	---	---	---
<b>73151:</b>				
Caneyville-----	0-1	10-40	5.0-30	3.5-6.5
	1-4	8.7-18	4.9-9.0	4.5-6.0
	4-11	16-36	11-33	5.1-7.3
	11-31	16-36	11-33	5.6-7.8
	31-80	---	---	---
Gasconade-----	0-3	37-53	---	6.1-7.8
	3-16	27-46	---	6.1-7.8
	16-80	---	---	---
Bucklick-----	0-1	10-40	5.0-30	3.5-6.5
	1-6	8.0-18	4.4-7.0	5.6-7.3
	6-31	13-27	6.0-10	5.6-7.3
	31-47	22-33	16-30	5.6-7.3
	47-80	---	---	---
<b>73156:</b>				
Alred-----	0-1	10-40	5.0-30	3.5-6.5
	1-6	4.4-19	2.3-11	4.5-6.0
	6-11	3.7-7.6	1.6-3.9	4.5-6.0
	11-31	3.2-9.7	1.7-6.4	4.5-5.5
	31-79	9.8-46	6.7-53	5.1-6.5
Gepp-----	0-1	10-40	5.0-30	3.5-6.5
	1-6	8.2-22	3.6-15	4.5-6.0
	6-12	7.5-22	4.2-15	4.5-6.0
	12-67	10-37	6.5-33	5.1-6.0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
73157:				
Captina-----	0-5	8.3-14	3.0-12	4.5-6.5
	5-25	8.3-20	5.4-17	4.5-5.5
	25-31	9.3-21	6.5-14	3.5-5.5
	31-78	5.7-26	4.4-22	3.5-5.5
73223:				
Coulstone-----	0-1	10-40	5.0-30	3.5-6.5
	1-6	3.0-12	2.0-9.0	4.5-6.0
	6-29	2.0-10	1.0-5.0	4.5-6.0
	29-42	3.0-18	1.0-9.0	4.5-6.0
	42-80	4.0-18	1.0-9.0	3.5-5.5
Bender-----	0-1	10-40	5.0-30	3.5-6.5
	1-5	4.0-18	2.0-8.0	4.5-6.0
	5-21	2.0-8.0	1.0-5.0	4.5-6.0
	21-31	2.0-15	1.0-10	3.5-6.0
	31-80	---	---	---
73264:				
Alred-----	0-1	10-40	5.0-30	3.5-6.5
	1-3	4.4-19	2.2-11	4.5-6.0
	3-8	3.7-7.6	1.6-3.9	4.5-6.0
	8-22	3.2-11	1.7-6.4	4.5-5.5
	22-80	9.8-46	6.7-53	5.1-6.5
Wrengart-----	0-1	10-40	5.0-30	3.5-6.5
	1-10	5.0-20	3.0-18	5.1-7.3
	10-30	10-20	7.0-18	4.5-6.5
	30-53	10-20	7.0-18	5.1-6.0
	53-80	10-20	1.0-18	5.1-7.3
73265:				
Captina-----	0-8	8.3-14	3.0-12	4.5-6.5
	8-26	8.3-20	5.4-17	4.5-5.5
	26-43	9.3-21	6.5-14	3.5-5.5
	43-80	5.7-26	4.4-22	3.5-5.5
Scholten-----	0-2	9.2-18	3.6-8.5	3.5-6.0
	2-7	5.6-8.6	2.3-4.3	4.5-6.0
	7-16	7.3-18	4.5-13	3.5-5.5
	16-40	5.7-14	4.6-11	3.5-5.5
	40-80	7.6-22	5.2-18	3.5-5.5
73266:				
Hildebrecht-----	0-4	15-25	10-20	4.5-6.0
	4-36	10-20	7.0-15	4.5-6.0
	36-39	7.0-15	5.0-15	4.5-5.5
	39-62	7.0-15	5.0-12	4.5-5.5
	62-80	12-25	10-20	5.1-6.0
73267:				
Yelton-----	0-5	5.0-15	3.0-10	4.5-6.0
	5-11	5.0-15	3.0-10	4.5-6.5
	11-29	12-22	10-25	3.5-5.5
	29-42	5.0-14	5.0-15	3.5-5.5
	42-80	10-22	7.0-24	3.5-5.5

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
73267:				
Scholten-----	0-2	9.2-18	3.6-8.5	3.5-6.0
	2-7	5.6-8.6	2.3-4.3	4.5-6.0
	7-16	7.3-18	4.5-13	3.5-5.5
	16-40	5.7-14	4.6-11	3.5-5.5
	40-80	7.6-22	5.2-18	3.5-5.5
73269:				
Brussels-----	0-1	10-40	5.0-30	3.5-6.5
	1-10	20-30	20-30	6.1-7.8
	10-49	20-30	20-30	6.1-8.4
	49-70	20-30	20-30	6.1-8.4
Gasconade-----	0-9	30-60	30-60	6.1-7.8
	9-14	30-60	30-60	6.1-7.8
	14-80	---	---	---
Rock outcrop.				
73270:				
Wrengart-----	0-6	9.0-23	4.0-19	5.6-7.3
	6-26	15-26	12-23	4.5-6.5
	26-45	11-22	6.0-17	5.1-7.3
	45-60	11-22	6.0-17	5.1-7.3
	60-80	25-40	20-35	5.1-7.3
73343:				
Captina-----	0-4	8.3-14	3.0-12	4.5-6.5
	4-20	8.3-20	5.4-17	4.5-5.5
	20-28	9.3-21	6.5-14	3.5-5.5
	28-75	5.7-26	4.4-22	3.5-5.5
73344:				
Captina-----	0-7	7.5-14	3.0-12	4.5-6.5
	7-24	8.3-20	5.4-17	4.5-5.5
	24-47	9.3-21	6.5-14	3.5-5.5
	47-75	5.7-26	4.4-22	3.5-5.5
73345:				
Hildebrecht-----	0-11	8.3-14	3.0-12	4.5-6.0
	11-27	8.3-20	5.4-17	4.5-6.0
	27-44	9.3-21	6.5-14	3.6-5.5
	44-60	5.7-26	4.4-22	5.1-6.0
73346:				
Hildebrecht-----	0-6	8.3-14	3.0-12	4.5-6.0
	6-31	8.3-20	5.4-17	3.5-6.0
	31-52	9.3-21	6.5-14	3.5-5.5
	52-80	5.7-26	4.4-22	5.1-6.0
74644:				
Deible-----	0-7	7.2-14	4.4-13	5.1-7.3
	7-16	8.8-12	4.0-9.5	4.5-7.3
	16-40	12-33	9.3-29	4.5-7.8
	40-65	13-23	11-26	5.1-8.4
74646:				
Cornwall-----	0-5	7.0-15	5.0-15	5.1-7.3
	5-17	7.0-19	7.1-19	4.5-5.5
	17-39	7.0-19	7.3-16	4.5-5.5
	39-60	7.0-20	7.6-18	4.5-5.5

