

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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 Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

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; 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 Fluvaquents (*Fluv*, meaning river, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typical subgroup. Other subgroups are intergrades or extragrades. The typical 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 known kind of soil. 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 Fluvaquents.

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, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, nonacid, mesic Typic Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

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). 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.

Atlas Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Side slopes along drainageways

Parent material: A paleosol that formed in glacial till or a thin mantle of loess and the underlying paleosol

Slope range: 2 to 15 percent

Taxonomic classification: Fine, montmorillonitic, mesic, sloping Aeric Ochraqualfs

Typical Pedon

Atlas silt loam, 2 to 5 percent slopes, eroded, 800 feet west and 100 feet north of the southeast corner of sec. 36, T. 10 N., R. 8 E.

Ap—0 to 4 inches; brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4) dry; weak fine granular structure; friable; 10 percent mixing of subsoil material in the lower part; very strongly acid; abrupt smooth boundary.

BE—4 to 8 inches; brown (10YR 4/3) silt loam; few fine distinct brown (7.5YR 4/4) mottles; weak thick platy structure parting to moderate fine subangular blocky; friable; very strongly acid; abrupt smooth boundary.

Bt—8 to 12 inches; yellowish brown (10YR 5/4) silty clay loam; common fine faint brown (10YR 5/3) and common fine distinct brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; firm; many faint dark grayish brown (10YR 4/2) and gray (10YR 5/1) clay films on faces of peds; very strongly acid; abrupt smooth boundary.

2Btg1—12 to 20 inches; very dark gray (N 3/0) silty clay loam; few fine prominent strong brown (7.5YR 4/6) mottles; weak medium prismatic structure parting to moderate medium angular blocky; very firm; common faint black (N 2/0) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; medium acid; clear smooth boundary.

2Btg2—20 to 30 inches; very dark gray (10YR 3/1) silty clay loam; few medium prominent strong brown (7.5YR 4/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; very firm; common faint black (10YR 2/1) clay films on faces of peds; many distinct light gray (10YR 7/1) silt coatings on faces of peds; slightly acid; clear smooth boundary.

2Btg3—30 to 44 inches; dark gray (10YR 4/1) clay loam; few fine distinct brown (10YR 4/3) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; very firm; few faint very dark gray (10YR 3/1) clay films on faces of peds; many distinct light gray (10YR 7/1) silt

coatings on faces of peds; slightly acid; clear smooth boundary.

2Btg4—44 to 56 inches; dark gray (10YR 4/1) silty clay loam; few fine prominent brown (7.5YR 4/4) mottles; weak medium prismatic structure; very firm; few faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; abrupt smooth boundary.

2Cg—56 to 66 inches; light gray (10YR 6/1) clay loam with thin strata of loamy sand; few fine prominent yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) mottles; massive; very firm; common distinct dark gray (10YR 4/1) clay films in root channels; neutral.

Range in Characteristics

Thickness of the loess: 0 to 15 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam or silty clay loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam

2Btg horizon:

Hue—10YR or neutral

Value—3 to 6

Chroma—0 to 2

Texture—silty clay, silty clay loam, or clay loam

2BCg horizon:

Hue—10YR or neutral

Value—4 to 6

Chroma—0 to 2

Texture—silty clay loam or loam

2Cg horizon:

Hue—10YR or neutral

Value—4 to 6

Chroma—0 to 2

Texture—dominantly loam or clay loam; thin strata of loamy sand in some pedons

Ava Series

Depth class: Very deep

Drainage class: Moderately well drained

Permeability: Moderate in the upper part of the solum and very slow in the lower part

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Convex, narrow ridges, shoulders, nose slopes, and side slopes along drainageways

Parent material: Loess and the underlying silty or loamy sediments

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed mesic Typic Fragiudalfs

Typical Pedon

Ava silt loam, 2 to 5 percent slopes, 2,490 feet west and 1,790 feet north of the southeast corner of sec. 36, T. 10 N., R. 9 E.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; very friable; common very fine and fine roots throughout; 10 percent mixing of yellowish brown (10YR 5/4) subsoil material in the lower part; neutral; abrupt smooth boundary.

BE—7 to 11 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots throughout; few distinct brown (10YR 5/3) clay films on faces of peds; few distinct dark grayish brown (10YR 4/2) organic coatings in root channels; 5 percent mixing of brown (10YR 4/3) surface soil material in the upper part; medium acid; clear smooth boundary.

Bt1—11 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine roots throughout; common distinct brown (10YR 5/3) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine concretions of iron and manganese oxide; strongly acid; clear smooth boundary.

Bt2—21 to 24 inches; strong brown (7.5YR 5/6) silty clay loam; many medium distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; very few fine roots throughout; many distinct light brownish gray (2.5Y 6/2) clay films on faces of peds; many distinct light gray (10YR 7/1) silt coatings on faces of peds; few fine concretions of iron and manganese oxide; very strongly acid; clear smooth boundary.

Bt3—24 to 30 inches; strong brown (7.5YR 5/6) silty clay loam; many medium distinct strong brown (7.5YR 5/8) mottles; weak moderately thick platy structure parting to moderate medium subangular blocky; firm; very few fine roots throughout; many

distinct grayish brown (10YR 5/2) clay films on faces of peds and few distinct grayish brown (10YR 5/2) clay films in root channels; many distinct light gray (10YR 6/1) silt coatings on faces of peds; few fine concretions of iron and manganese oxide; very strongly acid; gradual smooth boundary.

2Btx1—30 to 41 inches; strong brown (7.5YR 5/6) silty clay loam; common fine distinct strong brown (7.5YR 5/8) mottles; weak coarse prismatic structure parting to moderate thick platy; firm and slightly brittle; many distinct grayish brown (10YR 5/2) clay films on faces of peds; cracks between polygons filled with light gray (10YR 6/1) silt loam; few fine concretions of iron and manganese oxide; very strongly acid; clear smooth boundary.

3Btx2—41 to 50 inches; brown (7.5YR 5/4) loam; few fine distinct strong brown (7.5YR 5/8) mottles; moderate coarse prismatic structure parting to strong thick platy; firm and slightly brittle; few distinct grayish brown (10YR 5/2) and brown (7.5YR 4/4) clay films on faces of peds; cracks between polygons filled with light gray (10YR 6/1) silt loam; few fine concretions of iron and manganese oxide; very strongly acid; gradual smooth boundary.

3Btx3—50 to 60 inches; dark yellowish brown (10YR 4/6) loam; few fine distinct strong brown (7.5YR 5/6) mottles; moderate coarse prismatic structure parting to moderate thick platy; firm and slightly brittle; few distinct brown (7.5YR 4/4) clay films on faces of peds; cracks between polygons filled with light gray (10YR 7/2) silt loam; few fine concretions of iron and manganese oxide; very strongly acid.

Range in Characteristics

Depth to a fragipan: 25 to 40 inches

Thickness of the loess: 30 to 40 inches

Ap horizon:

Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

E horizon:

Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or silty clay loam

Btx, 2Btx, and 3Btx horizons:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 8

Texture—silty clay loam, silt loam, or loam

2C and 3C horizons:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—2 to 4

Texture—silt loam or loam

Birds Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderately slow

Landscape: Flood plains

Landform: Low flood plains

Landform position: Shallow depressions and old stream channels on the valley floors along major streams and the Embarras River

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, nonacid, mesic Typic Fluvaquents

Typical Pedon

Birds silt loam, frequently flooded, 660 feet east and 1,780 feet south of the northwest corner of sec. 18, T. 10 N., R. 10 E.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; few thin brown (10YR 5/3) depositional strata; few very fine and fine roots throughout; slightly acid; abrupt smooth boundary.

ACg1—6 to 10 inches; dark grayish brown (10YR 4/2) silt loam, gray (10YR 6/1) dry; few fine distinct dark brown (7.5YR 3/4) mottles; weak medium subangular blocky structure; friable; few thin grayish brown (10YR 5/2) depositional strata; few very fine roots; few distinct dark gray (10YR 4/1) organic coatings on faces of peds; neutral; clear smooth boundary.

ACg2—10 to 15 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; common fine distinct dark brown (7.5YR 3/4) mottles; weak medium subangular blocky structure; friable; few thin grayish brown (10YR 5/2) depositional strata; few very fine roots; few distinct dark gray (10YR 4/1) organic coatings on faces of peds; few pebbles; neutral; clear smooth boundary.

ACg3—15 to 22 inches; dark gray (10YR 4/1) silt loam, gray (10YR 5/1) dry; few fine distinct dark brown (7.5YR 3/4) mottles; weak medium and coarse subangular blocky structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few pebbles; neutral; gradual smooth boundary.

Cg1—22 to 35 inches; dark gray (10YR 4/1) silt loam; few fine distinct dark brown (7.5YR 3/4) mottles; massive; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; gradual smooth boundary.

Cg2—35 to 55 inches; dark gray (10YR 4/1) silt loam; common fine distinct brown (7.5YR 4/4) and dark brown (7.5YR 3/4) mottles; massive; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few pebbles; neutral; gradual smooth boundary.

Cg3—55 to 60 inches; dark gray (5Y 4/1) silt loam; many fine distinct brown (7.5YR 4/4) and dark brown (7.5YR 3/4) mottles; massive; friable; common very dark gray (N 3/0) strata; few pebbles; neutral.

Range in Characteristics

Ap or A horizon:

Hue—10YR

Value—4 to 6

Chroma—1 or 2

Texture—silt loam

ACg horizon:

Hue—10YR or 2.5Y

Value—dominantly 4 to 6; 3 in thin strata in some pedons

Chroma—1 or 2

Texture—silt loam

Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—dominantly 5 to 7; 3 or 4 in thin strata in some pedons

Chroma—1 or 2

Texture—dominantly silt loam; strata of silty clay loam, clay loam, loam, or sandy loam in some pedons

Blackoar Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderate

Landscape: Flood plains

Landform: Low flood plains

Landform position: On broad flats away from the stream channels and in depressions and old drainageways on the valley floors along major streams and the Embarras River

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Fluvaquentic Haplaquolls

Typical Pedon

Blackoar silt loam, frequently flooded, 450 feet west and 615 feet south of the center of sec. 20, T. 10 N., R. 9 E.

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak medium granular structure parting to moderate fine granular; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

A—7 to 15 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak thick platy structure parting to moderate medium and coarse subangular blocky; friable; few very fine and fine roots; neutral; abrupt smooth boundary.

Bg1—15 to 30 inches; gray (10YR 6/1) silt loam; many medium prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) mottles; weak coarse prismatic structure parting to moderate medium and coarse subangular blocky; friable; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds and few distinct gray (10YR 5/1) organic coatings in root channels and/or pores; neutral; clear smooth boundary.

Bg2—30 to 44 inches; gray (10YR 6/1) silt loam; common medium distinct yellowish brown (10YR 5/4 and 5/6) mottles; moderate coarse prismatic structure; friable; few very fine roots; 3-inch depositional stratum of silty material beginning at a depth of 30 inches; few distinct gray (10YR 5/1) clay films on faces of peds; few fine manganese or iron-manganese stains; medium acid; clear smooth boundary.

Btg1—44 to 49 inches; gray (10YR 6/1) silty clay loam; common medium prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) and common medium distinct yellowish brown (10YR 5/4) mottles; weak coarse prismatic structure; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds and in pores; few fine manganese or iron-manganese stains; medium acid; clear smooth boundary.

Btg2—49 to 55 inches; gray (10YR 6/1) silty clay loam; common fine prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) and common fine distinct

yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; firm; common distinct gray (10YR 5/1) clay films in root channels and/or pores; few fine manganese or iron-manganese stains; slightly acid; clear smooth boundary.

Btg3—55 to 60 inches; gray (10YR 5/1) silty clay loam; many medium prominent brown (7.5YR 4/4) and many medium faint gray (10YR 6/1) mottles; massive; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds and in pores; few fine manganese or iron-manganese stains; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 15 inches

A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

Bg and Btg horizons:

Hue—10YR

Value—4 to 6

Chroma—1 or 2

Texture—silt loam or silty clay loam

Blair Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderately slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Head slopes and side slopes along drainageways

Parent material: Loamy water-worked sediments

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, mesic Aquic Hapludalfs

Typical Pedon

Blair silt loam, in an area of Ava-Blair complex, 2 to 7 percent slopes, eroded, 1,636 feet west and 1,090 feet south of the northeast corner of sec. 30, T. 10 N., R. 9 E.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light yellowish brown (10YR 6/4) dry; weak fine granular structure; friable; common fine roots throughout; 5 percent mixing of yellowish brown (10YR 5/4) subsoil material in the lower part; neutral; clear smooth boundary.

Bt1—8 to 13 inches; yellowish brown (10YR 5/4) silty

clay loam; common fine faint yellowish brown (10YR 5/6) and brown (10YR 5/3) mottles; moderate fine and medium subangular blocky structure; firm; common fine roots throughout; few distinct dark brown (10YR 3/3) clay films on faces of peds; mixed with fragments of dark grayish brown (10YR 4/2) surface soil material in the upper part; strongly acid; clear smooth boundary.

Bt2—13 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; common medium distinct grayish brown (10YR 5/2) and many medium prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots throughout; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine iron and manganese stains; medium acid; clear smooth boundary.

Btg1—20 to 26 inches; grayish brown (10YR 5/2) clay loam; many medium prominent strong brown (7.5YR 5/6) and common medium faint light brownish gray (10YR 6/2) mottles; moderate medium prismatic structure parting to weak fine angular blocky; very firm; few fine roots throughout; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine iron and manganese stains; medium acid; gradual smooth boundary.

Btg2—26 to 38 inches; grayish brown (10YR 5/2) clay loam; many medium distinct yellowish brown (10YR 5/4) and common medium faint brown (10YR 5/3) mottles; moderate medium prismatic structure parting to weak medium subangular blocky; very firm; few fine roots throughout; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine iron and manganese stains; slightly acid; gradual smooth boundary.

BCg1—38 to 52 inches; dark grayish brown (10YR 4/2) clay loam; common medium faint gray (10YR 5/1) and many medium prominent brown (7.5YR 4/4) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; few fine roots in the upper part; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine and medium iron and manganese stains; 2 percent glacial pebbles; neutral; clear smooth boundary.

BCg2—52 to 60 inches; gray (10YR 6/1) clay loam; many medium prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) mottles; weak medium prismatic structure; firm; few faint grayish brown

(10YR 5/2) clay films on faces of peds; common fine iron and manganese stains; 1 percent glacial pebbles; neutral.

Range in Characteristics

Thickness of the loess: 0 to 16 inches

Profile feature: Some pedons have an E horizon.

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam

Bt and Btg horizons:

Hue—10YR to 5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam, silt loam, clay loam, or loam

BCg horizon:

Hue—10YR

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam, clay loam, loam, sandy clay loam, or silt loam

Cg horizon:

Hue—10YR

Value—4 to 6

Chroma—1 or 2

Texture—loam or silt loam

Taxadjunct feature: The Blair soils in this county are taxadjuncts because they have more sand in the particle-size control section than is definitive for the series. This difference, however, does not significantly affect the usefulness or behavior of the soils.