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
<b>74648:</b>				
<b>Aslinger</b> -----	0-4	8.3-15	3.3-8.8	4.5-6.5
	4-8	5.8-11	3.0-7.4	4.5-6.5
	8-21	10-17	6.8-14	4.5-6.0
	21-29	6.2-14	4.7-11	4.5-5.5
	29-55	5.2-12	4.0-9.3	4.5-5.5
	55-70	9.8-23	7.4-19	3.5-5.5
<b>74649:</b>				
<b>Aslinger</b> -----	0-3	8.3-15	3.3-8.8	4.5-6.5
	3-8	5.8-11	3.0-7.4	4.5-6.5
	8-20	10-17	6.8-14	4.5-6.0
	20-39	6.2-14	4.7-11	4.5-5.5
	39-52	5.2-12	4.0-9.3	4.5-5.5
	52-80	9.8-23	7.4-19	3.5-5.5
<b>Waben</b> -----	0-6	5.0-15	4.0-12	5.1-6.5
	6-15	5.0-15	4.0-12	4.5-6.0
	15-54	5.0-15	4.0-12	4.5-5.5
	54-80	5.0-15	4.0-12	4.5-5.5
<b>74679:</b>				
<b>Higdon</b> -----	0-7	9.7-12	6.3-8.8	5.1-7.3
	7-13	9.3-12	4.7-6.9	5.1-7.3
	13-43	8.3-19	5.8-14	5.1-7.3
	43-80	7.8-21	12-19	5.1-7.3
<b>74680:</b>				
<b>Moniteau</b> -----	0-6	7.0-16	4.3-10	5.1-7.3
	6-15	6.0-12	4.0-8.0	4.5-6.5
	15-52	15-25	14-24	4.5-7.3
	52-78	9.0-20	10-15	5.1-7.8
<b>74685:</b>				
<b>Auxvasse</b> -----	0-6	7.2-14	4.4-13	5.1-7.3
	6-17	8.8-12	4.0-9.5	5.1-6.5
	17-51	12-33	9.3-29	3.5-6.5
	51-80	13-23	9.0-26	5.1-6.5
<b>75379:</b>				
<b>Kaintuck</b> -----	0-9	4.0-12	5.0-10	5.6-7.3
	9-36	5.0-12	4.0-10	5.6-7.3
	36-80	2.0-8.0	2.0-8.0	5.6-7.3
<b>75381:</b>				
<b>Bearthicket</b> -----	0-6	8.1-13	3.6-9.2	5.1-7.3
	6-19	7.9-12	4.0-8.0	5.1-7.3
	19-45	6.6-14	3.9-8.1	5.1-7.3
	45-64	5.9-12	5.4-10	5.1-7.3
	64-80	4.7-6.6	5.6-6.0	5.6-7.3
<b>75395:</b>				
<b>Jamesfin</b> -----	0-6	6.0-20	4.0-18	5.6-7.8
	6-15	6.0-20	4.0-18	5.6-7.8
	15-53	6.0-20	5.0-19	5.6-7.8
	53-62	6.0-20	5.0-19	5.6-7.8

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
75408:				
Secesh-----	0-4	9.3-11	4.4-7.1	5.1-6.0
	4-10	7.3-9.8	3.7-6.0	5.1-6.0
	10-26	6.9-14	3.5-11	4.5-6.0
	26-36	5.9-9.8	2.8-5.1	4.5-6.0
	36-80	5.1-8.6	3.0-4.8	4.5-6.0
75409:				
Relfe-----	0-7	5.4-12	5.4-10	5.6-7.3
	7-64	1.4-6.3	0.5-4.3	5.6-7.3
75411:				
Tilk-----	0-8	7.8-22	3.7-18	5.1-6.5
	8-16	4.7-7.1	1.8-3.8	4.5-6.0
	16-47	3.3-8.0	1.0-5.9	4.5-6.0
	47-70	2.4-8.6	0.5-6.2	5.1-6.0
75416:				
Gladden-----	0-5	7.5-11	0.0-9.8	5.6-7.3
	5-26	6.0-8.5	0.0-6.2	5.6-7.3
	26-58	2.9-12	0.0-12	5.6-7.3
	58-77	1.0-4.3	0.0-1.1	5.1-6.5
75417:				
Relfe-----	0-6	6.4-12	3.9-10	5.1-7.3
	6-80	1.5-6.3	0.5-4.3	5.1-7.3
Sandbur-----	0-8	4.0-10	2.0-10	5.6-7.3
	8-50	5.0-8.0	2.0-8.0	5.6-7.3
	50-80	2.0-10	0.5-5.0	5.1-6.5
75426:				
Gabriel-----	0-14	15-25	11-21	5.6-7.3
	14-46	15-25	10-20	5.1-7.3
	46-81	15-25	12-22	5.1-7.3
75428:				
Tilk-----	0-4	7.8-22	3.7-18	5.1-6.5
	4-10	4.7-8.0	1.8-3.8	4.5-6.0
	10-35	3.3-8.0	1.0-5.9	4.5-6.0
	35-65	2.4-8.6	0.5-6.2	5.1-6.0
Cornwall-----	0-8	7.0-15	3.0-15	5.1-7.3
	8-35	7.0-19	4.0-19	4.5-5.5
	35-62	7.0-19	6.0-16	4.5-5.5
	62-80	7.0-20	6.0-18	4.5-5.5
Poynor-----	0-1	10-40	5.0-30	3.5-6.5
	1-4	6.9-15	2.8-7.0	3.5-6.0
	4-9	3.2-7.3	1.2-3.2	3.5-6.0
	9-26	2.9-12	1.8-8.3	4.5-5.5
	26-80	8.5-22	6.1-19	4.5-5.5
75429:				
Tilk-----	0-8	5.0-12	2.0-10	5.1-6.5
	8-14	2.0-12	2.0-10	4.5-6.0
	14-37	2.0-12	2.0-10	4.5-6.0
	37-80	2.0-12	2.0-10	5.1-6.0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
<b>75429:</b>				
<b>Secesh</b> -----	0-10	9.3-10	4.4-7.1	5.1-6.5
	10-16	6.9-9.8	3.5-4.3	4.5-6.0
	16-36	6.9-14	3.5-11	4.5-6.0
	36-80	5.9-9.8	2.8-5.1	4.5-6.0
<b>75430:</b>				
<b>Wideman</b> -----	0-5	1.0-15	1.0-12	5.1-7.3
	5-13	1.0-15	1.0-12	5.1-7.3
	13-21	2.9-15	2.0-12	5.1-7.3
	21-49	1.0-10	1.0-10	5.1-7.3
	49-71	1.0-15	1.0-10	5.1-7.3
<b>75451:</b>				
<b>Gladden</b> -----	0-5	10-20	5.0-10	5.6-7.3
	5-53	5.0-10	3.0-7.0	5.6-7.3
	53-80	5.0-10	3.0-7.0	5.1-6.5
<b>75467:</b>				
<b>Wilbur</b> -----	0-9	4.0-16	4.0-16	5.6-7.3
	9-60	4.0-15	4.0-15	5.6-7.3
<b>75468:</b>				
<b>Elsah</b> -----	0-10	11-19	11-19	5.6-7.3
	10-20	8.0-17	8.0-17	5.6-7.3
	20-60	5.0-12	5.0-12	5.6-7.3
<b>77000:</b>				
<b>Killarney</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-5	7.5-10	2.6-7.6	4.5-6.0
	5-16	3.5-5.9	1.6-3.0	4.5-6.0
	16-32	4.2-11	2.3-8.0	4.5-5.5
	32-48	4.9-10	4.0-7.6	3.5-5.0
	48-80	6.3-12	4.3-10	4.5-5.5
<b>Frenchmill</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-6	5.6-14	2.9-10	4.5-6.0
	6-19	3.7-8.1	2.1-3.9	4.5-5.5
	19-27	4.7-13	2.6-8.3	4.5-5.5
	27-58	6.2-25	4.2-23	4.5-5.5
	58-80	9.3-18	7.4-13	4.5-5.5
<b>77002:</b>				
<b>Delassus</b> -----	0-3	6.9-11	5.0-12	4.5-6.0
	3-7	6.0-15	3.0-8.0	4.5-6.0
	7-31	9.2-20	5.0-15	3.5-5.5
	31-61	7.1-13	3.0-15	3.5-5.5
	61-80	---	---	---
<b>77005:</b>				
<b>Hassler</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-6	12-22	4.9-16	4.5-6.0
	6-11	5.5-10	2.7-8.8	4.5-6.0
	11-20	7.4-22	4.8-17	4.5-5.5
	20-34	8.5-15	5.5-12	4.5-5.5
	34-42	7.4-15	4.5-12	4.5-5.5
	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
<b>77005:</b>				
<b>Syenite</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-4	8.0-22	3.0-16	4.5-6.0
	4-9	5.5-10	2.7-8.8	4.5-6.0
	9-19	9.5-21	6.5-17	4.5-5.5
	19-29	7.6-14	5.5-12	4.5-5.5
	---	---	---	---
<b>77008:</b>				
<b>Hassler</b> -----	0-1	10-40	5.0-30	3.5-6.5
	1-3	12-22	4.9-16	4.5-6.0
	3-9	5.5-10	2.7-8.8	4.5-6.0
	9-24	9.5-21	6.5-16	4.5-5.5
	24-31	8.5-14	5.5-12	4.5-5.5
	31-48	7.4-15	4.5-12	4.5-5.5
	---	---	---	---
<b>80000:</b>				
<b>Calhoun</b> -----	0-9	5.0-20	4.0-15	4.5-7.3
	9-24	5.0-15	2.0-12	3.5-6.0
	24-36	5.0-20	5.0-20	3.5-5.5
	36-80	5.0-20	5.0-20	4.5-7.8
<b>80001:</b>				
<b>Oaklimeter</b> -----	0-14	5.0-15	3.0-15	4.5-7.3
	14-34	5.0-15	3.0-15	4.5-6.5
	34-57	4.0-12	1.0-10	4.5-5.5
	57-71	4.0-12	1.0-10	4.5-5.5
<b>82000:</b>				
<b>Dubbs</b> -----	0-9	5.0-15	2.0-12	4.5-6.0
	9-58	5.0-15	2.0-12	4.5-6.0
	58-80	5.0-25	2.0-20	4.5-6.0
<b>82001:</b>				
<b>Amagon</b> -----	0-5	10-25	7.0-20	5.1-6.5
	5-20	5.0-20	2.0-15	4.5-6.5
	20-53	10-25	7.0-20	4.5-6.5
	53-80	10-25	7.0-20	5.1-6.5
<b>82002:</b>				
<b>Forestdale</b> -----	0-2	10-40	5.0-30	3.5-6.5
	2-9	17-34	12-13	4.5-6.5
	9-51	19-38	16-21	4.5-7.8
	51-80	15-24	13-21	4.5-7.8
<b>82005:</b>				
<b>Malden</b> -----	0-6	2.0-9.0	1.0-7.0	5.1-7.3
	6-37	3.0-8.0	1.0-6.0	5.1-6.5
	37-80	2.0-6.0	1.0-5.0	5.1-6.5
<b>82006:</b>				
<b>Bosket</b> -----	0-9	2.0-15	0.5-12	4.5-7.3
	9-20	2.0-15	0.5-12	4.5-6.5
	20-45	10-25	2.0-20	5.1-6.5
	45-80	2.0-15	0.5-12	4.5-6.5
<b>82007:</b>				
<b>Bosket</b> -----	0-7	5.0-15	3.0-12	5.1-7.3
	7-16	5.0-15	3.0-12	5.1-6.5
	16-37	10-25	7.0-22	5.1-6.5
	37-67	5.0-15	3.0-12	4.5-6.5

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-	Effective	Soil reaction
		exchange capacity	cation- exchange capacity	
	Inches	meq/100 g	meq/100 g	pH
82009:				
Forestdale-----	0-4	17-34	12-13	4.5-6.5
	4-40	19-38	16-21	4.5-6.0
	40-60	15-24	13-21	4.5-7.8
82010:				
Amagon-----	0-12	8.0-15	8.0-20	4.5-7.3
	12-28	5.0-15	5.0-20	4.5-6.0
	28-70	8.0-20	5.0-20	4.5-6.0
	70-80	10-20	5.0-20	5.1-7.3
82011:				
Crowley-----	0-9	10-25	5.0-15	5.1-7.3
	9-16	8.0-25	5.0-15	5.1-6.5
	16-39	22-45	16-40	4.5-7.3
	39-56	8.0-25	5.0-20	4.5-7.3
	56-80	3.0-20	1.0-15	4.5-7.3
86000:				
Dubbs-----	0-5	5.0-15	2.0-10	4.5-6.0
	5-47	5.0-15	2.0-10	4.5-6.0
	47-80	3.0-20	2.0-15	4.5-6.0
86001:				
Calhoun-----	0-6	5.0-20	4.0-15	4.5-7.3
	6-25	5.0-15	2.0-12	4.5-7.3
	25-50	5.0-15	2.0-12	4.5-5.5
	50-80	5.0-20	5.0-20	4.5-8.4
86002:				
Falaya-----	0-10	10-15	5.0-10	4.5-6.5
	10-34	5.0-15	2.0-10	4.5-5.5
	34-69	5.0-15	2.0-10	4.5-5.5
	69-80	5.0-15	2.0-10	4.5-5.5
86003:				
Amagon-----	0-4	8.0-16	8.0-20	4.5-7.3
	4-15	5.0-15	5.0-20	4.5-6.0
	15-71	8.0-21	5.0-20	4.5-6.0
	71-80	10-20	5.0-20	5.1-7.3
86004:				
Forestdale-----	0-4	15-35	10-30	4.5-6.5
	4-55	15-35	10-30	4.5-7.8
	55-63	15-35	10-30	4.5-7.8
90000:				
Memphis-----	0-4	9.0-23	8.0-21	4.5-7.3
	4-9	11-25	10-22	4.5-7.3
	9-50	11-22	10-20	4.5-6.0
	50-65	11-22	10-20	5.1-6.0
90001:				
Memphis-----	0-2	9.0-23	8.0-21	4.5-6.0
	2-64	11-25	10-22	4.5-6.0
	64-78	11-22	10-20	5.1-6.0
99001.				
Water				

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
99003. Miscellaneous water				
99007. Dam				
99015: Udorthents.				
Water.				

Table 20.--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	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
60033: Wrengart-----	C	Medium	November	2.0-3.5	2.8-4.3	---	---	None	---	None
			December	2.0-3.5	2.8-4.3	---	---	None	---	None
			January	2.0-3.5	2.8-4.3	---	---	None	---	None
			February	2.0-3.5	2.8-4.3	---	---	None	---	None
			March	2.0-3.5	2.8-4.3	---	---	None	---	None
			April	2.0-3.5	2.8-4.3	---	---	None	---	None
60046: Minnith-----	C	Very high	January	3.0-6.0	3.5-6.5	---	---	None	---	None
			February	3.0-6.0	3.5-6.5	---	---	None	---	None
			March	3.0-6.0	3.5-6.5	---	---	None	---	None
			April	3.0-6.0	3.5-6.5	---	---	None	---	None
			November	3.0-6.0	3.5-6.5	---	---	None	---	None
			December	3.0-6.0	3.5-6.5	---	---	None	---	None
60053: Winfield-----	B	Medium	December	1.7-2.5	5.0-5.0	---	---	None	---	None
			January	1.7-2.5	5.0-5.0	---	---	None	---	None
			February	1.7-2.5	5.0-5.0	---	---	None	---	None
			March	1.7-2.5	5.0-5.0	---	---	None	---	None
			April	1.7-2.5	5.0-5.0	---	---	None	---	None
60054: Minnith-----	C	High	January	3.0-6.0	3.5-6.5	---	---	None	---	None
			February	3.0-6.0	3.5-6.5	---	---	None	---	None
			March	3.0-6.0	3.5-6.5	---	---	None	---	None
			April	3.0-6.0	3.5-6.5	---	---	None	---	None
			November	3.0-6.0	3.5-6.5	---	---	None	---	None
			December	3.0-6.0	3.5-6.5	---	---	None	---	None
60055: Winfield-----	B	Low	February	2.0-3.5	>6.0	---	---	None	---	None
			March	2.0-3.5	>6.0	---	---	None	---	None
			April	2.0-3.5	>6.0	---	---	None	---	None
66000: Moniteau-----	C/D	Medium	January	0.0-1.0	>6.0	---	---	None	Very brief	Occasional
			February	0.0-1.0	>6.0	---	---	None	Very brief	Occasional
			March	0.0-1.0	>6.0	---	---	None	Very brief	Occasional
			April	0.0-1.0	>6.0	---	---	None	Very brief	Occasional
			May	0.0-1.0	>6.0	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	0.0-1.0	>6.0	---	---	None	Very brief	Occasional
			December	0.0-1.0	>6.0	---	---	None	Very brief	Occasional