Bluford Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Broad interfluves and flats, low swells, shoulders, head slopes, and side slopes

Parent material: Loess and the underlying loamy sediments

Slope range: 0 to 5 percent

Taxonomic classification: Fine, montmorillonitic, mesic Aeric Ochraqualfs

Typical Pedon

Bluford silt loam, 0 to 2 percent slopes, 2,460 feet east and 1,340 feet south of the northwest corner of sec. 7, T. 10 N., R. 10 E.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, very pale brown (10YR 7/3) dry; weak medium and coarse granular structure parting to moderate thin and medium platy in the lower part; friable; slightly acid; abrupt smooth boundary.

E—9 to 16 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/4) dry; common medium faint light brownish gray (10YR 6/2) and common medium prominent brown (7.5YR 4/4) mottles; moderate thin and thick platy structure parting to moderate fine subangular blocky; friable; many distinct light gray (10YR 6/1) silt coatings on faces of peds; few distinct brown (10YR 4/3) organic coatings in root channels in the upper part; medium acid; abrupt smooth boundary.

Bt1—16 to 22 inches; brown (10YR 4/3) silty clay loam; common fine faint light brownish gray (10YR 6/2) and common fine distinct brown (7.5YR 4/4) mottles; strong medium angular blocky structure; firm; common faint grayish brown (10YR 5/2) clay films on faces of peds; many distinct light gray (10YR 6/1) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt2—22 to 28 inches; grayish brown (2.5Y 5/2) silty clay loam; common fine prominent brown (7.5YR 4/4) and yellowish brown (10YR 5/6) mottles; strong medium and coarse angular blocky structure; firm; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; common distinct light gray (10YR 6/1) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt3—28 to 35 inches; grayish brown (2.5Y 5/2) silty clay loam; common medium prominent brown (7.5YR 4/4) and many medium prominent yellowish brown (10YR 5/6) mottles; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; common distinct light gray (10YR 6/1) silt coatings on faces of peds; few medium iron stains; strongly acid; abrupt smooth boundary.

2Btx1—35 to 40 inches; light yellowish brown (10YR 6/4) silt loam; common fine distinct brown (7.5YR 4/4) and yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm; common faint grayish brown (10YR 5/2) clay films on faces of peds; many distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine

iron stains; slightly brittle; strongly acid; abrupt smooth boundary.

2Btx2—40 to 49 inches; mottled light brownish gray (10YR 6/2), brown (7.5YR 4/4), and strong brown (7.5YR 5/6) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few faint grayish brown (2.5Y 5/2) clay films on faces of peds; few fine iron stains; slightly brittle; medium acid; abrupt smooth boundary.

2Btx3—49 to 58 inches; mottled gray (10YR 6/1), yellowish brown (10YR 5/4), and strong brown (7.5YR 5/6) silt loam; weak thick platy structure; firm; few faint grayish brown (2.5Y 5/2) clay films on faces of peds; few fine iron stains; slightly brittle; slightly acid; abrupt smooth boundary.

2Btx4—58 to 60 inches; mottled yellowish brown (10YR 5/6), light brownish gray (10YR 6/2), and dark yellowish brown (10YR 4/4) loam; weak thick platy structure; firm; few faint grayish brown (2.5Y 5/2) clay films in pores; few fine iron stains; slightly brittle; slightly acid.

Range in Characteristics

Thickness of the loess: 30 to 45 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—silty clay loam or silty clay

2Btx horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—1 to 6

Texture—silt loam, loam, silty clay loam, or clay loam

Brooklyn Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Slow

Landscape: Uplands

Landform: Outwash plains

Landform position: Broad flats and depressions

Parent material: Loess and the underlying stratified, loamy outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Mollic Albaqualfs

Typical Pedon

Brooklyn silt loam, 1,900 feet west and 2,600 feet north of the southeast corner of sec. 24, T. 11 N., R. 10 E.

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

Eg1—9 to 14 inches; grayish brown (10YR 5/2) silt loam; common fine prominent yellowish brown (10YR 5/8) mottles; weak thin platy structure parting to moderate fine subangular blocky; friable; very strongly acid; abrupt smooth boundary.

Eg2—14 to 17 inches; grayish brown (10YR 5/2) silt loam; common fine prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) mottles; moderate thin platy structure parting to moderate fine subangular blocky; friable; strongly acid; clear smooth boundary.

Btg1—17 to 25 inches; grayish brown (2.5Y 5/2) silty clay; many medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; few distinct dark gray (10YR 4/2) and common prominent light gray (10YR 7/2) clay films on faces of peds; few medium rounded dark accumulations of iron and manganese oxide; medium acid; clear smooth boundary.

Btg2—25 to 36 inches; grayish brown (2.5Y 5/2) silty clay loam; many medium prominent yellowish brown (10YR 5/8) mottles; moderate coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few medium rounded dark accumulations of iron and manganese oxide; slightly acid; clear smooth boundary.

Btg3—36 to 45 inches; gray (2.5Y 5/2) silty clay loam; many coarse prominent dark yellowish brown (10YR 4/6) mottles; moderate coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium rounded dark accumulations of iron and manganese oxide; neutral; clear smooth boundary.

2BCg—45 to 56 inches; gray (10YR 5/1) silt loam;

many medium prominent dark yellowish brown (10YR 4/6) mottles; weak coarse subangular blocky structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; common medium rounded dark accumulations of iron and manganese oxide; slightly acid; clear smooth boundary.

2Cg—56 to 60 inches; grayish brown (10YR 5/2), stratified silt loam, silty clay loam, and sandy clay loam; common medium prominent yellowish brown (10YR 5/8) and many medium prominent dark yellowish brown (10YR 4/6) mottles; massive; firm; common medium rounded dark accumulations of iron and manganese oxide; slightly acid.

Range in Characteristics

Thickness of the loess: 37 to 58 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

Eg horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—silt loam

Btg horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—silty clay or silty clay loam

2BCg horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—clay loam, sandy clay loam, or silt loam

2Cg horizon:

Hue—10YR

Value—5

Chroma—2

Texture—stratified silt loam, silty clay loam, loam, sandy clay loam, or sandy loam; the gravelly analogs of these textures in some pedons

Camden Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the solum and moderately rapid in the underlying material

Landscape: Uplands, terraces, and flood plains

Landform: Outwash plains, stream terraces, and high flood plains

Landform position: Swells, treads, risers, alluvial footslopes, and low terraces along major streams and the Embarras River

Parent material: Loess or silty material and the underlying loamy outwash or alluvium

Slope range: 0 to 5 percent

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

Typical Pedon

Camden silt loam, 0 to 2 percent slopes, 1,040 feet west and 1,400 feet north of the southeast corner of sec. 27, T. 11 N., R. 8 E.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine and medium granular structure; friable; few fine roots throughout; neutral; abrupt smooth boundary.

Bt1—8 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; weak thick platy structure parting to weak very fine and fine subangular blocky; friable; few fine roots throughout; very few faint brown (10YR 4/3) clay films on faces of pedis; neutral; clear smooth boundary.

Bt2—12 to 20 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots throughout; common faint brown (10YR 4/3) clay films on faces of pedis; medium acid; clear smooth boundary.

Bt3—20 to 35 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots throughout; common faint dark yellowish brown (10YR 4/4) clay films on faces of pedis; few fine concretions of iron and manganese oxide; medium acid; abrupt smooth boundary.

2Bt4—35 to 46 inches; brown (7.5YR 4/4) sandy clay loam; weak fine and medium subangular blocky structure; very friable; very few faint dark grayish brown (10YR 4/2) clay films in root channels in the upper part; 14 percent glacial pebbles; medium acid; abrupt smooth boundary.

2C—46 to 60 inches; brown (7.5YR 4/4) gravelly sandy loam; massive; very friable; 16 percent glacial pebbles; medium acid.

Range in Characteristics

Thickness of the loess or silty material: 24 to 40 inches

Content of gravel, by volume, in the outwash material (2Bt and 2C horizons): 10 to 25 percent

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—clay loam, silt loam, sandy loam, sandy clay loam, gravelly sandy clay loam, or gravelly sandy loam

2C horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—dominantly sandy loam, loam, silt loam, or gravelly sandy loam; strata of sand in some pedons

Cisne Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Broad flats

Parent material: Loess and the underlying loamy sediments

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Mollic Albaqualfs

Typical Pedon

Cisne silt loam, 1,500 feet south and 160 feet east of the center of sec. 18, T. 10 N., R. 9 E.

Ap1—0 to 5 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak very fine and fine granular structure; friable; many very fine and fine roots; medium acid; abrupt smooth boundary.

Ap2—5 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak fine granular; friable; common fine roots; medium acid; abrupt smooth boundary.

Eg1—9 to 12 inches; dark grayish brown (10YR 4/2) silt loam; few fine prominent strong brown (7.5YR 5/6) mottles; weak thick platy structure parting to weak fine subangular blocky; friable; common fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

Eg2—12 to 20 inches; grayish brown (10YR 5/2) silt loam; common fine faint brown (10YR 5/3) and yellowish brown (10YR 5/6) mottles; weak thick platy structure parting to weak very fine and fine subangular blocky; friable; few fine roots; few distinct dark grayish brown (10YR 4/2) organic coatings and common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; strongly acid; abrupt smooth boundary.

Btg1—20 to 30 inches; dark gray (10YR 4/1) silty clay loam; common fine distinct yellowish red (5YR 5/8) mottles; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few fine roots; many distinct very dark gray (10YR 3/1) organic coatings and many faint dark gray (10YR 4/1) clay films on faces of peds; strongly acid; clear smooth boundary.

Btg2—30 to 44 inches; gray (10YR 5/1) silty clay loam; many medium distinct strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few distinct very dark gray (10YR 3/1) organic coatings and common faint gray (10YR 5/1) clay films on faces of peds; few fine iron and manganese stains; medium acid; abrupt smooth boundary.

Btg3—44 to 54 inches; gray (10YR 5/1) silty clay loam; many fine distinct strong brown (7.5YR 5/6) and common fine distinct brown (7.5YR 4/4) mottles; moderate medium prismatic structure parting to weak medium subangular blocky; very firm; few faint dark gray (10YR 4/1) clay films on faces of peds; few fine iron and manganese stains; neutral; abrupt smooth boundary.

2Btg4—54 to 60 inches; gray (10YR 5/1) loam; few fine distinct strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; very firm; few faint dark gray (10YR 4/1) clay films and few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine iron and manganese stains; few pebbles; neutral.

Range in Characteristics

Thickness of the dark surface layer: 7 to 9 inches

Thickness of the loess: 35 to 55 inches

A horizon:

Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E horizon:

Hue—10YR
Value—4 to 7
Chroma—1 or 2
Texture—silt loam

Btg horizon:

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay or silty clay

2Btg and 2BCg horizons:

Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 or 2
Texture—loam or silt loam

2Cg horizon:

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam, loam, or silty clay loam

Comfrey Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderate

Landscape: Flood plains

Landform: Low flood plains

Landform position: On narrow flats along the upper reach of tributaries and in depressions and old drainageways on the valley floors along major streams

Parent material: Loamy alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, mesic Cumulic Haplaquolls

Typical Pedon

Comfrey silt loam, overwash, frequently flooded, 2,450 feet west and 1,260 feet south of the northeast corner of sec. 32, T. 11 N., R. 9 E.

Ap1—0 to 6 inches; very dark gray (10YR 3/1) silt

loam, grayish brown (10YR 5/2) dry; weak medium platy structure parting to moderate fine granular; friable; common very fine and fine roots; slightly acid; abrupt smooth boundary.

Ap2—6 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium and thin platy structure parting to moderate fine granular; friable; common very fine and fine roots; few thin grayish brown (10YR 5/2) depositional strata; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A1—11 to 28 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium prismatic structure parting to moderate medium angular blocky; firm; few very fine and fine roots; few faint dark brown (10YR 3/3) organic coatings in root channels and many distinct black (N 2.5/0) organic coatings on faces of peds; 1 percent gravel; slightly acid; gradual smooth boundary.

A2—28 to 46 inches; very dark gray (10YR 3/1) clay loam, dark gray (10YR 4/1) dry; few fine prominent brown (7.5YR 4/4) and few medium distinct dark yellowish brown (10YR 4/4) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine and fine roots; many distinct black (N 2.5/0) organic coatings on faces of peds; 1 percent gravel; neutral; clear smooth boundary.

Bg—46 to 51 inches; grayish brown (2.5YR 5/2) clay loam; common fine prominent brown or dark brown (7.5YR 4/4) mottles; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine and fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; 1 percent gravel; neutral; clear smooth boundary.

Cg—51 to 60 inches; grayish brown (2.5Y 5/2) clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; moderate coarse prismatic structure parting to weak coarse subangular blocky; friable; few very fine and fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; 2 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Thickness of the silty overwash: 10 to 20 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam, loam, silty clay loam, or clay loam

Bg horizon:

Hue—2.5Y or neutral

Value—2 to 5

Chroma—0 to 2

Texture—clay loam or loam

Cg horizon:

Hue—2.5Y or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—dominantly loam or clay loam; strata of sandy clay loam or sandy loam below a depth of 40 inches in some pedons

Coulterville Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Head slopes and side slopes along drainageways

Parent material: Loess and the underlying loamy sediments

Slope range: 2 to 5 percent

Taxonomic classification: Fine-silty, mixed, mesic Aeric Ochraqualfs

Typical Pedon

Coulterville silt loam, 2 to 5 percent slopes, eroded, 1,080 feet east and 2,000 feet south of the northwest corner of sec. 33, T. 9 N., R. 8 E.

Ap—0 to 8 inches; brown (10YR 5/3) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 14 inches; yellowish brown (10YR 5/4) silty clay loam; few fine prominent yellowish red (5YR 5/6) and common fine faint yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few distinct light gray (10YR 7/2) silt coatings on faces of peds in the upper 2 inches; many faint dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; medium acid; abrupt smooth boundary.

Bt2—14 to 24 inches; brown (10YR 5/3) silty clay loam; common fine faint grayish brown (10YR 5/2) and yellowish brown (10YR 5/6) and common fine

distinct brown (7.5YR 4/4) and strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; few fine very dark brown (10YR 2/2) manganese or iron-manganese stains; common faint dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; slightly acid; clear smooth boundary.

Bt3—24 to 33 inches; mottled light brownish gray (10YR 6/2), brown (10YR 5/3), and strong brown (7.5YR 5/6) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; 8 percent exchangeable sodium; few faint dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine soft masses of iron and manganese oxide; neutral; abrupt smooth boundary.

Bt4—33 to 44 inches; mottled light brownish gray (10YR 6/2), strong brown (7.5YR 5/6), and brown (10YR 5/3) silt loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; 10 percent exchangeable sodium; few faint dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine soft masses of iron and manganese oxide; neutral; clear smooth boundary.

Bt5—44 to 55 inches; mottled grayish brown (10YR 5/2), brown (10YR 5/3), and strong brown (7.5YR 5/6) silt loam; weak coarse prismatic structure parting to weak medium subangular blocky; firm; 12 percent exchangeable sodium; few faint dark grayish brown (10YR 4/2) clay films on faces of peds and in pores; common fine soft masses of iron and manganese oxide; neutral; clear smooth boundary.

2BC—55 to 60 inches; mottled yellowish brown (10YR 5/4), light brownish gray (10YR 6/2), and strong brown (7.5YR 5/6) loam; weak coarse prismatic structure; firm; 12 percent exchangeable sodium; very few faint grayish brown (10YR 5/2) clay films in root channels and/or pores; many fine soft masses of iron and manganese oxide; neutral.