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Surface water depth	Ponding		Flooding	
				Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
66054: Wakeland-----	C	Low	November	---	---	---	---	None	Very brief	Frequent
			December	1.2-2.0	>6.0	---	---	None	Very brief	Frequent
			January	1.2-2.0	>6.0	---	---	None	Very brief	Frequent
			February	1.2-2.0	>6.0	---	---	None	Very brief	Frequent
			March	1.2-2.0	>6.0	---	---	None	Very brief	Frequent
			April	1.2-2.0	>6.0	---	---	None	Very brief	Frequent
			May	---	---	---	---	None	Very brief	Frequent
			June	---	---	---	---	None	Very brief	Occasional
			July	---	---	---	---	None	Very brief	Occasional
			August	---	---	---	---	None	Very brief	Occasional
			September	---	---	---	---	None	Very brief	Occasional
			October	---	---	---	---	None	Very brief	Occasional
66055: Haymond-----	B	Very low	November	---	---	---	---	None	Very brief	Occasional
			December	---	---	---	---	None	Very brief	Occasional
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
73055: Alred-----	B	High	Jan-Dec	---	---	---	---	None	---	None
Rueter-----	B	High	Jan-Dec	---	---	---	---	None	---	None
73100: Wrengart-----	C	Low	January	2.0-3.5	2.8-4.3	---	---	None	---	None
			February	2.0-3.5	2.8-4.3	---	---	None	---	None
			March	2.0-3.5	2.8-4.3	---	---	None	---	None
			April	2.0-3.5	2.8-4.3	---	---	None	---	None
			November	2.0-3.5	2.8-4.3	---	---	None	---	None
			December	2.0-3.5	2.8-4.3	---	---	None	---	None
73101: Wrengart-----	C	Medium	January	2.0-3.5	2.8-4.3	---	---	None	---	None
			February	2.0-3.5	2.8-4.3	---	---	None	---	None
			March	2.0-3.5	2.8-4.3	---	---	None	---	None
			April	2.0-3.5	2.8-4.3	---	---	None	---	None
			November	2.0-3.5	2.8-4.3	---	---	None	---	None
			December	2.0-3.5	2.8-4.3	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Surface water depth	Ponding		Flooding	
				Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
73139: Poynor-----	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Clarksville-----	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Scholten-----	C	Medium	December	1.0-2.4	1.2-2.5	---	---	None	---	None
			January	1.0-2.4	1.2-2.5	---	---	None	---	None
			February	1.0-2.4	1.2-2.5	---	---	None	---	None
			March	1.0-2.4	1.2-2.5	---	---	None	---	None
			April	1.0-2.4	1.2-2.5	---	---	None	---	None
73140: Clarksville-----	B	High	Jan-Dec	---	---	---	---	None	---	None
Scholten-----	C	Very high	December	1.2-2.9	1.3-3.0	---	---	None	---	None
			January	1.2-2.9	1.3-3.0	---	---	None	---	None
			February	1.2-2.9	1.3-3.0	---	---	None	---	None
			March	1.2-2.9	1.3-3.0	---	---	None	---	None
			April	1.2-2.9	1.3-3.0	---	---	None	---	None
73141: Firebaugh-----	C	High	December	1.5-2.2	2.5-3.2	---	---	None	---	None
			January	1.5-2.2	2.5-3.2	---	---	None	---	None
			February	1.5-2.2	2.5-3.2	---	---	None	---	None
			March	1.5-2.2	2.5-3.2	---	---	None	---	None
			April	1.5-2.2	2.5-3.2	---	---	None	---	None
73145: Crider-----	B	Medium	Jan-Dec	---	---	---	---	None	---	None
73146: Marquand-----	C	Medium	December	2.0-2.5	2.5-3.0	---	---	None	---	None
			January	2.0-2.5	2.5-3.0	---	---	None	---	None
			February	2.0-2.5	2.5-3.0	---	---	None	---	None
			March	2.0-2.5	2.5-3.0	---	---	None	---	None
			April	2.0-2.5	2.5-3.0	---	---	None	---	None
73150: Caneyville-----	C	High	Jan-Dec	---	---	---	---	None	---	None
Bucklick-----	C	High	Jan-Dec	---	---	---	---	None	---	None
73151: Caneyville-----	C	High	Jan-Dec	---	---	---	---	None	---	None
Gasconade-----	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Bucklick-----	C	High	Jan-Dec	---	---	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Surface water depth	Ponding		Flooding	
				Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
73156: Alred-----	B	High	Jan-Dec	---	---	---	---	None	---	None
Gepp-----	B	High	Jan-Dec	---	---	---	---	None	---	None
73157: Captina-----	C	Medium	December	1.5-3.0	2.0-3.5	---	---	None	---	None
			January	1.5-3.0	2.0-3.5	---	---	None	---	None
			February	1.5-3.0	2.0-3.5	---	---	None	---	None
			March	1.5-3.0	2.0-3.5	---	---	None	---	None
			April	1.5-3.0	2.0-3.5	---	---	None	---	None
73223: Coulstone-----	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Bender-----	B	High	Jan-Dec	---	---	---	---	None	---	None
73264: Alred-----	B	High	Jan-Dec	---	---	---	---	None	---	None
Wrengart-----	C	High	December	2.5-3.2	3.3-5.0	---	---	None	---	None
			January	2.5-3.2	3.3-5.0	---	---	None	---	None
			February	2.5-3.2	3.3-5.0	---	---	None	---	None
			March	2.5-3.2	3.3-5.0	---	---	None	---	None
			April	2.5-3.2	3.3-5.0	---	---	None	---	None
73265: Captina-----	C	Very high	December	1.6-2.8	1.7-2.9	---	---	None	---	None
			January	1.6-2.8	1.7-2.9	---	---	None	---	None
			February	1.6-2.8	1.7-2.9	---	---	None	---	None
			March	1.6-2.8	1.7-2.9	---	---	None	---	None
			April	1.6-2.8	1.7-2.9	---	---	None	---	None
Scholten-----	C	Very high	December	1.0-2.4	1.2-2.5	---	---	None	---	None
			January	1.0-2.4	1.2-2.5	---	---	None	---	None
			February	1.0-2.4	1.2-2.5	---	---	None	---	None
			March	1.0-2.4	1.2-2.5	---	---	None	---	None
			April	1.0-2.4	1.2-2.5	---	---	None	---	None
73266: Hildebrecht-----	C	High	December	2.0-3.0	2.1-3.1	---	---	None	---	None
			January	2.0-3.0	2.1-3.1	---	---	None	---	None
			February	2.0-3.0	2.1-3.1	---	---	None	---	None
			March	2.0-3.0	2.1-3.1	---	---	None	---	None
			April	2.0-3.0	2.1-3.1	---	---	None	---	None
73267: Yelton-----	C	Very high	December	1.5-2.0	2.0-3.5	---	---	None	---	None
			January	1.5-2.0	2.0-3.5	---	---	None	---	None
			February	1.5-2.0	2.0-3.5	---	---	None	---	None
			March	1.5-2.0	2.0-3.5	---	---	None	---	None
			April	1.5-2.0	2.0-3.5	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
73267: Scholten-----	C	Very high	December	1.0-2.4	1.2-2.5	---	---	None	---	None
			January	1.0-2.4	1.2-2.5	---	---	None	---	None
			February	1.0-2.4	1.2-2.5	---	---	None	---	None
			March	1.0-2.4	1.2-2.5	---	---	None	---	None
			April	1.0-2.4	1.2-2.5	---	---	None	---	None
73269: Brussels-----	C	High	Jan-Dec	---	---	---	---	None	---	None
Gasconade-----	D	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop-----	---	Very high	Jan-Dec	---	---	---	---	None	---	None
73270: Wrengart-----	C	High	December	2.0-3.5	5.9-5.9	---	---	None	---	None
			January	2.0-3.5	5.9-5.9	---	---	None	---	None
			February	2.0-3.5	5.9-5.9	---	---	None	---	None
			March	2.0-3.5	5.9-5.9	---	---	None	---	None
			April	2.0-3.5	5.9-5.9	---	---	None	---	None
73343: Captina-----	C	High	December	1.6-2.8	1.7-2.9	---	---	None	---	None
			January	1.6-2.8	1.7-2.9	---	---	None	---	None
			February	1.6-2.8	1.7-2.9	---	---	None	---	None
			March	1.6-2.8	1.7-2.9	---	---	None	---	None
			April	1.6-2.8	1.7-2.9	---	---	None	---	None
73344: Captina-----	C	High	December	1.6-2.8	1.7-2.9	---	---	None	---	None
			January	1.6-2.8	1.7-2.9	---	---	None	---	None
			February	1.6-2.8	1.7-2.9	---	---	None	---	None
			March	1.6-2.8	1.7-2.9	---	---	None	---	None
			April	1.6-2.8	1.7-2.9	---	---	None	---	None
73345: Hildebrecht-----	C	High	December	2.0-2.5	2.1-2.6	---	---	None	---	None
			January	2.0-2.5	2.1-2.6	---	---	None	---	None
			February	2.0-2.5	2.1-2.6	---	---	None	---	None
			March	2.0-2.5	2.1-2.6	---	---	None	---	None
			April	2.0-2.5	2.1-2.6	---	---	None	---	None
73346: Hildebrecht-----	C	High	December	2.0-2.5	2.1-2.6	---	---	None	---	None
			January	2.0-2.5	2.1-2.6	---	---	None	---	None
			February	2.0-2.5	2.1-2.6	---	---	None	---	None
			March	2.0-2.5	2.1-2.6	---	---	None	---	None
			April	2.0-2.5	2.1-2.6	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
74644: Deible-----	D	Low	December	0.0-1.0	1.5-3.0	---	---	None	---	None
			January	0.0-1.0	1.5-3.0	---	---	None	---	None
			February	0.0-1.0	1.5-3.0	---	---	None	---	None
			March	0.0-1.0	1.5-3.0	---	---	None	---	None
			April	0.0-1.0	1.5-3.0	---	---	None	---	None
74646: Cornwall-----	C	Medium	December	1.5-3.0	2.0-3.5	---	---	None	---	None
			January	1.5-3.0	2.0-3.5	---	---	None	---	None
			February	1.5-3.0	2.0-3.5	---	---	None	---	None
			March	1.5-3.0	2.0-3.5	---	---	None	---	None
			April	1.5-3.0	2.0-3.5	---	---	None	---	None
74648: Aslinger-----	C	Medium	December	1.5-2.5	2.5-3.0	---	---	None	---	None
			January	1.5-2.5	2.5-3.0	---	---	None	---	None
			February	1.5-2.5	2.5-3.0	---	---	None	---	None
			March	1.5-2.5	2.5-3.0	---	---	None	---	None
			April	1.5-2.5	2.5-3.0	---	---	None	---	None
74649: Aslinger-----	C	Medium	December	1.5-2.5	2.5-3.0	---	---	None	---	None
			January	1.5-2.5	2.5-3.0	---	---	None	---	None
			February	1.5-2.5	2.5-3.0	---	---	None	---	None
			March	1.5-2.5	2.5-3.0	---	---	None	---	None
			April	1.5-2.5	2.5-3.0	---	---	None	---	None
Waben-----	B	Medium	Jan-Dec	---	---	---	---	None	---	None
74679: Higdon-----	C	Medium	November	---	---	---	---	None	Very brief	Rare
			December	1.5-1.7	>6.0	---	---	None	Very brief	Rare
			January	1.5-1.7	>6.0	---	---	None	Very brief	Rare
			February	1.5-1.7	>6.0	---	---	None	Very brief	Rare
			March	1.5-1.7	>6.0	---	---	None	Very brief	Rare
			April	1.5-1.7	>6.0	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Very rare
			July	---	---	---	---	None	Very brief	Very rare
			August	---	---	---	---	None	Very brief	Very rare
September	---	---	---	---	None	Very brief	Very rare			
October	---	---	---	---	None	Very brief	Very rare			