Range in Characteristics

Depth to a sodium concentration of 5 to 15 percent: 10 to 35 inches

Thickness of the loess: 35 to 60 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

Bt and Btg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam or silt loam

2Btg and 2BC horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—loam or silty clay loam

Darmstadt Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Low swells on broad flats

Parent material: Loess and the underlying loamy sediments

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Albic Natraqualfs

Typical Pedon

Darmstadt silt loam, in an area of Bluford-Darmstadt complex, 0 to 2 percent slopes, 1,700 feet west and 500 feet south of the northeast corner of sec. 22, T. 9 N., R. 7 E.

Ap—0 to 10 inches; dark brown (10YR 3/3) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; neutral; abrupt smooth boundary.

E—10 to 13 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/2) dry; many fine faint dark grayish brown (10YR 4/2), few fine faint brown (10YR 4/3), and common fine prominent brown (7.5YR 4/4) mottles; moderate thin and thick platy structure; friable; neutral; abrupt smooth boundary.

Bt—13 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; light brownish gray (10YR 6/2) faces of peds; many fine distinct yellowish brown (10YR 5/8) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; few fine iron stains; mildly alkaline; clear wavy boundary.

Btg1—18 to 40 inches; grayish brown (2.5Y 5/2) silty clay loam; light brownish gray (10YR 6/2) faces of

pedes; common medium prominent yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak medium and coarse subangular blocky; firm; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of pedes; common medium concretions of iron and manganese oxide; moderately alkaline; clear wavy boundary.

Btg2—40 to 48 inches; light brownish gray (10YR 6/2) silt loam; many medium prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak thick platy; firm; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of pedes; common medium concretions of iron and manganese oxide; mildly alkaline; abrupt smooth boundary.

2Btg3—48 to 58 inches; light brownish gray (10YR 6/2) loam; many medium distinct yellowish brown (10YR 5/6) and common medium prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak medium angular blocky; firm; common distinct grayish brown (2.5Y 5/2) clay films on faces of pedes; few fine concretions of iron and manganese oxide; moderately alkaline; abrupt smooth boundary.

2BC—58 to 60 inches; light brownish gray (10YR 6/2) loam; many medium distinct yellowish brown (10YR 5/6) and common medium prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure; firm; few distinct grayish brown (2.5Y 5/2) clay films lining pores; common medium concretions of iron and manganese oxide; mildly alkaline.

Range in Characteristics

Depth to a sodium concentration of 15 percent or more: 16 to 35 inches

Thickness of the loess: 40 to 50 inches

Ap horizon:

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—silt loam

E horizon:

Hue—10YR

Value—5 or 6

Chroma—2

Texture—silt loam

Bt and 2Btg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—silty clay loam, silty clay, silt loam, or loam

Drummer Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderately slow in the upper part of the solum and moderate in the lower part

Landscape: Uplands and terraces

Landform: Wisconsinan outwash plains and till plains and stream terraces

Landform position: Nearly level to depressional areas

Parent material: Loess or silty material and the underlying stratified, loamy outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Typic Haplaquolls

Typical Pedon

Drummer silt loam, 800 feet west and 880 feet south of the northeast corner of sec. 34, T. 11 N., R. 8 E.

Ap—0 to 10 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; common distinct black (10YR 2/1) organic coatings in root channels; neutral; clear smooth boundary.

A1—10 to 14 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure parting to moderate medium granular; friable; neutral; abrupt smooth boundary.

A2—14 to 20 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; few fine prominent brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; friable; many distinct black (10YR 2/1) organic coatings on faces of pedes; neutral; abrupt smooth boundary.

Btg1—20 to 26 inches; dark grayish brown (2.5Y 4/2) silty clay loam; common fine prominent yellowish brown (10YR 5/4 and 5/6) mottles; moderate medium prismatic structure; firm; many distinct very dark gray (10YR 3/1) and dark grayish brown (10YR 4/2) clay films on faces of pedes; neutral; clear smooth boundary.

Btg2—26 to 31 inches; grayish brown (2.5Y 5/2) silty clay loam; common fine prominent yellowish brown (10YR 5/4 and 5/6) mottles; moderate coarse prismatic structure; firm; many distinct very

dark gray (10YR 3/1) clay films on faces of peds; few fine concretions of iron and manganese oxide; neutral; clear smooth boundary.

Btg3—31 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; many medium prominent yellowish brown (10YR 5/6) mottles; moderate coarse prismatic structure; firm; many distinct black (10YR 2/1) and very dark gray (10YR 3/1) clay films on faces of peds; common distinct very dark gray (10YR 3/1) clay films in root channels; few fine concretions of iron and manganese oxide; neutral; gradual smooth boundary.

Btg4—38 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; many medium prominent yellowish brown (10YR 5/6) and common fine prominent yellowish brown (10YR 5/4) mottles; moderate medium prismatic structure; firm; many distinct very dark gray (10YR 3/1) and black (10YR 2/1) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organic coatings in root channels; few fine concretions of iron and manganese oxide; neutral; clear smooth boundary.

2Btg5—50 to 60 inches; stratified grayish brown (2.5Y 5/2) sandy clay loam, dark grayish brown (10YR 4/2) sandy loam, and light brownish gray (2.5Y 6/2) and yellowish brown (10YR 5/6) loam; weak medium and coarse subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) and black (10YR 2/1) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organic coatings in root channels; neutral.

Range in Characteristics

Depth to carbonates: More than 60 inches

Thickness of the mollic epipedon: 15 to 24 inches

Thickness of the loess: 40 to 60 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Bg and Btg horizons:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 to 4

Texture—silty clay loam or silt loam

2Btg and 2Bg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 6

Texture—silt loam, loam, or stratified sandy clay loam, sandy loam, and loam

Ebbert Series

Depth class: Very deep

Drainage class: Very poorly drained

Permeability: Slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Low areas and shallow, closed depressions

Parent material: Loess

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Argiaquic Argialbolls

Typical Pedon

Ebbert silt loam, 750 feet east and 400 feet north of the southwest corner of sec. 18, T. 5 N., R. 11 E.

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular and angular blocky structure; friable; many very fine and fine roots; slightly acid; abrupt smooth boundary.

A—7 to 12 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many very fine and fine roots; medium acid; abrupt smooth boundary.

E—12 to 18 inches; grayish brown (10YR 5/2) silt loam; few fine distinct dark yellowish brown (10YR 4/6) mottles; weak fine subangular blocky structure; friable; many very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels; strongly acid; abrupt smooth boundary.

Btg1—18 to 31 inches; dark gray (10YR 4/1) silty clay loam; many fine and medium prominent dark yellowish brown (10YR 4/6) and strong brown (7.5YR 5/6 and 5/8) mottles; moderate medium subangular blocky structure; firm; common very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings and dark grayish brown (10YR 4/2) clay films on faces of peds; few fine concretions of iron and manganese oxide; very strongly acid; clear smooth boundary.

Btg2—31 to 52 inches; grayish brown (10YR 5/2) silty clay loam; common fine and medium prominent strong brown (7.5YR 5/6 and 5/8) mottles; moderate medium prismatic structure; firm; common very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings and dark grayish brown (10YR 4/2) clay

films on faces of peds; few fine concretions of iron and manganese oxide; medium acid; clear smooth boundary.

2Cg—52 to 60 inches; grayish brown (10YR 5/2) silty clay loam; common fine distinct yellowish brown (10YR 5/6) mottles; massive; firm; few very fine roots; few fine concretions of iron and manganese oxide; 10 to 15 percent sand; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 16 inches

Thickness of the loess: 45 to more than 60 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

E horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—silt loam

Btg horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—silty clay loam

Cg and 2Cg horizons:

Hue—10YR, 2.5Y, or 5Y

Value—4 or 5

Chroma—1 or 2

Texture—silty clay loam or silt loam

Fincastle Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate in the upper part of the solum and moderately slow in the lower part

Landscape: Uplands

Landform: Wisconsinan till plains

Landform position: Flat or slightly concave areas

Parent material: Loess and the underlying loamy glacial till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Aeric Ochraqualfs

Typical Pedon

Fincastle silt loam, 0 to 2 percent slopes, 100 feet

south and 1,800 feet west of the northeast corner of sec. 29, T. 14 N., R. 10 E.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; neutral; abrupt smooth boundary.

E—8 to 11 inches; grayish brown (10YR 5/2) silt loam; few fine distinct yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; firm; few fine rounded dark accumulations of iron and manganese oxide; medium acid; abrupt smooth boundary.

Bt1—11 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; common fine distinct grayish brown (10YR 5/2) and brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; firm; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine rounded dark accumulations of iron and manganese oxide; medium acid; clear smooth boundary.

Bt2—18 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; common fine and medium distinct brown (7.5YR 4/4) and grayish brown (10YR 5/2) mottles; moderate medium subangular blocky structure; firm; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine rounded dark accumulations of iron and manganese oxide; medium acid; clear smooth boundary.

Bt3—24 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; many medium distinct light brownish gray (10YR 6/2) and common medium yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine rounded dark accumulations of iron and manganese oxide; medium acid; clear smooth boundary.

2Bt4—32 to 40 inches; yellowish brown (10YR 5/6) clay loam; common medium distinct yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; few distinct grayish brown (10YR 5/2) clay films on faces of peds; neutral; clear smooth boundary.

2BC—40 to 50 inches; yellowish brown (10YR 5/6) loam; common medium distinct grayish brown (10YR 5/2) and strong brown (7.5YR 5/6) mottles; weak coarse subangular blocky structure; firm; neutral; clear smooth boundary.

2C—50 to 60 inches; yellowish brown (10YR 5/6) loam; common medium distinct grayish brown (10YR 5/2) and strong brown (7.5YR 5/6) mottles; massive; friable; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 23 to 34 inches

Ap horizon:

Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

E horizon:

Hue—10YR
Value—4 to 6
Chroma—2
Texture—silt loam

Bt and Btg horizons:

Hue—10YR
Value—5 or 6
Chroma—2 to 6
Texture—silty clay loam

2Bt and 2Btg horizons:

Hue—10YR
Value—5 or 6
Chroma—2 to 6
Texture—clay loam or loam

2BC and 2C horizons:

Hue—10YR
Value—5
Chroma—6
Texture—loam or clay loam

Fishhook Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate in the upper of the solum and slow in the lower part

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Side slopes along drainageways

Parent material: Loess and the underlying paleosol, which formed in glacial till

Slope range: 2 to 5 percent

Taxonomic classification: Fine-silty, mixed, mesic Aquic Hapludalfs

Typical Pedon

Fishhook silt loam, 2 to 5 percent slopes, eroded, 360 feet west and 2,200 feet south of the northeast corner of sec. 8, T. 9 N., R. 9 E.

Ap—0 to 5 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium granular

structure; very friable; 5 percent mixing of yellowish brown (10YR 5/4) subsoil material; slightly acid; abrupt smooth boundary.

Bt1—5 to 10 inches; yellowish brown (10YR 5/4) silty clay loam; few fine prominent strong brown (7.5YR 4/6) and few fine distinct light brownish gray (10YR 6/2) mottles; moderate fine and medium subangular blocky structure; friable; common distinct brown (10YR 5/3) clay films on faces of peds; few fine concretions of iron and manganese oxide; slightly acid; clear smooth boundary.

Bt2—10 to 15 inches; brown (10YR 5/3) silty clay loam; few fine distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine concretions of iron and manganese oxide; medium acid; clear smooth boundary.

Bt3—15 to 23 inches; brown (10YR 5/3) silty clay loam; common medium prominent strong brown (7.5YR 4/6) mottles; moderate fine and medium subangular blocky structure; friable; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds and many distinct light brownish gray (2.5Y 6/2) silt coatings on faces of peds at a depth of 22 inches; few fine concretions of iron and manganese oxide; strongly acid; abrupt smooth boundary.

2Btg1—23 to 27 inches; grayish brown (10YR 5/2) silty clay loam; common medium prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) mottles; moderate medium and coarse prismatic structure; firm; many distinct gray (10YR 5/1) clay films on faces of peds; few medium concretions of iron and manganese oxide; strongly acid; clear smooth boundary.

2Btg2—27 to 33 inches; grayish brown (10YR 5/2) silty clay loam; common medium prominent brown (7.5YR 4/4) mottles; moderate medium and coarse prismatic structure; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds; many thick distinct brown (10YR 5/3) and light brownish gray (10YR 6/2) silt coatings on faces of peds; few medium concretions of iron and manganese oxide; strongly acid; gradual smooth boundary.

2Btg3—33 to 47 inches; gray (10YR 5/1) silty clay; common medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) mottles; moderate medium and coarse prismatic structure; firm; many distinct dark gray (10YR 4/1) clay films on

faces of peds; many thick distinct light yellowish brown (10YR 6/4) and light brownish gray (10YR 6/2) silt coatings on faces of peds; few medium concretions of iron and manganese oxide; medium acid; clear smooth boundary.

2Btg4—47 to 60 inches; gray (10YR 5/1) silty clay; many medium prominent brown (7.5YR 4/4) and few medium prominent strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few medium concretions of iron and manganese oxide; neutral.

Range in Characteristics

Thickness of the loess: 20 to 40 inches

Ap horizon:

Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt and Btg horizons:

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam

2Btg horizon:

Hue—10YR, 2.5Y, or 5Y
Value—2 to 7
Chroma—1 or 2
Texture—silty clay loam, silty clay, or clay loam

2BCg and 2Cg horizons:

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—clay loam or loam

Fox Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the solum and rapid in the substratum

Landscape: Terraces

Landform: Stream terraces

Landform position: Treads and risers

Parent material: Loamy material and the underlying deposits of calcareous sand and gravel

Slope range: 2 to 10 percent

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

Typical Pedon

Fox gravelly sandy loam, 2 to 5 percent slopes, eroded, 1,380 feet west and 54 feet north of the southeast corner of sec. 28, T. 11 N., R. 10 E.

Ap1—0 to 4 inches; brown (10YR 4/3) gravelly sandy loam, light yellowish brown (10YR 6/4) dry; moderate fine and medium granular structure; friable; common very fine and fine roots; 16 percent gravel; neutral; abrupt smooth boundary.

Ap2—4 to 7 inches; brown (10YR 4/3) sandy loam, light yellowish brown (10YR 6/4) dry; moderate thin and medium platy structure; friable; common very fine and fine roots; many distinct dark brown (10YR 3/3) organic coatings on faces of peds; 10 percent gravel; neutral; abrupt smooth boundary.

Bt1—7 to 16 inches; brown (7.5YR 4/4) gravelly sandy clay loam; weak medium and coarse subangular blocky structure; firm; few very fine and fine roots; common distinct reddish brown (5YR 5/3) clay films on faces of peds and in pores; 20 percent gravel; slightly acid; clear wavy boundary.

Bt2—16 to 25 inches; brown (7.5YR 4/4) gravelly sandy clay loam; weak medium and coarse subangular blocky structure; firm; few distinct reddish brown (5YR 5/3) clay films in root channels and/or pores; 18 percent gravel; slightly acid; clear wavy boundary.

BC—25 to 32 inches; reddish brown (5YR 4/3) gravelly sandy clay loam; weak medium subangular blocky structure; friable; very few distinct dark reddish brown (5YR 3/2) clay films in root channels and/or pores; 18 percent gravel; slightly acid; clear irregular boundary.

C—32 to 60 inches; yellowish brown (10YR 5/4) very gravelly sand; single grain; loose; 46 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 30 to 40 inches

Thickness of the loess or silty material: 0 to 20 inches

Ap horizon:

Hue—10YR
Value—4
Chroma—3 or 4
Texture—dominantly gravelly sandy loam or sandy loam; silt loam or loam in areas with a loess cap
Content of gravel, by volume—0 to 25 percent

Bt and 2Bt horizons:

Hue—10YR, 7.5YR, or 5YR
Value—3 to 5
Chroma—3 to 5

Texture—dominantly loam, clay loam, sandy loam, sandy clay loam, or the gravelly analogs of those textures; silt loam or silty clay loam in areas with a loess cap

Content of gravel, by volume—0 to 30 percent

C and 2C horizons:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—2 to 4

Texture—dominantly sand or gravelly or very gravelly sand; strata of loamy sand in some pedons

Content of gravel, by volume—0 to 50 percent

Taxadjunct features: The Fox soils in this county are taxadjuncts because they do not have a strongly contrasting particle-size class and have a thicker solum than is definitive for the series. These differences, however, do not significantly affect the usefulness or behavior of the soils.

Gosport Series

Depth class: Moderately deep

Drainage class: Moderately well drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Side slopes along streams and major drainageways

Parent material: Shale residuum

Slope range: 30 to 60 percent

Taxonomic classification: Fine, illitic, mesic Typic Dystrochrepts

Typical Pedon

Gosport silt loam, in an area of Hickory-Gosport complex, 30 to 60 percent slopes, 150 feet north and 1,250 feet west of the southeast corner of sec. 31, T. 8 N., R. 9 E. (Jasper County, Illinois):

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many very fine and fine roots; few pebbles and shale fragments; slightly acid; clear smooth boundary.

E—4 to 7 inches; yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; friable; many very fine and common fine roots; few pebbles and shale fragments; strongly acid; clear smooth boundary.

Bw1—7 to 13 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; common very fine roots; few faint

pale brown (10YR 6/3) clay films on faces of peds; few shale fragments and till pebbles; very strongly acid; gradual smooth boundary.

Bw2—13 to 25 inches; yellowish brown (10YR 5/4) silty clay; common fine faint yellowish brown (10YR 5/6) mottles; moderate medium subangular structure; firm; common very fine and few fine and medium roots; common shale fragments; extremely acid; gradual smooth boundary.

Bw3—25 to 32 inches; yellowish brown (10YR 5/4) silty clay; few fine faint brown (10YR 5/3) and common medium faint yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure with medium platy rock structure in places; firm; common very fine and few fine and medium roots; common shale fragments; extremely acid; gradual smooth boundary.

2Cr—32 to 60 inches; grayish brown (10YR 5/2), gray (N 5/0), and very dark gray (N 3/0) clay shale; medium and thick platy rock structure; extremely firm; few fine and medium roots in bedding planes; strongly acid.

Range in Characteristics

Thickness of the loamy or silty mantle: 0 to 15 inches

A horizon:

Hue—10YR

Value—3 or 4

Chroma—2

Texture—silt loam or loam

E horizon (if it occurs):

Hue—10YR

Value—5

Chroma—4

Texture—silt loam or loam

Bw horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—3 or 4

Texture—silty clay loam or silty clay

2Cr horizon:

Hue—5Y to 7.5YR or neutral

Value—3 to 6

Chroma—0 to 6

Texture—silty clay or clay shale with thin plates of sandstone, lignite, or siltstone

Haymond Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate

Landscape: Flood plains

Landform: Low flood plains

Landform position: Broad valley floors adjacent to major streams and the Embarras River and flood-plain risers along or slightly back from the stream channel

Parent material: Silty alluvium

Slope range: 0 to 5 percent

Taxonomic classification: Coarse-silty, mixed, nonacid, mesic Typic Udifluvents

Typical Pedon

Haymond silt loam, 0 to 2 percent slopes, frequently flooded, 1,740 feet west and 130 feet south of the northeast corner of sec. 31, T. 9 N., R. 9 E.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate thick platy structure parting to moderate medium and coarse granular; friable; few fine roots throughout; mildly alkaline; abrupt smooth boundary.

Bw1—7 to 18 inches; dark yellowish brown (10YR 4/4) silt loam; weak thick platy structure parting to weak fine and medium subangular blocky; friable; few fine roots throughout; common distinct brown or dark brown (10YR 4/3) and few distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw2—18 to 30 inches; dark yellowish brown (10YR 4/4) silt loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few distinct light brownish gray (10YR 6/2) silt coatings in pores and on faces of peds and many distinct brown or dark brown (10YR 4/3) organic coatings on faces of peds; neutral; gradual smooth boundary.

Bw3—30 to 36 inches; yellowish brown (10YR 5/4) silt loam; weak medium and coarse subangular blocky structure; friable; common distinct brown (10YR 4/3) organic coatings in root channels and pores; few distinct brown (10YR 5/3) silt coatings on faces of peds and in pores; neutral; abrupt smooth boundary.

Bw4—36 to 42 inches; yellowish brown (10YR 5/4) silt loam; common medium distinct grayish brown (10YR 5/2) and yellowish red (5YR 4/6) mottles; weak coarse subangular blocky structure; friable; few medium manganese or iron-manganese stains throughout; neutral; abrupt smooth boundary.

BC—42 to 48 inches; yellowish brown (10YR 5/4) silt loam; few fine faint light brownish gray (10YR 6/2) mottles; weak coarse subangular blocky structure; friable; slightly acid; clear smooth boundary.

C—48 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; neutral.

Range in Characteristics

Ap horizon:

Hue—10YR

Value—4

Chroma—2 or 3

Texture—silt loam

Bw horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam

C horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam or fine sandy loam

Hickory Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Nose slopes and side slopes along major drainageways and streams

Parent material: Glacial till or a thin mantle of loess and the underlying glacial till

Slope range: 10 to 60 percent

Taxonomic classification: Fine-loamy, mixed, mesic Typic Hapludalfs

Typical Pedon

Hickory loam, 15 to 30 percent slopes, 2,580 feet south and 360 feet west of the northeast corner of sec. 14, T. 9 N., R. 7 E.

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

E—2 to 5 inches; brown (10YR 5/3) loam, light yellowish brown (10YR 6/4) dry; weak thick platy structure parting to weak fine granular; very friable; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; strongly acid; abrupt smooth boundary.

BE—5 to 10 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable;

very few faint brown (10YR 5/3) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct light gray (10YR 7/2) silt coatings on faces of peds; medium acid; abrupt smooth boundary.

Bt1—10 to 24 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; firm; common faint yellowish brown (10YR 5/4) clay films on faces of peds; common distinct light gray (10YR 7/2) silt coatings on faces of peds; few fine iron stains; medium acid; clear smooth boundary.

Bt2—24 to 34 inches; yellowish brown (10YR 5/6) clay loam; weak medium angular blocky structure; firm; common faint dark yellowish brown (10YR 4/6) clay films on faces of peds; few fine iron stains; medium acid; abrupt smooth boundary.

Bt3—34 to 45 inches; yellowish brown (10YR 5/6) clay loam; weak medium angular blocky structure; firm; common faint dark yellowish brown (10YR 4/6) clay films on faces of peds; common fine iron stains; 1 percent glacial pebbles; medium acid; abrupt smooth boundary.

C—45 to 60 inches; yellowish brown (10YR 5/6) sandy loam; massive; firm; few fine iron stains; 1 percent glacial pebbles; slightly acid.

Range in Characteristics

Depth to carbonates: 40 to 70 inches

Thickness of the loess: 0 to 15 inches

A horizon:

Hue—10YR

Value—2 to 5

Chroma—2 to 4

Texture—silt loam, loam, or clay loam

E horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam or loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam, clay loam, or loam

C horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2 to 6

Texture—loam, sandy loam, or clay loam

Holly Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderate in the solum and moderately rapid in the substratum

Landscape: Flood plains

Landform: Low flood plains

Landform position: Old stream channels, slackwater depressions, and flat areas back from the main channel on the valley floors along minor streams

Parent material: Loamy alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, nonacid, mesic Typic Fluvaquents

Typical Pedon

Holly silt loam, frequently flooded, 600 feet east and 820 feet north of the southwest corner of sec. 33, T. 11 N., R. 10 E.

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (2.5Y 6/2) dry; moderate medium and coarse subangular blocky structure; friable; many very fine and fine roots; neutral; abrupt smooth boundary.

Ap2—6 to 9 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; weak very thick platy structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; few faint dark gray (10YR 4/1) organic coatings on faces of peds; neutral; clear wavy boundary.

Bg1—9 to 15 inches; dark gray (10YR 4/1) loam; few fine distinct dark yellowish brown (10YR 4/6) mottles; moderate thick platy structure parting to moderate fine subangular blocky; friable; common very fine roots; common faint dark gray (10YR 4/1) organic coatings and common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; neutral; clear wavy boundary.

Bg2—15 to 24 inches; gray (10YR 5/1) loam; few fine distinct dark yellowish brown (10YR 4/4) mottles; moderate thick platy structure parting to moderate fine subangular blocky; friable; few very fine roots; common faint dark gray (10YR 4/1) organic coatings and common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; neutral; clear wavy boundary.

Bg3—24 to 38 inches; gray (10YR 5/1) loam; few fine distinct dark yellowish brown (10YR 4/4) mottles; moderate medium subangular blocky structure; friable; few very fine roots; thin light brownish gray

(10YR 6/2) depositional strata of silt loam beginning at a depth of 34 inches; common faint dark gray (10YR 4/1) organic coatings on faces of peds and in pores; few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine soft masses of iron and manganese oxide; neutral; gradual wavy boundary.

Bg4—38 to 44 inches; gray (5Y 5/1), stratified loam and silt loam; common medium distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; few very fine roots; common distinct dark gray (10YR 4/1) organic coatings on faces of peds and in pores and few faint light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine soft masses of iron and manganese oxide; medium acid; gradual wavy boundary.

Cg—44 to 60 inches; mottled grayish brown (10YR 5/2), yellowish brown (10YR 5/6), and brown (7.5YR 4/4) sandy clay loam; massive; friable; common distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores; many medium and coarse soft masses of iron and manganese oxide; medium acid.

Range in Characteristics

Ap horizon:

Hue—10YR
Value—4 or 5
Chroma—1 or 2
Texture—silt loam or loam

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral
Value—4 to 6
Chroma—0 to 2
Texture—loam, silt loam, or sandy loam; stratified in some pedons

Cg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral
Value—5
Chroma—0 to 2
Texture—loam or sandy clay loam; stratified in some pedons

Holton Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate in the solum and moderately rapid in the substratum

Landscape: Flood plains

Landform: Low flood plains

Landform position: Narrow flats along minor streams and drainageways

Parent material: Loamy alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-loamy, mixed, nonacid, mesic Aeric Fluvaquents

Typical Pedon

Holton loam, frequently flooded, 500 feet north and 90 feet east of the southwest corner of sec. 32, T. 11 N., R. 10 E.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loam, pale brown (10YR 6/3) dry; weak medium platy structure parting to moderate medium granular; friable; few fine roots; few thin brown (10YR 5/3) depositional strata; neutral; clear smooth boundary.

Bw1—7 to 14 inches; dark grayish brown (10YR 4/2) silt loam; few fine distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; very friable; few fine roots; common thin brown (10YR 5/3) platy depositional strata; neutral; clear smooth boundary.

Bw2—14 to 27 inches; stratified dark grayish brown (10YR 4/2) loam and brown (10YR 5/3) loamy sand; common fine prominent reddish brown (5YR 4/4) mottles; weak medium subangular blocky structure in the strata of loam and weak medium platy structure in the strata of loamy sand; very friable; few fine roots; few fine soft masses of iron and manganese oxide; neutral; clear smooth boundary.

Bw3—27 to 32 inches; dark grayish brown (10YR 4/2) silt loam; common fine prominent reddish brown (5YR 4/4) mottles; weak medium subangular blocky structure; very friable; many fine roots; few thin brown (10YR 5/3) depositional strata; common fine and medium soft masses of iron and manganese oxide; neutral; clear smooth boundary.

C1—32 to 43 inches; grayish brown (10YR 5/2), stratified loam and sandy loam; common fine prominent reddish brown (5YR 4/4) and few faint brown (10YR 5/3) mottles; massive; very friable; few fine roots; common fine and medium soft masses of iron and manganese oxide; neutral; abrupt wavy boundary.

C2—43 to 60 inches; yellowish brown (10YR 5/4) sand; few fine faint yellowish brown (10YR 5/6) mottles; single grain; loose; common fine and medium soft masses of iron and manganese oxide; 1 percent pebbles; mildly alkaline.

Range in Characteristics

Ap or A horizon:

Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam or loam

Bw horizon:

Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 to 4
Texture—silt loam, loam, or fine sandy loam with strata of loamy sand

C horizon:

Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 to 4
Texture—sandy clay loam, sandy loam, loam, or sand; stratified in some pedons
Content of gravel, by volume—0 to 10 percent

Hoyleton Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Broad flats, low swells, head slopes of draws, and shoulders and side slopes along drainageways

Parent material: Loess and the underlying loamy sediments

Slope range: 0 to 5 percent

Taxonomic classification: Fine, montmorillonitic, mesic Aquollic Hapludalfs

Typical Pedon

Hoyleton silt loam, 0 to 2 percent slopes, 2,170 feet west and 500 feet north of the southeast corner of sec. 3, T. 10 N., R. 7 E.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak medium granular; friable; 10 percent mixing of brown (10YR 5/3) E material in the lower part; common fine roots; neutral; abrupt smooth boundary.

E—8 to 12 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; few fine faint yellowish brown (10YR 5/6) mottles; moderate medium platy

structure; friable; few fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine manganese or iron-manganese stains throughout; slightly acid; abrupt smooth boundary.

Bt1—12 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; common fine prominent reddish brown (5YR 5/4) and few fine distinct light brownish gray (10YR 6/2) mottles; moderate medium and thick platy structure parting to weak fine subangular blocky; firm; few fine roots; many distinct light brownish gray (10YR 6/2) silt coatings and many distinct grayish brown (10YR 5/2) clay films on faces of peds; very strongly acid; abrupt smooth boundary.

Bt2—15 to 19 inches; brown (10YR 5/3) silty clay; many medium prominent yellowish red (5YR 5/6) mottles; moderate fine and medium prismatic structure; very firm; few fine roots; few distinct light brownish gray (10YR 6/2) silt coatings and many distinct grayish brown (10YR 5/2) clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt3—19 to 22 inches; yellowish brown (10YR 5/4) silty clay; many medium faint yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure; very firm; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine and medium soft masses of iron and manganese oxide; very strongly acid; clear smooth boundary.

Bt4—22 to 30 inches; brown (10YR 5/3) silty clay loam; many medium distinct strong brown (7.5YR 5/6) and common medium distinct light brownish gray (2.5Y 6/2) mottles; moderate coarse prismatic structure; firm; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few medium soft masses of iron and manganese oxide; strongly acid; clear smooth boundary.

Bt5—30 to 45 inches; mottled brown (10YR 5/3), light brownish gray (2.5Y 6/2), and strong brown (7.5YR 5/6) silty clay loam; weak coarse prismatic structure parting to weak very thin platy; friable; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; few fine and medium soft masses of iron and manganese oxide; medium acid; clear smooth boundary.