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
74680: Moniteau-----	C/D	Medium	November	---	---	---	---	None	Very brief	Rare
			December	0.0-1.0	>6.0	---	---	None	Very brief	Rare
			January	0.0-1.0	>6.0	---	---	None	Very brief	Rare
			February	0.0-1.0	>6.0	---	---	None	Very brief	Rare
			March	0.0-1.0	>6.0	---	---	None	Very brief	Rare
			April	0.0-1.0	>6.0	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Very rare
			July	---	---	---	---	None	Very brief	Very rare
			August	---	---	---	---	None	Very brief	Very rare
			September	---	---	---	---	None	Very brief	Very rare
			October	---	---	---	---	None	Very brief	Very rare
74685: Auxvasse-----	D	Very high	January	1.0-2.0	5.9-6.3	---	---	None	---	None
			February	1.0-2.0	5.9-6.3	---	---	None	---	None
			March	1.0-2.0	5.9-6.3	---	---	None	---	None
			April	1.0-2.0	5.9-6.3	---	---	None	---	None
			May	1.0-2.0	5.9-6.3	---	---	None	---	None
			November	1.0-2.0	5.9-6.3	---	---	None	---	None
			December	1.0-2.0	5.9-6.3	---	---	None	---	None
75379: Kaintuck-----	B	Very low	November	---	---	---	---	None	Very brief	Frequent
			December	---	---	---	---	None	Very brief	Frequent
			January	---	---	---	---	None	Very brief	Frequent
			February	---	---	---	---	None	Very brief	Frequent
			March	---	---	---	---	None	Very brief	Frequent
			April	---	---	---	---	None	Very brief	Frequent
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Occasional
75381: Bearthicket-----	B	Low	November	---	---	---	---	None	Very brief	Rare
			December	---	---	---	---	None	Very brief	Rare
			January	---	---	---	---	None	Very brief	Rare
			February	---	---	---	---	None	Very brief	Rare
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Very rare
			July	---	---	---	---	None	Very brief	Very rare
			August	---	---	---	---	None	Very brief	Very rare
			September	---	---	---	---	None	Very brief	Very rare
			October	---	---	---	---	None	Very brief	Very rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
75395: Jamesfin-----	B	Low	November	---	---	---	---	None	Very brief	Occasional
			December	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
			January	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
			February	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
			March	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
			April	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
75408: Secesh-----	B	Low	November	---	---	---	---	None	Very brief	Rare
			December	---	---	---	---	None	Very brief	Rare
			January	---	---	---	---	None	Very brief	Rare
			February	---	---	---	---	None	Very brief	Rare
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Very rare
			July	---	---	---	---	None	Very brief	Very rare
			August	---	---	---	---	None	Very brief	Very rare
			September	---	---	---	---	None	Very brief	Very rare
			October	---	---	---	---	None	Very brief	Very rare
75409: Relfe-----	A	Negligible	November	---	---	---	---	None	Very brief	Occasional
			December	---	---	---	---	None	Very brief	Occasional
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
75411: Tilk-----	A	Low	November	---	---	---	---	None	Very brief	Rare
			December	---	---	---	---	None	Very brief	Rare
			January	---	---	---	---	None	Very brief	Rare
			February	---	---	---	---	None	Very brief	Rare
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Very rare
			July	---	---	---	---	None	Very brief	Very rare
			August	---	---	---	---	None	Very brief	Very rare
			September	---	---	---	---	None	Very brief	Very rare
			October	---	---	---	---	None	Very brief	Very rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
75416: Gladden-----	B	Very low	November	---	---	---	---	None	Very brief	Occasional
			December	---	---	---	---	None	Very brief	Occasional
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
75417: Relfe-----	A	Negligible	December	---	---	---	---	None	Very brief	Frequent
			January	---	---	---	---	None	Very brief	Frequent
			February	---	---	---	---	None	Very brief	Frequent
			March	---	---	---	---	None	Very brief	Frequent
			April	---	---	---	---	None	Very brief	Frequent
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Very brief	Occasional
Sandbur-----	A	Very low	December	---	---	---	---	None	Very brief	Frequent
			January	---	---	---	---	None	Very brief	Frequent
			February	---	---	---	---	None	Very brief	Frequent
			March	---	---	---	---	None	Very brief	Frequent
			April	---	---	---	---	None	Very brief	Frequent
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Very brief	Occasional
75426: Gabriel-----	B/D	Low	November	1.0-2.5	>6.0	---	---	None	Brief	Rare
			December	1.0-2.5	>6.0	---	---	None	Brief	Rare
			January	1.0-2.5	>6.0	---	---	None	Brief	Rare
			February	1.0-2.5	>6.0	---	---	None	Brief	Rare
			March	1.0-2.5	>6.0	---	---	None	Brief	Rare
			April	1.0-2.5	>6.0	---	---	None	Brief	Rare
			May	1.0-2.5	>6.0	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Very rare
			July	---	---	---	---	None	Brief	Very rare
			August	---	---	---	---	None	Brief	Very rare
			September	---	---	---	---	None	Brief	Very rare
			October	---	---	---	---	None	Brief	Very rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
75428: Tilk-----	A	Very low	November	---	---	---	---	None	Very brief	Occasional
			December	---	---	---	---	None	Very brief	Occasional
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
Cornwall-----	C	High	December	1.4-2.7	2.0-3.5	---	---	None	---	None
			January	1.4-2.7	2.0-3.5	---	---	None	---	None
			February	1.4-2.7	2.0-3.5	---	---	None	---	None
			March	1.4-2.7	2.0-3.5	---	---	None	---	None
			April	1.4-2.7	2.0-3.5	---	---	None	---	None
Poynor-----	B	Medium	Jan-Dec	---	---	---	---	None	---	None
75429: Tilk-----	A	Very low	November	---	---	---	---	None	Very brief	Occasional
			December	---	---	---	---	None	Very brief	Occasional
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
Secesh-----	B	Low	November	---	---	---	---	None	Very brief	Rare
			December	---	---	---	---	None	Very brief	Rare
			January	---	---	---	---	None	Very brief	Rare
			February	---	---	---	---	None	Very brief	Rare
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Very rare
			July	---	---	---	---	None	Very brief	Very rare
			August	---	---	---	---	None	Very brief	Very rare
September	---	---	---	---	None	Very brief	Very rare			
October	---	---	---	---	None	Very brief	Very rare			