2BC—45 to 60 inches; yellowish brown (10YR 5/4) silt loam; many medium prominent light brownish gray (2.5Y 6/2) and strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure parting to weak thick platy; friable; few distinct grayish brown

(10YR 5/2) clay films on faces of peds; few fine and medium soft masses of iron and manganese oxide; neutral.

Range in Characteristics

Thickness of the loess: 35 to 50 inches

Ap horizon:

Hue—10YR
Value—3
Chroma—2 or 3
Texture—silt loam

E horizon:

Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture—silt loam

Bt horizon:

Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silty clay

2Bt and 2BC horizons:

Hue—10YR
Value—5 or 6
Chroma—2 to 4
Texture—silt loam or silty clay loam

Huey Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Broad flats and shallow depressions

Parent material: Loess and the underlying loamy sediments and paleosol, which formed in till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Typic Natraqualfs

Typical Pedon

Huey silt loam, in an area of Wynoose-Huey complex, 180 feet north and 2,500 feet west of the center of sec. 2, T. 9 N., R. 7 E.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

E—7 to 14 inches; grayish brown (10YR 5/2) silt loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium and thick platy structure parting to weak fine subangular blocky; friable; few very fine and fine roots; common distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds and in pores and light brownish gray (10YR 6/2) silt coatings on faces of peds; neutral; clear smooth boundary.

Btg1—14 to 25 inches; light brownish gray (2.5Y 6/2) silty clay loam; common medium distinct brown or dark brown (7.5YR 4/4) and dark yellowish brown (10YR 4/6) mottles; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many faint grayish brown (2.5Y 5/2) clay films on faces of peds and in pores and few distinct dark grayish brown (10YR 4/2) organic coatings in root channels and/or pores; few fine soft masses of iron and manganese oxide; mildly alkaline; clear smooth boundary.

Btg2—25 to 39 inches; light brownish gray (2.5Y 6/2) silty clay loam; common medium distinct brown or dark brown (7.5YR 4/4) and yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds and in pores and few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine soft masses of iron and manganese oxide; mildly alkaline; abrupt smooth boundary.

2BCg—39 to 52 inches; light brownish gray (10YR 6/2) silt loam; many medium prominent brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure parting to weak medium subangular blocky; firm; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds and in pores and few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; many fine and medium soft masses of iron and manganese oxide; mildly alkaline; abrupt smooth boundary.

2Cg—52 to 60 inches; light brownish gray (10YR 6/2) silt loam; many medium prominent brown (7.5YR 4/4) and yellowish brown (10YR 5/6) mottles; massive with a platy tendency; friable; few distinct light brownish gray (10YR 6/2) silt coatings in root channels and/or pores; few fine and medium soft masses of iron and manganese oxide; neutral.

Range in Characteristics

Thickness of the loess: 35 to 50 inches

Depth to the paleosol: 40 to 65 inches

Ap horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—2

Texture—silt loam

Btg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam, silty clay loam, or silty clay

2Btg and 2BCg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam or silty clay loam

2Cg horizon:

Hue—10YR, 2.5Y, or 7.5YR

Value—4 to 6

Chroma—1 or 2

Texture—loam, silt loam, or silty clay loam

Landes Series*Depth class:* Very deep*Drainage class:* Well drained*Permeability:* Moderately rapid in the solum and rapid in the substratum*Landscape:* Flood plains*Landform:* Low flood plains*Landform position:* Natural levees adjacent to streams and the Embarras River*Parent material:* Loamy and sandy alluvium*Slope range:* 0 to 2 percent**Taxonomic classification:** Coarse-loamy, mixed, mesic Fluventic Hapludolls**Typical Pedon**

Landes silt loam, 0 to 2 percent slopes, frequently flooded, 560 feet east and 690 feet north of the southwest corner of sec. 29, T. 9 N., R. 9 E.

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

A—8 to 14 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine and medium subangular blocky structure; friable; few very fine and fine roots throughout; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds and in pores; neutral; abrupt smooth boundary.

Bw1—14 to 21 inches; brown (10YR 4/3) fine sandy loam; weak thick platy structure parting to moderate medium subangular blocky; friable; few very fine and fine roots throughout; common distinct dark brown (10YR 3/3) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.

Bw2—21 to 33 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium prismatic structure parting to moderate medium and coarse subangular blocky; friable; few very fine and fine roots throughout; few distinct dark brown (10YR 3/3) organic coatings on faces of peds and in pores; neutral; abrupt smooth boundary.

C—33 to 60 inches; stratified yellowish brown (10YR 5/4) sand and dark yellowish brown (10YR 4/4) loamy sand; strata in bands more than 8 inches thick; single grain; loose; neutral.

Range in Characteristics*Thickness of the mollic epipedon:* 10 to 20 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam, fine sandy loam, or loam

Bw horizon:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture—fine sandy loam, loam, or loamy fine sand

C horizon:

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture—sand, loamy sand, or stratified sand and loamy sand

Lawson Series*Depth class:* Very deep*Drainage class:* Somewhat poorly drained*Permeability:* Moderate*Landscape:* Flood plains

Landform: Low flood plains

Landform position: Old stream channels, depressions, and flats on the valley floor along the Embarras River

Parent material: Silty alluvium

Slope range: 0 to 2 percent

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

Typical Pedon

Lawson silt loam, frequently flooded, 2,200 feet east and 920 feet south of the northwest corner of sec. 23, T. 10 N., R. 9 E.

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; many very fine to medium roots; mildly alkaline; abrupt smooth boundary.

A1—9 to 19 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate medium and coarse subangular blocky structure; friable; common very fine to medium roots; mildly alkaline; clear wavy boundary.

A2—19 to 27 inches; very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; weak coarse subangular blocky structure parting to moderate medium subangular blocky; friable; few very fine to medium roots; mildly alkaline; clear wavy boundary.

C1—27 to 40 inches; very dark gray (10YR 3/1) silt loam; many fine faint dark grayish brown (10YR 4/2) mottles; weak coarse subangular blocky structure parting to moderate medium subangular blocky; friable; few very fine and fine roots; few very thin grayish brown (10YR 5/2) depositional strata; few fine manganese or iron-manganese stains; mildly alkaline; gradual wavy boundary.

C2—40 to 46 inches; very dark grayish brown (10YR 3/2) silt loam; common medium prominent brown (7.5YR 4/4) and common fine faint dark grayish brown (10YR 4/2) mottles; weak thick platy structure parting to moderate medium subangular blocky; friable; few very fine and fine roots; common thin depositional strata of brown (10YR 5/3) sandy loam; mildly alkaline; clear wavy boundary.

C3—46 to 60 inches; very dark gray (10YR 3/1) silt loam; common medium prominent brown (7.5YR 4/4) and common fine faint dark grayish brown (10YR 4/2) mottles; massive; friable; few very fine and fine roots; few thin brown (10YR 5/3) silty depositional strata; mildly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

C horizon:

Hue—10YR or 2.5Y

Value—3 or 4

Chroma—1 to 3

Texture—dominantly silt loam; thin strata of sandy loam or loam below a depth of 40 inches

Marseilles Series

Depth class: Moderately deep

Drainage class: Well drained

Permeability: Moderate in the upper part of the solum and slow in the lower part

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Side slopes along streams and major drainageways

Parent material: Loess or till and the underlying material weathered from shale

Slope range: 15 to 60 percent

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

Typical Pedon

Marseilles loam, in an area of Hickory-Marseilles complex, 30 to 60 percent slopes, 180 feet east and 2,180 feet south of the northwest corner of sec. 35, T. 9 N., R. 7 E.

Oi—1 inch to 0; undecomposed leaf litter.

A—0 to 3 inches; brown (10YR 4/3) loam, pale brown (10YR 6/3) dry; moderate medium and coarse granular structure; very friable; many fine and medium roots throughout; slightly acid; abrupt smooth boundary.

E—3 to 4 inches; yellowish brown (10YR 5/4) loam, very pale brown (10YR 7/4) dry; weak thick platy structure parting to weak fine subangular blocky; friable; many fine and medium roots throughout; medium acid; abrupt smooth boundary.

2Bt1—4 to 13 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; firm; many fine and medium roots throughout; very few faint yellowish brown (10YR

5/4) clay films lining pores; 1 percent soft shale fragments of pebble size; very strongly acid; clear wavy boundary.

2Bt2—13 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; common fine and medium roots throughout; few faint yellowish brown (10YR 5/4) clay films on faces of peds; 3 percent soft shale fragments of pebble size; very strongly acid; clear wavy boundary.

2Bt3—22 to 32 inches; light olive brown (2.5Y 5/4) silt loam; few fine distinct light brownish gray (2.5Y 6/2) and few medium prominent yellowish brown (10YR 5/6) streaks and mottles; moderate medium subangular blocky structure parting to weak thin platy; firm; few fine and medium roots throughout; common distinct brown (10YR 5/3) clay films on faces of peds; 14 percent soft shale fragments of cobble size; medium acid; abrupt smooth boundary.

2Cr—32 to 60 inches; olive (5Y 5/3) shale with a high content of silt; massive; firm; 5 percent hard shale fragments of cobble size; neutral.

Range in Characteristics

Thickness of the loess or till: 3 to 30 inches

A horizon:

Hue—10YR

Value—2 to 4

Chroma—2 or 3

Texture—silt loam, loam, or silty clay loam

E horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam or loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—silt loam or silty clay loam

2Bt horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—2 to 6

Texture—silt loam, silty clay loam, or clay loam

2Cr horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 6

Chroma—0 to 4

Martinsville Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the upper part of the solum and moderately rapid in the lower part

Landscape: Terraces and uplands

Landform: Stream terraces and outwash plains

Landform position: Side slopes

Parent material: Thin mantle of loess and the underlying loamy outwash

Slope range: 5 to 10 percent

Taxonomic classification: Fine-loamy, mixed, mesic Typic Hapludalfs

Typical Pedon

Martinsville silt loam, 5 to 10 percent slopes, eroded, 100 feet south and 900 feet west of the northeast corner of sec. 29, T. 13 N., R. 10 E. (Coles County, Illinois):

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

Bt1—8 to 18 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

2Bt2—18 to 28 inches; dark yellowish brown (10YR 4/6) loam; moderate medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

2Bt3—28 to 34 inches; strong brown (7.5YR 4/6) sandy loam; moderate medium subangular blocky structure; firm; few distinct brown (10YR 4/3) clay films on faces of peds; medium acid; clear smooth boundary.

2Bt4—34 to 43 inches; dark brown (7.5YR 4/4) coarse sandy loam; moderate medium subangular blocky structure; firm; few distinct brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; medium acid; clear smooth boundary.

2C—43 to 60 inches; yellowish brown (10YR 5/4), stratified loam and sandy loam; massive; friable; strongly acid.

Range in Characteristics

Ap horizon:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture—loam or silt loam

Bt and 2Bt horizons:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—silty clay loam in the Bt horizon and clay loam, sandy clay loam, sandy loam, coarse sandy loam, or loam in the 2Bt horizon

2C horizon:

Hue—10YR

Value—5

Chroma—4

Texture—stratified sandy clay loam, sandy loam, or loam

Miami Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the solum and slow in the underlying material

Landscape: Uplands

Landform: Wisconsinan till plains

Landform position: Side slopes along drainageways; narrow ridges

Parent material: Calcareous glacial till or loess and the underlying glacial till

Slope range: 2 to 60 percent

Taxonomic classification: Fine-loamy, mixed, mesic Typic Hapludalfs

Typical Pedon

Miami silt loam, 2 to 5 percent slopes, eroded, 260 feet west and 1,500 feet south of the northeast corner of sec. 26, T. 11 N., R. 8 E.

Ap—0 to 7 inches; brown (10YR 5/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; common very fine roots throughout; common distinct dark grayish brown (10YR 4/2) organic coatings in root channels; 15 percent mixing of yellowish brown (10YR 5/6) subsoil material; slightly acid; abrupt smooth boundary.

Bt1—7 to 13 inches; yellowish brown (10YR 5/6) clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots throughout; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; few

fine iron stains; medium acid; clear smooth boundary.

Bt2—13 to 22 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; firm; few very fine roots throughout; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; few fine iron stains and few fine concretions of iron and manganese oxide; 2 percent glacial pebbles; slightly acid; clear smooth boundary.

Bt3—22 to 28 inches; yellowish brown (10YR 5/4) clay loam; weak thick platy structure parting to weak fine subangular blocky; firm; few very fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds; few fine iron stains and few fine concretions of iron and manganese oxide; 2 percent glacial pebbles; neutral; abrupt smooth boundary.

Bt4—28 to 38 inches; yellowish brown (10YR 5/4) loam; weak thick platy structure; firm; few very fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds; few fine iron stains and few fine concretions of iron and manganese oxide; 2 percent glacial pebbles; strongly effervescent; mildly alkaline; clear smooth boundary.

C—38 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; few very fine roots throughout; few fine iron and manganese stains; 2 percent glacial pebbles; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 20 to 30 inches

Thickness of the solum: 24 to 40 inches

Thickness of the loess: 0 to 15 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam or loam

Bt and 2Bt horizons:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam, clay loam, or loam

C and 2C horizons:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—3 or 4

Texture—loam

Millbrook Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landscape: Uplands

Landform: Outwash plains

Landform position: Low ridges

Parent material: Loess and the underlying loamy outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Udollic Ochraqualfs

Typical Pedon

Millbrook silt loam, 0 to 2 percent slopes, 80 feet south and 1,960 feet east of the northwest corner of sec. 22, T. 11 N., R. 7 E.

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

E—8 to 14 inches; light brownish gray (10YR 6/2) silt loam; common medium faint dark grayish brown (10YR 5/2) mottles; moderate thin platy structure; friable; few fine rounded dark accumulations of iron and manganese oxide; medium acid; abrupt smooth boundary.

Bt—14 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; common fine faint yellowish brown (10YR 5/8) and few fine distinct grayish brown (10YR 5/2) mottles; moderate fine subangular blocky structure; firm; many faint grayish brown (10YR 5/2) clay films and common prominent light gray (10YR 7/1) silt coatings on faces of peds; few fine rounded dark accumulations of iron and manganese oxide; strongly acid; clear smooth boundary.

Btg1—20 to 32 inches; grayish brown (10YR 5/2) silty clay loam; many fine and medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; many distinct gray (10YR 5/1) and dark grayish brown (10YR 4/2) clay films and few prominent light gray (10YR 7/1) silt coatings on faces of peds; many distinct very dark grayish brown (10YR 3/2) clay films in root channels; few fine rounded dark accumulations of iron and manganese oxide; medium acid; clear smooth boundary.

2Btg2—32 to 40 inches; light brownish gray (10YR

6/2) clay loam; many fine and medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular structure; firm; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine rounded dark accumulations of iron and manganese oxide; medium acid; clear smooth boundary.

2BCg—40 to 52 inches; grayish brown (10YR 5/2) clay loam; common medium prominent yellowish brown (10YR 5/6), common fine faint light brownish gray (10YR 6/2), and common fine distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; firm; few fine rounded dark accumulations of iron and manganese oxide; neutral; clear smooth boundary.

2C—52 to 60 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6), stratified clay loam, sandy clay loam, and silt loam; few medium distinct grayish brown (10YR 5/2) mottles; massive; friable; neutral.