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
75430: Wideman-----	A	Very low	November	---	---	---	---	None	Very brief	Occasional
			December	---	---	---	---	None	Very brief	Occasional
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
75451: Gladden-----	B	Low	November	---	---	---	---	None	Very brief	Occasional
			December	---	---	---	---	None	Very brief	Occasional
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
75467: Wilbur-----	C	Low	November	---	---	---	---	None	Brief	Frequent
			December	1.5-2.0	>6.0	---	---	None	Brief	Frequent
			January	1.5-2.0	>6.0	---	---	None	Brief	Frequent
			February	1.5-2.0	>6.0	---	---	None	Brief	Frequent
			March	1.5-2.0	>6.0	---	---	None	Brief	Frequent
			April	1.5-2.0	>6.0	---	---	None	Brief	Frequent
			May	---	---	---	---	None	Brief	Frequent
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
75468: Elsah-----	B	Low	November	---	---	---	---	None	Brief	Frequent
			December	---	---	---	---	None	Brief	Frequent
			January	---	---	---	---	None	Brief	Frequent
			February	---	---	---	---	None	Brief	Frequent
			March	---	---	---	---	None	Brief	Frequent
			April	---	---	---	---	None	Brief	Frequent
			May	---	---	---	---	None	Brief	Frequent
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table			Ponding		Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
77000: Killarney-----	C	High	December	2.0-3.0	2.5-3.5	---	---	None	---	None
			January	2.0-3.0	2.5-3.5	---	---	None	---	None
			February	2.0-3.0	2.5-3.5	---	---	None	---	None
			March	2.0-3.0	2.5-3.5	---	---	None	---	None
			April	2.0-3.0	2.5-3.5	---	---	None	---	None
Frenchmill-----	B	High	Jan-Dec	---	---	---	---	None	---	None
77002: Delassus-----	C	High	December	1.8-2.5	2.0-3.0	---	---	None	---	None
			January	1.8-2.5	2.0-3.0	---	---	None	---	None
			February	1.8-2.5	2.0-3.0	---	---	None	---	None
			March	1.8-2.5	2.0-3.0	---	---	None	---	None
			April	1.8-2.5	2.0-3.0	---	---	None	---	None
77005: Hassler-----	C	High	December	1.8-2.5	2.0-3.0	---	---	None	---	None
			January	1.8-2.5	2.0-3.0	---	---	None	---	None
			February	1.8-2.5	2.0-3.0	---	---	None	---	None
			March	1.8-2.5	2.0-3.0	---	---	None	---	None
			April	1.8-2.5	2.0-3.0	---	---	None	---	None
Syenite-----	C	Very high	Jan-Dec	---	---	---	---	None	---	None
77008: Hassler-----	C	Medium	December	1.8-2.5	2.0-3.0	---	---	None	---	None
			January	1.8-2.5	2.0-3.0	---	---	None	---	None
			February	1.8-2.5	2.0-3.0	---	---	None	---	None
			March	1.8-2.5	2.0-3.0	---	---	None	---	None
			April	1.8-2.5	2.0-3.0	---	---	None	---	None
80000: Calhoun-----	D	Low	December	0.0-2.0	4.0-5.0	---	---	None	---	None
			January	0.0-2.0	4.0-5.0	---	---	None	---	None
			February	0.0-2.0	4.0-5.0	---	---	None	---	None
			March	0.0-2.0	4.0-5.0	---	---	None	---	None
			April	0.0-2.0	4.0-5.0	---	---	None	---	None
80001: Oaklimeter-----	C	Negligible	November	1.5-2.5	4.0-5.0	---	---	None	---	None
			December	1.5-2.5	4.0-5.0	---	---	None	---	None
			January	1.5-2.5	4.0-5.0	---	---	None	---	None
			February	1.5-2.5	4.0-5.0	---	---	None	---	None
			March	1.5-2.5	4.0-5.0	---	---	None	---	None
			April	1.5-2.5	4.0-5.0	---	---	None	---	None
82000: Dubbs-----	B	Negligible	Jan-Dec	---	---	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Surface water depth	Ponding		Flooding	
				Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
82001: Amagon-----	D	Negligible	December	0.0-1.0	4.0-5.0	---	Very long	Frequent	---	None
			January	0.0-1.0	4.0-5.0	---	Very long	Frequent	---	None
			February	0.0-1.0	4.0-5.0	---	Very long	Frequent	---	None
			March	0.0-1.0	4.0-5.0	---	Very long	Frequent	---	None
			April	0.0-1.0	4.0-5.0	---	Very long	Frequent	---	None
82002: Forestdale-----	D	Negligible	January	0.0-0.8	>6.0	---	Very long	Frequent	---	None
			February	0.0-0.8	>6.0	---	Very long	Frequent	---	None
			March	0.0-0.8	>6.0	---	Very long	Frequent	---	None
			April	0.0-0.8	>6.0	---	Very long	Frequent	---	None
82005: Malden-----	A	Very low	Jan-Dec	---	---	---	---	None	---	None
82006: Bosket-----	B	Very low	Jan-Dec	---	---	---	---	None	---	None
82007: Bosket-----	B	Low	November	---	---	---	---	None	Brief	Occasional
			December	---	---	---	---	None	Brief	Occasional
			January	---	---	---	---	None	Brief	Occasional
			February	---	---	---	---	None	Brief	Occasional
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
September	---	---	---	---	None	Brief	Rare			
October	---	---	---	---	None	Brief	Rare			
82009: Forestdale-----	D	High	December	0.0-1.5	>6.0	---	---	None	---	None
			January	0.0-1.5	>6.0	---	---	None	---	None
			February	0.0-1.5	>6.0	---	---	None	---	None
			March	0.0-1.5	>6.0	---	---	None	---	None
			April	0.0-1.5	>6.0	---	---	None	---	None
82010: Amagon-----	D	Medium	December	0.0-2.0	4.0-5.0	---	---	None	---	None
			January	0.0-2.0	4.0-5.0	---	---	None	---	None
			February	0.0-2.0	4.0-5.0	---	---	None	---	None
			March	0.0-2.0	4.0-5.0	---	---	None	---	None
			April	0.0-2.0	4.0-5.0	---	---	None	---	None
82011: Crowley-----	D	High	December	0.5-1.5	1.0-2.5	---	---	None	---	None
			January	0.5-1.5	1.0-2.5	---	---	None	---	None
			February	0.5-1.5	1.0-2.5	---	---	None	---	None
			March	0.5-1.5	1.0-2.5	---	---	None	---	None
			April	0.5-1.5	1.0-2.5	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Surface water depth	Ponding		Flooding	
				Upper limit	Lower limit		Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
86000: Dubbs-----	B	Low	November	---	---	---	---	None	Brief	Occasional
			December	---	---	---	---	None	Brief	Occasional
			January	---	---	---	---	None	Brief	Occasional
			February	---	---	---	---	None	Brief	Occasional
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
86001: Calhoun-----	D	Low	November	---	---	---	---	None	Brief	Occasional
			December	0.0-2.0	4.0-5.0	---	---	None	Brief	Occasional
			January	0.0-2.0	4.0-5.0	---	---	None	Brief	Occasional
			February	0.0-2.0	4.0-5.0	---	---	None	Brief	Occasional
			March	0.0-2.0	4.0-5.0	---	---	None	Brief	Occasional
			April	0.0-2.0	4.0-5.0	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
86002: Falaya-----	D	Negligible	November	---	---	---	---	None	Brief	Occasional
			December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			January	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			February	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			March	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			April	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
86003: Amagon-----	D	Medium	November	---	---	---	---	None	Brief	Occasional
			December	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			January	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			February	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			March	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			April	1.0-2.0	>6.0	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare



Table 21.--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	Thickness		Hardness	Uncoated steel	Concrete
60033: Wrengart-----	Dense material	In 20-40	In 5-35	Noncemented	Moderate	Moderate	Moderate
60046: Minnith-----	---	---	---	---	Moderate	Moderate	Moderate
60053: Winfield-----	---	---	---	---	High	High	Moderate
60054: Minnith-----	---	---	---	---	Moderate	Moderate	Moderate
60055: Winfield-----	---	---	---	---	High	Moderate	Moderate
66000: Moniteau-----	---	---	---	---	High	High	High
66054: Wakeland-----	---	---	---	---	High	High	Low
66055: Haymond-----	---	---	---	---	High	Low	Low
73055: Alred-----	Strongly contrasting textural stratification	14-40	---	Noncemented	Moderate	Moderate	High
Rueter-----	---	---	---	---	Moderate	Moderate	Moderate
73100: Wrengart-----	Dense material	20-40	5-35	Noncemented	Moderate	Moderate	Moderate
73101: Wrengart-----	Dense material	20-40	5-35	Noncemented	Moderate	Moderate	High
73139: Poynor-----	Strongly contrasting textural stratification	14-40	---	Noncemented	Moderate	High	High
Clarksville-----	---	---	---	---	Moderate	Moderate	High
Scholten-----	Fragipan	14-30	6-35	Noncemented	Moderate	High	High
73140: Clarksville-----	---	---	---	---	Moderate	Moderate	High
Scholten-----	Fragipan	16-36	6-35	Noncemented	Moderate	High	High
73141: Firebaugh-----	---	---	---	---	High	High	High
73145: Crider-----	---	---	---	---	High	Moderate	Moderate

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
73146: Marquand-----	---	---	---	---	High	High	High
73150: Caneyville-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	Moderate
Bucklick-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	High	Moderate
73151: Caneyville-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	Moderate
Gasconade-----	Bedrock (lithic)	4-20	---	Indurated	Moderate	High	Low
Bucklick-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	High	Moderate
73156: Alred-----	Strongly contrasting textural stratification	14-40	---	Noncemented	Moderate	High	Moderate
Gepp-----	---	---	---	---	Moderate	High	Moderate
73157: Captina-----	Fragipan	20-36	6-32	Noncemented	High	High	High
73223: Coulstone-----	---	---	---	---	Moderate	Low	Moderate
Bender-----	Bedrock (lithic)	20-39	41-61	Indurated	Moderate	Low	High
73264: Alred-----	Strongly contrasting textural stratification	14-40	---	Noncemented	Moderate	Moderate	High
Wrengart-----	---	---	---	---	High	Moderate	Moderate
73265: Captina-----	Fragipan	20-36	6-32	Noncemented	High	High	High
Scholten-----	Fragipan	20-35	6-35	Noncemented	Moderate	High	High
73266: Hildebrecht-----	Fragipan	24-36	10-30	Noncemented	High	High	High
73267: Yelton-----	Fragipan	16-28	10-25	Noncemented	High	High	High
Scholten-----	Fragipan	20-35	6-35	Noncemented	High	High	High
73269: Brussels-----	---	---	---	---	Moderate	Moderate	Low
Gasconade-----	Bedrock (lithic)	4-20	---	Indurated	Moderate	Moderate	Low
Rock outcrop-----	Bedrock (lithic)	0-4	---	Indurated	None	---	---
73270: Wrengart-----	---	---	---	---	High	High	Moderate
73343: Captina-----	Fragipan	15-30	6-26	Noncemented	High	Moderate	High

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
73344: Captina-----	Fragipan	21-35	6-31	Noncemented	High	Moderate	High
73345: Hildebrecht-----	Fragipan	24-36	6-24	Noncemented	Moderate	Moderate	High
73346: Hildebrecht-----	Fragipan	24-36	6-24	Noncemented	Moderate	Moderate	High
74644: Deible-----	Abrupt textural change	8-22	---	Noncemented	High	High	Moderate
74646: Cornwall-----	---	---	---	---	High	High	Moderate
74648: Aslinger-----	---	---	---	---	High	High	High
74649: Aslinger-----	---	---	---	---	High	High	High
Waben-----	---	---	---	---	Moderate	Low	Moderate
74679: Higdon-----	---	---	---	---	High	Low	Moderate
74680: Moniteau-----	---	---	---	---	High	High	High
74685: Auxvasse-----	---	---	---	---	High	High	High
75379: Kaintuck-----	---	---	---	---	Moderate	Low	Moderate
75381: Bearthicket-----	---	---	---	---	High	Low	Low
75395: Jamesfin-----	---	---	---	---	High	Low	Moderate
75408: Secesh-----	---	---	---	---	Moderate	Moderate	Moderate
75409: Relfe-----	---	---	---	---	Low	Low	Moderate
75411: Tilk-----	---	---	---	---	Moderate	Moderate	High
75416: Gladden-----	---	---	---	---	Moderate	Low	Moderate
75417: Relfe-----	---	---	---	---	Low	Low	Moderate
Sandbur-----	---	---	---	---	Moderate	Low	Low
75426: Gabriel-----	---	---	---	---	High	High	Moderate
75428: Tilk-----	---	---	---	---	Moderate	Moderate	High