Range in Characteristics

Thickness of the loess: 22 to 40 inches

Ap horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2

Texture—silt loam

Bt and Btg horizons:

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam

2Bt, 2Btg, 2BCg, and 2BC horizons:

Hue—10YR

Value—4 to 6

Chroma—1 to 4

Texture—clay loam

2C horizon:

Hue—10YR

Value—4 or 5

Chroma—4 to 6

Texture—stratified sandy loam, loam, sandy clay loam, silt loam, or clay loam

Newberry Series*Depth class:* Very deep*Drainage class:* Poorly drained*Permeability:* Slow*Landscape:* Uplands*Landform:* Illinoian till plains*Landform position:* Shallow, closed depressions and the head of drainageways*Parent material:* Loess and the underlying loamy sediments*Slope range:* 0 to 2 percent**Taxonomic classification:** Fine-silty, mixed, mesic Mollic Ochraqualfs**Typical Pedon**

Newberry silt loam, 850 feet east and 610 feet south of the center of sec. 12, T. 9 N., R. 9 E.

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

E1—9 to 14 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; many fine distinct dark yellowish brown (10YR 4/6) mottles; weak medium platy structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and/or pores; medium acid; abrupt smooth boundary.

E2—14 to 20 inches; light brownish gray (10YR 6/2) silt loam, white (10YR 8/2) dry; common fine distinct yellowish brown (10YR 5/6) mottles; weak very thick platy structure parting to weak medium subangular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and/or pores; medium acid; clear smooth boundary.

Btg1—20 to 27 inches; gray (10YR 6/1) silty clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds, few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and/or pores, and few distinct light gray (10YR 7/1) silt coatings on faces of peds; medium acid; clear wavy boundary.

Btg2—27 to 37 inches; gray (10YR 5/1) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky;

firm; few very fine roots; many distinct dark gray (5Y 4/1) clay films on faces of peds, few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and/or pores, and few distinct light gray (10YR 7/1) silt coatings on faces of peds and in pores; medium acid; clear wavy boundary.

Btg3—37 to 45 inches; gray (10YR 5/1) silty clay loam; many medium prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium angular blocky; firm; many distinct gray (5Y 5/1) clay films on faces of peds, common distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores, and few distinct light gray (10YR 7/1) silt coatings on faces of peds; slightly acid; clear wavy boundary.

Btg4—45 to 55 inches; gray (10YR 6/1) silty clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure; firm; few distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores and few faint gray (10YR 5/1) clay films on faces of peds; few fine soft masses of iron and manganese oxide; neutral; abrupt wavy boundary.

2BCg—55 to 60 inches; gray (10YR 6/1) and dark gray (10YR 4/1) silt loam; many medium prominent strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure; firm; few distinct dark gray (5Y 4/1) clay films in root channels and/or pores; few soft masses of iron and manganese oxide; neutral.

Range in Characteristics*Thickness of the loess:* 40 to 55 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—1 or 2

Texture—silt loam

Btg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam

2Btg and 2BCg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2
Texture—silt loam or loam

Orion Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Landscape: Flood plains
Landform: Low flood plains
Landform position: Shallow depressions and flats away from stream channels and narrow flats along the upper reaches of tributaries
Parent material: Recent silty alluvium over a dark colored buried soil
Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed, nonacid, mesic Aquic Udifluvents

Typical Pedon

Orion silt loam, frequently flooded, 120 feet west and 625 feet north of the southeast corner of sec. 28, T. 11 N., R. 8 E.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; few very fine and fine roots; mildly alkaline; abrupt smooth boundary.

C—8 to 24 inches; dark grayish brown (10YR 4/2) silt loam with grayish brown (10YR 5/2) and brown (10YR 5/3) strata; common fine faint brown (10YR 4/3) mottles; massive breaking to thick plates along depositional strata; friable; few very fine roots; few distinct dark gray (10YR 4/1) organic coatings in root channels and/or pores; few faint manganese or iron-manganese stains; neutral; abrupt smooth boundary.

Ab1—24 to 40 inches; very dark gray (10YR 3/1) loam; moderate fine subangular blocky structure; friable; few very fine roots; few fine soft masses of iron and manganese oxide; 1 percent gravel; neutral; clear smooth boundary.

Ab2—40 to 60 inches; very dark gray (10YR 3/1) loam; weak fine subangular blocky structure; friable; few very fine roots; few fine soft masses of iron and manganese oxide; 2 percent gravel; neutral.

Range in Characteristics

Depth to the Ab horizon: 20 to 35 inches
Content of gravel, by volume, below a depth of 40 inches: 0 to 10 percent

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

C horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam with color strata and/or strata of fine sand or silt

Ab horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 or 2
Texture—silt loam, silty clay loam, or loam

C' horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam with strata of sand

Peotone Series

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Moderately slow
Landscape: Uplands
Landform: Wisconsinan till plains and outwash plains
Landform position: Shallow depressions
Parent material: Silty sediments
Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Cumulic Haplaquolls

Typical Pedon

Peotone silty clay loam, 100 feet east and 100 feet south of the northwest corner of sec. 12, T. 13 N., R. 8 E.

Ap—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak medium angular blocky structure; firm; neutral; abrupt smooth boundary.

A—9 to 15 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine angular blocky structure; firm; neutral; clear smooth boundary.

Bg1—15 to 20 inches; very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) dry; weak medium angular blocky structure; firm; many

distinct black (10YR 2/1) organic coatings on faces of peds; mildly alkaline; clear smooth boundary.

Bg2—20 to 26 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium angular blocky structure; firm; common distinct black (10YR 2/1) organic coatings on faces of peds; mildly alkaline; clear smooth boundary.

Bg3—26 to 35 inches; dark gray (10YR 4/1) silty clay loam; common fine prominent yellowish brown (10YR 5/6) mottles; moderate medium angular blocky structure; firm; common distinct very dark gray (10YR 3/1) clay films on faces of peds; mildly alkaline; gradual smooth boundary.

BCg—35 to 40 inches; gray (10YR 5/1) silty clay loam; many medium prominent yellowish brown (10YR 5/6) mottles; weak medium prismatic structure parting to moderate medium subangular blocky; firm; many coarse rounded very dark gray (10YR 3/1) krotovinas; slightly effervescent; mildly alkaline; clear smooth boundary.

Cg—40 to 60 inches; dark gray (5Y 4/1) silt loam; many medium distinct yellowish brown (10YR 5/8) mottles; massive; firm; many coarse rounded very dark gray (10YR 3/1) krotovinas; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 26 to 30 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1

Texture—silty clay loam

Bg and BCg horizons:

Hue—10YR or 2.5Y

Value—2 to 5

Chroma—1 or 2

Texture—silty clay loam or silty clay

Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silt loam, silty clay loam, or silty clay

Petrolia Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderately slow

Landscape: Flood plains

Landform: Low flood plains

Landform position: Backswamps on the valley floor along the Embarras River

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, nonacid, mesic Typic Fluvaquents

Typical Pedon

Petrolia silty clay loam, frequently flooded, 540 feet east and 18 feet south of the center of sec. 32, T. 9 N., R. 9 E.

Ap1—0 to 3 inches; very dark grayish brown (10YR 3/2) silty clay loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine and medium granular; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

Ap2—3 to 10 inches; dark grayish brown (10YR 4/2) silty clay loam, pale brown (10YR 6/3) dry; common fine faint dark yellowish brown (10YR 4/4) mottles; weak medium subangular blocky structure; friable; common very fine and fine roots; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; abrupt smooth boundary.

Cg1—10 to 20 inches; grayish brown (10YR 5/2) silty clay loam; many medium distinct brown or dark brown (7.5YR 4/4) and strong brown (7.5YR 4/6) mottles; weak medium subangular blocky structure; friable; few very fine and fine roots; very few fine manganese or iron-manganese stains; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few pebbles; neutral; abrupt smooth boundary.

Cg2—20 to 30 inches; gray (10YR 5/1) silty clay loam; common fine distinct brown (7.5YR 4/4) and strong brown (7.5YR 4/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; few very fine and fine roots; few fine manganese or iron-manganese stains; common distinct dark gray (10YR 4/1) clay films on faces of peds; few pebbles; neutral; clear smooth boundary.

Cg3—30 to 40 inches; dark gray (10YR 4/1) silty clay loam; many fine distinct brown (7.5YR 4/4) and strong brown (7.5YR 4/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; few very fine roots; common distinct dark gray (5Y 4/1) clay films on faces of peds; few fine soft masses of iron and manganese oxide; few pebbles; neutral; clear smooth boundary.

Cg4—40 to 56 inches; dark gray (10YR 4/1) silty clay

loam; many fine distinct brown (7.5YR 4/4) and strong brown (7.5YR 4/6) mottles; weak medium prismatic structure parting to weak medium angular blocky; very firm; few very fine roots; common distinct dark gray (5Y 4/1) clay films on faces of peds; few fine and medium soft masses of iron and manganese oxide; few pebbles; neutral; clear smooth boundary.

Cg5—56 to 60 inches; olive gray (5Y 5/2) silty clay loam; many medium distinct brown (7.5YR 4/4) and strong brown (7.5YR 4/6) mottles; weak medium prismatic structure parting to weak medium angular blocky; very firm; many distinct dark gray (5Y 4/1) clay films on faces of peds; common fine and medium soft masses of iron and manganese oxide; neutral.

Range in Characteristics

Ap or A horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—1 or 2

Texture—silty clay loam or silt loam

Cg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—4 to 6

Chroma—0 to 2

Texture—silty clay loam or silt loam

Piasa Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Broad flats and shallow depressions

Parent material: Loess only or loess and the underlying loamy sediments

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Mollic Natraqualfs

Typical Pedon

Piasa silt loam, in an area of the Cisne-Piasa complex, 450 feet east and 66 feet north of the southwest corner of sec. 7, T. 10 N., R. 9 E.

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium and coarse granular structure; friable;

common very fine and fine roots; neutral; abrupt smooth boundary.

Eg—9 to 18 inches; grayish brown (10YR 5/2) silt loam; common medium distinct yellowish brown (10YR 5/6 and 5/4) mottles; weak medium platy structure parting to weak fine subangular blocky; friable; few very fine roots; few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few distinct dark gray (10YR 4/1) organic coatings in root channels and/or pores; few fine manganese or iron-manganese stains; neutral; clear wavy boundary.

Btg1—18 to 27 inches; light olive gray (5Y 6/2) silty clay loam; many medium prominent yellowish brown (10YR 5/6 and 5/4) mottles; weak coarse prismatic structure parting to weak medium and coarse subangular blocky; firm; few very fine roots; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds and in pores; very few olive gray (5Y 4/2) organic coatings in root channels and/or pores; few fine soft masses of iron and manganese oxide; mildly alkaline; gradual wavy boundary.

Btg2—27 to 36 inches; light olive gray (5Y 6/2) silty clay loam; many coarse prominent yellowish brown (10YR 5/6 and 5/4) mottles; weak coarse prismatic structure parting to weak medium and coarse subangular blocky; firm; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds and in pores; very few gray (5Y 5/1) organic coatings in root channels and/or pores; common fine and medium soft masses of iron and manganese oxide; mildly alkaline; clear smooth boundary.

Btg3—36 to 45 inches; mottled light olive gray (5Y 6/2) and yellowish brown (10YR 5/6 and 5/8) silty clay loam; weak coarse prismatic structure parting to weak medium and coarse subangular blocky; firm; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds and in pores; many medium and coarse soft masses of iron and manganese oxide; mildly alkaline; clear smooth boundary.

2Btg4—45 to 53 inches; gray (10YR 6/1) silty clay loam; many medium distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure; friable; few faint gray (10YR 5/1) clay films on faces of peds and in pores; few fine soft masses of iron and manganese oxide; few pebbles; moderately alkaline; abrupt smooth boundary.

2Cg—53 to 60 inches; gray (10YR 6/1) silt loam; many medium distinct yellowish brown (10YR 5/6) mottles; massive; friable; few pebbles; mildly alkaline.

Range in Characteristics

Thickness of the loess: 45 to 60 inches

Ap horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—silt loam

Eg horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—silt loam

Btg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam or silty clay

2Btg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam, silt loam, or loam

2Cg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—5 or 6

Chroma—1 or 2

Texture—loam, silt loam, or silty clay loam

Princeton Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the upper part of the solum and moderately rapid in the lower part

Landscape: Uplands and terraces

Landform: Illinoian till plains and stream terraces

Landform position: Narrow ridges and side slopes

Parent material: Loamy eolian material

Slope range: 2 to 15 percent

Taxonomic classification: Fine-loamy, mixed, mesic Typic Hapludalfs

Typical Pedon

Princeton fine sandy loam, 5 to 10 percent slopes, eroded, 2,260 feet west and 700 feet north of the southeast corner of sec. 5, T. 10 N., R. 10 E.

Ap—0 to 7 inches; brown (10YR 4/3) fine sandy loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to weak fine

granular; very friable; slightly acid; abrupt smooth boundary.

Bt1—7 to 13 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; very friable; few distinct brown (10YR 4/3) clay films on faces of peds; medium acid; clear smooth boundary.

Bt2—13 to 30 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; friable; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; medium acid; gradual smooth boundary.

Bt3—30 to 41 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films on faces of peds; few iron and manganese stains; strongly acid; clear smooth boundary.

Bt4—41 to 50 inches; yellowish brown (10YR 5/4) fine sandy loam; few fine faint pale brown (10YR 6/3) mottles; weak medium and fine subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films on faces of peds; few iron and manganese stains; medium acid; clear smooth boundary.

Bt5—50 to 58 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium and fine subangular blocky structure; very friable; common distinct brown (7.5YR 4/4) clay films on faces of peds; few iron and manganese stains; strongly acid; clear smooth boundary.

E and Bt—58 to 71 inches; yellowish brown (10YR 5/4) sand that is single grain and loose (E); at depths of 61 and 68 inches, few lamellae of dark yellowish brown (10YR 4/4) loamy fine sand (Bt) less than 1 inch thick with a total thickness of less than 1 inch; moderate medium and fine subangular blocky structure; loose; medium acid.

Range in Characteristics

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—fine sandy loam, sandy loam, or loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—loam, sandy clay loam, fine sandy loam, or sandy loam

E and Bt horizon:

Hue—10YR or 7.5YR

Value—4 to 6
 Chroma—4 to 6
 Texture—bands of loamy fine sand, sand, fine sandy loam, or loam

Raccoon Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Slow

Landscape: Uplands, terraces, and flood plains

Landform: Illinoian till plains, low terraces, and high flood plains

Landform position: The head of drainageways, shallow, closed depressions, and alluvial toeslopes on the valley floors along streams

Parent material: Loess and silty local alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Typic Ochraqualfs

Typical Pedon

Raccoon silt loam, 920 feet south and 480 feet east of the center of sec. 22, T. 9 N., R. 9 E.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

Eg1—8 to 12 inches; dark gray (10YR 4/1) silt loam; common fine prominent strong brown (7.5YR 4/4) mottles; weak thin platy structure; friable; few very fine and fine roots; few fine soft masses of iron and manganese oxide; neutral; abrupt smooth boundary.

Eg2—12 to 18 inches; grayish brown (10YR 5/2) silt loam; common fine prominent strong brown (7.5YR 5/6 and 4/6) mottles; weak medium platy structure; friable; few very fine and fine roots; few fine soft masses of iron and manganese oxide; medium acid; abrupt smooth boundary.

Eg3—18 to 26 inches; light brownish gray (10YR 6/2) silt loam; common fine prominent strong brown (7.5YR 5/6 and 4/6) mottles; weak medium platy structure; friable; few very fine and fine roots; few fine soft masses of iron and manganese oxide; strongly acid; abrupt smooth boundary.

Btg1—26 to 33 inches; light brownish gray (10YR 6/2) silty clay loam; common fine distinct yellowish brown (10YR 5/4) and prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak fine subangular blocky;

firm; many distinct light brownish gray (10YR 6/2) silt coatings on faces of peds and common gray (10YR 5/1) clay films on faces of peds and in pores; few fine soft masses of iron and manganese oxide; medium acid; clear smooth boundary.

Btg2—33 to 42 inches; gray (10YR 6/1) silty clay loam; few fine prominent strong brown (7.5YR 5/6 and 4/6) mottles; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; many distinct light brownish gray (10YR 6/2) silt coatings on faces of peds and common gray (10YR 5/1) clay films on faces of peds and in pores; few fine soft masses of iron and manganese oxide; medium acid; clear smooth boundary.

Btg3—42 to 51 inches; gray (10YR 6/1 and 5/1) silty clay loam; many medium prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure; friable; common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds and few grayish brown (10YR 5/2) clay films on faces of peds and in pores; common medium soft masses of iron and manganese oxide; slightly acid; clear smooth boundary.

Btg4—51 to 60 inches; gray (10YR 6/1) silt loam; common medium prominent strong brown (7.5YR 5/6) and dark brown (7.5YR 4/4) mottles; weak coarse prismatic structure; friable; few distinct light brownish gray (10YR 6/2) silt coatings and few grayish brown (10YR 5/2) clay films on faces of peds and in pores; common medium soft masses of iron and manganese oxide; slightly acid.

Range in Characteristics

Depth to the Btg horizon: 24 to 30 inches

Ap or A horizon:

Hue—10YR
 Value—4 or 5
 Chroma—2
 Texture—silt loam

Eg horizon:

Hue—10YR
 Value—4 to 7
 Chroma—1 or 2
 Texture—silt loam

Btg horizon:

Hue—10YR or 2.5Y
 Value—5 to 7
 Chroma—1 or 2
 Texture—silty clay loam or silt loam

Raddle Series*Depth class:* Very deep*Drainage class:* Well drained*Permeability:* Moderate*Landscape:* Flood plains*Landform:* Low flood plains and high flood plains*Landform position:* Broad flats slightly back from the stream channel on low flood plains and on high flood plains along the Embarras River*Parent material:* Silty alluvium*Slope range:* 0 to 2 percent**Taxonomic classification:** Fine-silty, mixed, mesic Typic Hapludolls**Typical Pedon**

Raddle silt loam, 0 to 2 percent slopes, frequently flooded, 2,540 feet north and 1,185 feet east of the center of sec. 12, T. 10 N., R. 9 E.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine and fine roots; slightly acid; abrupt smooth boundary.

A—6 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine and fine roots; slightly acid; abrupt smooth boundary.

BA—12 to 18 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine prismatic structure parting to moderate fine angular blocky; friable; common very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; neutral; abrupt smooth boundary.

Bw1—18 to 26 inches; brown (10YR 4/3) silt loam; moderate fine and medium prismatic structure parting to moderate fine and medium angular blocky; friable; common very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.

Bw2—26 to 42 inches; brown (10YR 4/3) silt loam; moderate fine and medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; few distinct pale brown (10YR 6/3) silt coatings on faces of peds; neutral; clear smooth boundary.

Bt1—42 to 53 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable;

few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few distinct dark brown (10YR 3/3) organic coatings in root channels and/or pores; few distinct pale brown (10YR 6/3) silt coatings on faces of peds; neutral; abrupt smooth boundary.

Bt2—53 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few prominent brown (10YR 4/3) clay films on faces of peds and in pores; few distinct dark brown (10YR 3/3) organic coatings in root channels and/or pores; few distinct pale brown (10YR 6/3) silt coatings on faces of peds; medium acid.

Range in Characteristics*Thickness of the mollic epipedon:* 10 to 24 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 to 3

Texture—silt loam

Bw and Bt horizons:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture—silt loam or loam

Radford Series*Depth class:* Very deep*Drainage class:* Somewhat poorly drained*Permeability:* Moderate*Landscape:* Flood plains*Landform:* Low flood plains*Landform position:* Flats along the stream channels on the valley floors along major streams*Parent material:* Silty alluvium*Slope range:* 0 to 2 percent**Taxonomic classification:** Fine-silty, mixed, mesic Fluvaquent Hapludolls**Typical Pedon**

Radford silt loam, frequently flooded, 1,160 feet north and 560 feet east of the southwest corner of sec. 8, T. 10 N., R. 9 E.

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

A—8 to 15 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; friable; few very fine roots throughout; few thin brown (10YR 5/3) depositional strata in the lower part; neutral; abrupt smooth boundary.

C1—15 to 28 inches; dark grayish brown (10YR 4/2) silt loam; common fine prominent strong brown (7.5YR 4/6) mottles; massive; friable; few very fine roots throughout; few thin depositional strata of brown (10YR 5/3) and yellowish brown (10YR 5/4) sand; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

C2—28 to 32 inches; very dark gray (10YR 3/1) silt loam; common fine distinct gray (10YR 5/1) and dark brown (7.5YR 4/4) mottles; massive; very friable; common thin depositional strata of pale brown (10YR 6/3) loamy fine sand; few very fine roots throughout; neutral; abrupt smooth boundary.

C3—32 to 36 inches; stratified dark gray (10YR 4/1) and very dark gray (10YR 3/1) silt loam; common fine faint gray (10YR 5/1) and prominent dark brown (7.5YR 4/4) mottles; massive; friable; few thin depositional strata of brown (10YR 5/3) and pale brown (10YR 6/3) sand; neutral; abrupt smooth boundary.

Ab—36 to 41 inches; black (10YR 2/1) silt loam; common fine prominent dark reddish brown (5YR 2/2) and reddish brown (5YR 4/4) mottles; weak medium subangular blocky structure; friable; neutral; abrupt smooth boundary.

Btgb1—41 to 51 inches; very dark gray (N 3/0) silty clay loam; few fine prominent dark brown (7.5YR 3/2) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; common faint black (N 2/0) clay films on faces of peds; few fine soft masses of iron and manganese oxide; neutral; clear smooth boundary.

Btgb2—51 to 60 inches; very dark gray (10YR 3/1) silty clay loam; common fine prominent dark brown (7.5YR 3/2) and medium yellowish red (5YR 4/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; common faint black (N 2/0) clay films on faces of peds; few fine soft masses of iron and manganese oxide; neutral.

Range in Characteristics

Depth to the Ab horizon: 20 to 40 inches

Thickness of the mollic epipedon: 10 to 20 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

C horizon:

Hue—10YR

Value—2 to 6

Chroma—1 or 2

Texture—silt loam

Ab horizon:

Hue—10YR or neutral

Value—2 or 3

Chroma—0 or 1

Texture—silt loam or loam

Btgb and Bgb horizons:

Hue—10YR or neutral

Value—3 to 6

Chroma—0 or 1

Texture—silt loam or silty clay loam

Russell Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate

Landscape: Uplands

Landform: Wisconsinan till plains

Landform position: Side slopes and ridgetops

Parent material: Loess and the underlying loamy glacial till

Slope range: 5 to 10 percent

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

Typical Pedon

Russell silt loam, 5 to 10 percent slopes, eroded, 1,400 feet west and 900 feet south of the northeast corner of sec. 10, T. 11 N., R. 9 E. (Coles County, Illinois):

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; slightly acid; abrupt smooth boundary.

BA—7 to 12 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt1—12 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—21 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; medium acid; clear smooth boundary.

2Bt3—31 to 46 inches; brown (7.5YR 4/4) loam; moderate medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; medium acid; clear smooth boundary.

2BC—46 to 60 inches; brown (7.5YR 4/4) sandy clay loam; weak medium subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; 5 percent gravel; slightly acid.

Range in Characteristics

Depth to carbonates: 47 to more than 60 inches

Thickness of the loess: 27 to 35 inches

Ap horizon:

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—silty clay loam

2Bt and 2BC horizons:

Hue—7.5YR

Value—4

Chroma—4

Texture—clay loam, loam, or sandy clay loam

Sabina Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderately slow

Landscape: Uplands

Landform: Wisconsinan till plains

Landform position: Broad interfluves

Parent material: Loess and the underlying loamy glacial till

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Aeric Ochraqualfs

Typical Pedon

Sabina silt loam, 0 to 2 percent slopes, 2,340 feet west and 2,240 feet south of the northeast corner of sec. 36, T. 11 N., R. 8 E.

Ap—0 to 8 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate fine granular structure; very friable; medium acid; abrupt smooth boundary.

E—8 to 12 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; common fine distinct yellowish brown (10YR 5/6) mottles; moderate thin and thick platy structure; very friable; few distinct dark grayish brown (10YR 4/2) organic coatings in root channels; many distinct light gray (10YR 6/1) silt coatings on faces of peds; few fine concretions of iron and manganese oxide; medium acid; abrupt smooth boundary.

Bt1—12 to 19 inches; brown (10YR 5/3) silty clay loam; few fine distinct yellowish brown (10YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine concretions of iron and manganese oxide; medium acid; clear smooth boundary.

Bt2—19 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; common fine faint yellowish brown (10YR 5/6) mottles; weak medium prismatic structure parting to moderate medium subangular blocky; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine concretions of iron and manganese oxide; medium acid; clear smooth boundary.

Bt3—24 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; many medium prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure; firm; many distinct grayish brown (10YR 5/2) and dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) silt coatings along root channels; few fine concretions of iron and manganese oxide; medium acid; clear smooth boundary.

Bt4—29 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; many medium prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure; firm; many distinct grayish brown (10YR

5/2) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) silt coatings along root channels; few fine concretions of iron and manganese oxide; medium acid; gradual smooth boundary.

Bt5—36 to 47 inches; yellowish brown (10YR 5/4) silty clay loam; many medium prominent strong brown (7.5YR 5/6) and few fine distinct light brownish gray (10YR 6/2) mottles; moderate medium prismatic structure parting to moderate coarse subangular blocky; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct black (10YR 2/1) organic coatings in root channels; few fine concretions of iron and manganese oxide; 1 percent glacial pebbles; medium acid; gradual smooth boundary.

2Bt6—47 to 54 inches; yellowish brown (10YR 5/4) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; moderate medium and coarse subangular blocky structure; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organic coatings in root channels; few fine concretions of iron and manganese oxide; 2 percent glacial pebbles; neutral; abrupt smooth boundary.

2BC—54 to 60 inches; yellowish brown (10YR 5/4) clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; weak coarse subangular blocky structure; firm; few distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct dark grayish brown (10YR 4/2) and very dark gray (10YR 3/1) organic coatings in root channels; few fine concretions of iron and manganese oxide; 2 percent glacial pebbles; neutral.

Range in Characteristics

Depth to carbonates: 50 to more than 60 inches

Thickness of the loess: 40 to 50 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2

Texture—silt loam

E horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 4

Texture—silty clay loam or silty clay

2Bt and 2BC horizons:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or clay loam

2C horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—3 or 4

Texture—loam or clay loam

Sarpy Series

Depth class: Very deep

Drainage class: Excessively drained

Permeability: Rapid

Landscape: Flood plains

Landform: Low flood plains

Landform position: Natural levees adjacent to streams and the Embarras River

Parent material: Sandy alluvium

Slope range: 2 to 5 percent

Taxonomic classification: Mixed, mesic Typic Udipsamments

Typical Pedon

Sarpy loamy fine sand, 2 to 5 percent slopes, frequently flooded, 2,060 feet north and 10 feet east of the center of sec. 11, T. 10 N., R. 9 E.

A—0 to 4 inches; stratified very dark grayish brown (10YR 3/2) loamy fine sand and brown (10YR 4/3) sand, grayish brown (10YR 5/2) and light yellowish brown (10YR 6/4) dry; moderate medium and thick platy structure; very friable; few very fine and fine roots; mildly alkaline; abrupt smooth boundary.

C1—4 to 17 inches; stratified brown (10YR 5/3) sand and brown (10YR 4/3) loamy sand; single grain; loose; few fine to coarse roots; moderately alkaline; abrupt smooth boundary.

C2—17 to 28 inches; stratified dark grayish brown (10YR 4/2) loamy sand and brown (10YR 5/3) sand; single grain; loose; few fine to coarse roots; moderately alkaline; abrupt smooth boundary.

C3—28 to 33 inches; brown (10YR 5/3) sand; single grain; loose; few fine to coarse roots; slightly effervescent; moderately alkaline; abrupt smooth boundary.

C4—33 to 38 inches; brown (10YR 4/3) loamy sand; single grain; loose; few fine to coarse roots; moderately alkaline; abrupt smooth boundary.

- C5—38 to 54 inches; brown (10YR 5/3) sand; single grain; loose; moderately alkaline; abrupt smooth boundary.
- C6—54 to 60 inches; dark grayish brown (10YR 4/2) fine sandy loam; massive; friable; moderately alkaline; abrupt smooth boundary.
- C7—60 to 66 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; few distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores; moderately alkaline; abrupt smooth boundary.
- C8—66 to 72 inches; stratified dark grayish brown (10YR 4/2) loamy fine sand and brown (10YR 5/3) fine sand; massive; friable; moderately alkaline.

Range in Characteristics

Ap or A horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—fine sandy loam, loamy fine sand, sand, or loamy sand

C horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—sand, fine sand, loamy sand, or loamy fine sand with strata of fine sandy loam or silt loam below a depth of 40 inches in some pedons

Sexton Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderate in upper part of the solum and slow in the lower part

Landscape: Uplands and terraces

Landform: Till plains, outwash plains, and stream terraces

Landform position: Shallow, closed depressions and the head of drainageways

Parent material: Loess or silty material and the underlying stratified, loamy outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Typic Ochraqualfs

Typical Pedon

Sexton silt loam, 400 feet east and 800 feet south of the northwest corner of sec. 29, T. 11 N., R. 7 E.

- Ap1—0 to 6 inches; brown (10YR 4/3) silt loam, light gray (10YR 7/2) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.
- Ap2—6 to 9 inches; brown (10YR 4/3) silt loam, very pale brown (10YR 7/3) dry; common fine distinct grayish brown (10YR 5/2) and brown (7.5YR 4/2) mottles; weak very thin platy structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.
- E—9 to 16 inches; light brownish gray (10YR 6/2) silt loam; common fine distinct dark yellowish brown (10YR 4/4) and strong brown (7.5YR 5/6) mottles; weak medium platy structure parting to weak medium granular; friable; few very fine and fine roots; many distinct light gray (10YR 7/1) silt coatings on faces of peds; neutral; abrupt smooth boundary.
- EB—16 to 21 inches; light brownish gray (10YR 6/2) silt loam; common medium distinct strong brown (7.5YR 5/6 and 5/8) and brown (10YR 5/3) mottles; weak medium platy structure parting to moderate fine subangular blocky; friable; few very fine and fine roots; many distinct light gray (10YR 7/1) silt coatings and few faint grayish brown (10YR 5/2) organic coatings on faces of peds; medium acid; abrupt smooth boundary.
- Btg1—21 to 28 inches; light brownish gray (10YR 6/2) silty clay loam; common medium distinct brown (7.5YR 4/4) and strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine and fine roots; many distinct light gray (10YR 6/1) clay films and few distinct light gray (10YR 7/1) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- Btg2—28 to 36 inches; light brownish gray (10YR 6/2) silty clay loam; many medium distinct strong brown (7.5YR 5/6) and common medium distinct brown (7.5YR 4/4) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; many distinct light gray (10YR 6/1) clay films on faces of peds; few fine iron and manganese stains; strongly acid; abrupt smooth boundary.
- Btg3—36 to 44 inches; grayish brown (10YR 5/2) silty clay loam; many medium prominent strong brown (7.5YR 5/8) and brown (7.5YR 4/4) mottles; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few fine iron and manganese stains; slightly acid; clear smooth boundary.