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
75428: Cornwall-----	---	---	---	---	High	High	Moderate
Poynor-----	Strongly contrasting textural stratification	15-40	---	Noncemented	Moderate	High	High
75429: Tilk-----	---	---	---	---	Low	Low	High
Secesh-----	---	---	---	---	Moderate	Moderate	High
75430: Wideman-----	---	---	---	---	Low	Low	Low
75451: Gladden-----	---	---	---	---	Moderate	High	High
75467: Wilbur-----	---	---	---	---	High	Moderate	Moderate
75468: Elsah-----	---	---	---	---	Moderate	Low	Moderate
77000: Killarney-----	Fragipan	26-34	12-48	Noncemented	Moderate	Moderate	High
Frenchmill-----	---	---	---	---	Moderate	Moderate	High
77002: Delassus-----	Fragipan	20-36	20-48	Noncemented	Moderate	High	High
	Bedrock (lithic)	60-80	---	Indurated			
77005: Hassler-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	High	High
Syenite-----	Bedrock (lithic)	20-40	---	Indurated	Moderate	High	High
77008: Hassler-----	Bedrock (lithic)	40-60	---	Indurated	Moderate	High	High
80000: Calhoun-----	---	---	---	---	None	High	Moderate
80001: Oaklimeter-----	---	---	---	---	None	High	High
82000: Dubbs-----	---	---	---	---	None	Moderate	Moderate
82001: Amagon-----	---	---	---	---	None	High	High
82002: Forestdale-----	---	---	---	---	None	High	Moderate
82005: Malden-----	---	---	---	---	None	Low	Moderate
82006: Bosket-----	---	---	---	---	None	Low	Moderate

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
82007: Bosket-----	---	In	In	---	None	Low	Moderate
82009: Forestdale-----	---	---	---	---	None	High	Moderate
82010: Amagon-----	---	---	---	---	None	High	High
82011: Crowley-----	---	---	---	---	None	High	Moderate
86000: Dubbs-----	---	---	---	---	None	Moderate	Moderate
86001: Calhoun-----	---	---	---	---	None	High	Moderate
86002: Falaya-----	---	---	---	---	None	High	Moderate
86003: Amagon-----	---	---	---	---	None	High	High
86004: Forestdale-----	---	---	---	---	None	High	Moderate
90000: Memphis-----	---	---	---	---	None	Moderate	Moderate
90001: Memphis-----	---	---	---	---	None	Moderate	Moderate
99001. Water							
99003. Miscellaneous water							
99007. Dam							
99015: Udorthents.  Water.							

Table 22.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Alred-----	Loamy-skeletal over clayey, siliceous, semiactive, mesic Typic Paleudalfs
Amagon-----	Fine-silty, mixed, active, thermic Typic Endoaqualfs
Aslinger-----	Fine-loamy, mixed, active, mesic Fragiaquic Paleudults
*Auxvasse-----	Fine, mixed, active, mesic Aeric Albaqualfs
Bearthicket-----	Fine-silty, mixed, active, mesic Ultic Hapludalfs
Bender-----	Loamy-skeletal, siliceous, active, mesic Typic Hapludults
Bosket-----	Fine-loamy, mixed, active, thermic Mollic Hapludalfs
*Brussels-----	Clayey-skeletal, mixed, superactive, mesic Pachic Argiudolls
Bucklick-----	Fine, mixed, active, mesic Typic Hapludalfs
Calhoun-----	Fine-silty, mixed, active, thermic Typic Glossaqualfs
Caneyville-----	Fine, mixed, active, mesic Typic Hapludalfs
Captina-----	Fine-silty, siliceous, active, mesic Typic Fragiudults
Clarksville-----	Loamy-skeletal, siliceous, semiactive, mesic Typic Paleudults
Cornwall-----	Fine-silty, mixed, active, mesic Fragiaquic Paleudults
Coulstone-----	Loamy-skeletal, siliceous, semiactive, mesic Typic Paleudults
Crider-----	Fine-silty, mixed, active, mesic Typic Paleudalfs
*Crowley-----	Fine, smectitic, thermic Typic Albaqualfs
Deible-----	Fine, mixed, active, mesic Typic Albaqualfs
Delassus-----	Fine-loamy, mixed, active, mesic Typic Fragiudults
Dubbs-----	Fine-silty, mixed, active, thermic Typic Hapludalfs
Elsah-----	Loamy-skeletal, mixed, superactive, nonacid, mesic Typic Udifluvents
Falaya-----	Coarse-silty, mixed, acid, thermic Aeric Fluvaquents
Firebaugh-----	Fine-loamy, mixed, active, mesic Fragiaquic Paleudults
Forestdale-----	Fine, smectitic, thermic Typic Endoaqualfs
Frenchmill-----	Loamy-skeletal, mixed, active, mesic Typic Paleudults
Gabriel-----	Fine-silty, mixed, superactive, mesic Typic Argiaquolls
Gasconade-----	Clayey-skeletal, mixed, superactive, mesic Lithic Hapludolls
Gepp-----	Very fine, mixed, semiactive, mesic Typic Paleudalfs
Gladden-----	Coarse-loamy, siliceous, superactive, mesic Dystric Fluventic Eutrudepts
Hassler-----	Fine-loamy, mixed, active, mesic Oxyaquic Hapludults
Haymond-----	Coarse-silty, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Higdon-----	Fine-silty, mixed, active, mesic Aquic Hapludalfs
Hildebrecht-----	Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs
Jamesfin-----	Fine-silty, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Kaintuck-----	Coarse-loamy, siliceous, superactive, nonacid, mesic Typic Udifluvents
Killarney-----	Loamy-skeletal, mixed, active, mesic Typic Fragiudults
Malden-----	Mixed, thermic Typic Udipsamments
Marquand-----	Fine-silty, mixed, active, mesic Aquic Hapludults
Memphis-----	Fine-silty, mixed, active, thermic Typic Hapludalfs
Minnith-----	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
*Moniteau-----	Fine-silty, mixed, active, mesic Typic Endoaqualfs
Oaklimeter-----	Coarse-silty, mixed, active, thermic Fluvaquentic Dystrudepts
Poynor-----	Loamy-skeletal over clayey, siliceous, semiactive, mesic Typic Paleudults
Relfe-----	Sandy-skeletal, siliceous, mesic Mollic Udifluvents
Rueter-----	Loamy-skeletal, siliceous, active, mesic Typic Paleudalfs
Sandbur-----	Coarse-loamy, siliceous, superactive, nonacid, mesic Mollic Udifluvents
Scholten-----	Loamy-skeletal, siliceous, active, mesic Typic Fragiudults
Secesh-----	Fine-loamy, siliceous, active, mesic Ultic Hapludalfs
Syenite-----	Fine-loamy, mixed, active, mesic Typic Hapludults
Tilk-----	Loamy-skeletal, siliceous, active, mesic Ultic Hapludalfs
*Waben-----	Loamy-skeletal, siliceous, semiactive, mesic Typic Paleudults
Wakeland-----	Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents
Wideman-----	Sandy, siliceous, mesic Typic Udifluvents
Wilbur-----	Coarse-silty, mixed, superactive, mesic Fluvaquentic Eutrudepts
Winfield-----	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Wrengart-----	Fine-silty, mixed, active, mesic Fragic Oxyaquic Hapludalfs
Yelton-----	Fine-loamy, siliceous, active, mesic Typic Fragiudults

# NRCS Accessibility Statement

---

The Natural Resources Conservation Service (NRCS) is committed to making its information accessible to all of its customers and employees. If you are experiencing accessibility issues and need assistance, please contact our Helpdesk by phone at 1-800-457-3642 or by e-mail at [helpdesk@helpdesk.itc.nrcs.usda.gov](mailto:helpdesk@helpdesk.itc.nrcs.usda.gov). For assistance with publications that include maps, graphs, or similar forms of information, you may also wish to contact our State or local office. You can locate the correct office and phone number at <http://offices.sc.egov.usda.gov/locator/app>.