2BCg—44 to 52 inches; light brownish gray (10YR 6/2), stratified clay loam and sandy clay loam; many coarse prominent strong brown (7.5YR 5/8) and brown (7.5YR 4/4) mottles; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few distinct gray (10YR 5/1) clay films on faces of peds; few medium iron and manganese stains; neutral; abrupt smooth boundary.

2Cg—52 to 60 inches; gray (10YR 5/1), stratified silt loam and fine sandy loam; common fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/8) mottles; massive; friable; few fine iron and manganese stains; neutral.

Range in Characteristics

Thickness of the loess or silty material: 44 to 55 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

E horizon:

Hue—10YR

Value—5 or 6

Chroma—2 or 3

Texture—silt loam

Btg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam or silty clay

2BCg horizon:

Hue—10YR or 2.5Y

Value—5 or 6

Chroma—1 or 2

Texture—stratified silty clay loam, clay loam, loam, or sandy clay loam

2Cg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 or 2

Texture—stratified fine sandy loam, silt loam, clay loam, or loam

Shiloh Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderately slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Shallow, closed depressions

Parent material: Loess and the underlying loamy sediments

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Cumulic Haplaquolls

Typical Pedon

Shiloh silty clay loam, 2,120 feet east and 760 feet north of the center of sec. 4, T. 9 N., R. 7 E.

Ap—0 to 8 inches; black (5Y 2.5/1) silty clay loam, gray (5Y 5/1) dry; moderate medium and coarse granular structure; friable; few very fine roots throughout; neutral; abrupt smooth boundary.

A—8 to 18 inches; black (N 2/0) silty clay loam, gray (10YR 5/1) dry; few fine prominent dark brown (10YR 3/3) mottles; weak fine prismatic structure parting to weak fine subangular blocky; friable; few very fine roots; slightly acid; clear smooth boundary.

Bg1—18 to 26 inches; black (5Y 2.5/1) silty clay loam, gray (5Y 5/1) dry; common fine distinct dark brown (7.5YR 3/2) and very dark grayish brown (10YR 3/2) mottles; weak fine prismatic structure parting to moderate fine subangular blocky; firm; few very fine roots; few distinct black (N 2/0) pressure faces on peds; neutral; clear smooth boundary.

Bg2—26 to 33 inches; very dark gray (5Y 3/1) silty clay loam, gray (5Y 5/1) dry; many fine distinct dark brown (10YR 3/3) and yellowish brown (10YR 5/4 and 5/6) mottles; weak fine prismatic structure parting to weak fine subangular blocky; firm; few very fine roots; few distinct black (N 2/0) pressure faces on peds; neutral; clear smooth boundary.

Bg3—33 to 43 inches; dark gray (10YR 4/1) silty clay loam; many medium distinct yellowish brown (10YR 5/6 and 5/4) mottles; moderate fine and medium prismatic structure parting to weak fine subangular blocky; firm; few very fine roots; few distinct black (N 2/0) pressure faces on peds and common very dark gray (5Y 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

BCg—43 to 60 inches; gray (10YR 5/1 and 6/1) silty clay loam; many medium prominent yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure; firm; few distinct very dark gray (5Y 3/1) organic coatings on faces of peds; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches

Ap and A horizons:

Hue—10YR, 2.5Y, 5Y, or neutral
 Value—2 or 3
 Chroma—0 to 2
 Texture—silt loam or silty clay loam

Bg and BCg horizons:

Hue—10YR, 2.5Y, or 5Y
 Value—2 to 6
 Chroma—1 or 2
 Texture—silty clay loam or silty clay

Shoals Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landscape: Flood plains and terraces

Landform: Low terraces, high flood plains, and low flood plains

Landform position: Alluvial fans, footslopes, toeslopes, and narrow flats along creeks and their tributaries

Parent material: Loamy alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, nonacid, mesic Aeric Fluvaquents

Typical Pedon

Shoals loam, rarely flooded, 1,340 feet east and 150 feet south of the northwest corner of sec. 5, T. 10 N., R. 10 E.

Ap—0 to 8 inches; brown (10YR 4/3) loam, pale brown (10YR 6/3) dry; moderate medium and coarse granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

C—8 to 20 inches; brown (10YR 4/3) loam; many medium distinct grayish brown (10YR 5/2) and common fine faint dark yellowish brown (10YR 4/4) mottles; weak coarse granular structure; friable; few very fine and fine roots; common distinct dark grayish brown (10YR 4/2) organic coatings in root channels and/or pores; neutral; abrupt smooth boundary.

Cg1—20 to 34 inches; dark grayish brown (2.5Y 4/2) loam; common medium distinct dark yellowish brown (10YR 4/4) and brown (10YR 4/3) mottles; weak coarse granular structure; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) organic coatings in root channels and/or pores; few fine soft masses of iron and manganese oxide; neutral; clear smooth boundary.

Cg2—34 to 56 inches; grayish brown (10YR 5/2) silt loam; common medium distinct dark gray (10YR

4/1), brown (7.5YR 4/4), and yellowish brown (10YR 5/4) mottles; massive; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organic coatings in root channels and/or pores; common fine soft masses of iron and manganese oxide; slightly acid; clear smooth boundary.

Cg3—56 to 60 inches; grayish brown (10YR 5/2) loam; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) mottles; massive; friable; few very fine roots; few distinct dark gray (10YR 4/1) organic coatings in root channels and/or pores; common fine and medium soft masses of iron and manganese oxide; slightly acid.

Range in Characteristics**Ap or A horizon:**

Hue—10YR
 Value—4 or 5
 Chroma—2 or 3
 Texture—silt loam or loam

C and Cg horizons:

Hue—10YR or 2.5Y
 Value—4 to 6
 Chroma—2 to 6
 Texture—silt loam, loam, sandy loam, fine sandy loam, or sandy clay loam

Starks Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landscape: Terraces and uplands

Landform: Stream terraces, outwash plains, and till plains

Landform position: Broad flats, the head of drainageways, narrow ridges, and side slopes

Parent material: Loess or silty material and the underlying stratified, loamy outwash

Slope range: 0 to 5 percent

Taxonomic classification: Fine-silty, mixed, mesic Aeric Ochraqualfs

Typical Pedon

Starks silt loam, 0 to 2 percent slopes, 2,270 feet west and 480 feet north of the southeast corner of sec. 33, T. 11 N., R. 10 E.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, very pale brown (10YR 7/3) dry; weak fine granular structure; friable; few fine roots throughout; neutral; abrupt smooth boundary.

E—8 to 11 inches; pale brown (10YR 6/3) silt loam,

very pale brown (10YR 7/4) dry; common fine distinct brownish yellow (10YR 6/6) mottles; weak thin and thick platy structure; friable; few fine roots throughout; neutral; abrupt smooth boundary.

Bt1—11 to 17 inches; light yellowish brown (10YR 6/4) silty clay loam; common fine faint yellowish brown (10YR 5/4) mottles; moderate fine and medium subangular blocky structure; friable; few fine roots throughout; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; strongly acid; clear wavy boundary.

Bt2—17 to 24 inches; pale brown (10YR 6/3) silty clay loam; common medium prominent yellowish brown (10YR 5/8) mottles; strong medium angular blocky structure; friable; few fine roots throughout; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; common medium iron and manganese stains; strongly acid; clear wavy boundary.

Bt3—24 to 29 inches; light yellowish brown (10YR 6/4) silty clay loam; many medium distinct yellowish brown (10YR 5/8) mottles; moderate medium and coarse subangular blocky structure; firm; few fine roots throughout; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; common coarse iron and manganese stains; strongly acid; clear wavy boundary.

2Btg—29 to 37 inches; grayish brown (10YR 5/2) loam; many medium distinct yellowish brown (10YR 5/8) and common medium distinct dark yellowish brown (10YR 4/6) mottles; weak medium and coarse subangular blocky structure; firm; few fine roots throughout; very few distinct grayish brown (10YR 5/2) clay films on faces of peds; common coarse iron and manganese stains; medium acid; clear wavy boundary.

2BC—37 to 46 inches; brown (10YR 4/3) sandy loam; many medium distinct yellowish brown (10YR 5/6) and common medium faint grayish brown (10YR 5/2) mottles; weak coarse subangular blocky structure; friable; common coarse iron and manganese stains; slightly acid; abrupt smooth boundary.

3C1—46 to 54 inches; stratified light brownish gray (10YR 6/2) silt loam and dark yellowish brown (10YR 4/4) loamy sand; common fine prominent brownish yellow (10YR 6/8) and common coarse prominent brown (7.5YR 4/4) mottles; massive; very friable; neutral; abrupt smooth boundary.

3C2—54 to 60 inches; yellowish brown (10YR 5/6)

loam; common medium distinct grayish brown (10YR 5/2) and many medium prominent brown (7.5YR 4/4) mottles; massive; firm; few medium iron and manganese stains; 1 percent glacial pebbles; neutral.

Range in Characteristics

Depth to carbonates: More than 60 inches

Thickness of the loess: 25 to 40 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

E horizon:

Hue—10YR

Value—5 or 6

Chroma—2 or 3

Texture—silt loam

Bt and Btg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam

2Bt and 2BC horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—sandy loam or loam

2C and 3C horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 6

Texture—stratified silt loam, loam, sandy clay loam, or loamy sand

Sunbury Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate in the upper part of the solum and moderately slow in the lower part

Landscape: Uplands

Landform: Wisconsinan till plains

Landform position: Broad interfluves

Parent material: Loess and the underlying loamy glacial till

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Aquollic Hapludalfs

Typical Pedon

Sunbury silt loam, 0 to 2 percent slopes, 1,940 feet south and 80 feet west of the northeast corner of sec. 6, T. 10 N., R. 9 E.

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure grading to weak thick platy in the lower part; friable; few fine roots throughout; slightly acid; abrupt smooth boundary.

BE—9 to 15 inches; brown (10YR 5/3) silt loam; many fine faint yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; friable; few fine roots throughout; very few faint grayish brown (10YR 5/2) clay films on faces of peds; many distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine iron stains; slightly acid; clear smooth boundary.

Bt1—15 to 24 inches; brown (10YR 5/3) silty clay loam; many fine distinct yellowish brown (10YR 5/6) and common fine distinct brown (7.5YR 4/4) mottles; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; few fine roots throughout; many distinct dark gray (10YR 4/1) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine iron stains; medium acid; clear smooth boundary.

Bt2—24 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; many fine distinct yellowish brown (10YR 5/6), common fine distinct brown (7.5YR 4/4), and few fine distinct grayish brown (10YR 5/2) mottles; moderate medium prismatic structure parting to weak fine and medium subangular blocky; firm; few fine roots throughout; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine iron stains; slightly acid; clear smooth boundary.

Bt3—32 to 41 inches; yellowish brown (10YR 5/4) silty clay loam; many medium distinct brown (7.5YR 4/4) and common fine distinct grayish brown (10YR 5/2) mottles; moderate medium prismatic structure parting to weak fine and medium subangular blocky; firm; few fine roots throughout; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine iron stains; neutral; clear wavy boundary.

2BC—41 to 53 inches; mottled grayish brown (10YR 5/2), yellowish brown (10YR 5/6), and brown (7.5YR 4/4) loam; weak coarse prismatic structure; firm; very few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; 1

percent glacial pebbles; mildly alkaline; abrupt wavy boundary.

2C—53 to 60 inches; yellowish brown (10YR 5/4) loam; common fine distinct yellowish brown (10YR 5/6) and light brownish gray (10YR 6/2) mottles; massive; firm; 2 percent glacial pebbles; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 45 to 60 inches

Thickness of the dark surface layer: 7 to 9 inches

Thickness of the loess: 40 to 50 inches

Ap horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—silt loam

BE horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam or silty clay

2Bt and 2BC horizons:

Hue—10YR, 7.5YR, or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—loam, clay loam, or silt loam

2C horizon:

Hue—10YR

Value—5 or 6

Chroma—1 to 6

Texture—loam, silt loam, or clay loam

Tamalco Series

Depth class: Very deep

Drainage class: Moderately well drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Narrow ridges and side slopes

Parent material: Loess and the underlying loamy sediments

Slope range: 2 to 5 percent

Taxonomic classification: Fine, montmorillonitic, mesic Typic Natrudalfs

Typical Pedon

Tamalco silt loam, 2 to 5 percent slopes, eroded, 1,200 feet west and 1,700 feet south of the northeast corner of sec. 28, T. 9 N., R. 7 E.

Ap—0 to 9 inches; brown (10YR 5/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; very friable; slightly acid; abrupt smooth boundary.

Bt1—9 to 15 inches; brown (7.5YR 4/4) silty clay; moderate fine and medium angular blocky structure; firm; common distinct brown (7.5YR 4/2) clay films on faces of peds; few medium iron stains; medium acid; abrupt wavy boundary.

Bt2—15 to 23 inches; brown (7.5YR 4/4) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; common distinct brown (7.5YR 4/2) clay films on faces of peds; slightly acid; clear wavy boundary.

Bt3—23 to 38 inches; yellowish brown (10YR 5/6) silty clay loam; common fine distinct pale brown (10YR 6/3) and many medium distinct light brownish gray (10YR 6/2) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; few distinct grayish brown (2.5Y 5/2) clay films lining pores; few fine iron stains; moderately alkaline; clear wavy boundary.

Bt4—38 to 47 inches; mottled brown (10YR 4/3) and (7.5YR 4/4) and gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few faint grayish brown (10YR 5/2) clay films lining pores; common medium iron stains; moderately alkaline; abrupt wavy boundary.

2BC—47 to 60 inches; yellowish brown (10YR 5/4) loam; few fine faint brown (10YR 5/3) and few fine distinct light brownish gray (10YR 6/2) mottles; moderate thick platy structure parting to moderate very fine subangular blocky; firm; few distinct dark yellowish brown (10YR 4/4) clay films lining pores; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels; few fine iron stains; moderately alkaline.

Range in Characteristics

Depth to a sodium concentration of 15 percent or more: 12 to 25 inches

Thickness of the loess: 40 to 50 inches

Ap horizon:

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—1 to 6

Texture—silty clay loam or silty clay

2BC horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 6

Texture—loam or clay loam

Thebes Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the solum and rapid in the substratum

Landscape: Uplands and terraces

Landform: Illinoian till plains and stream terraces

Landform position: Narrow interfluves and side slopes

Parent material: Loess and the underlying stratified, loamy and sandy sediments

Slope range: 2 to 5 percent

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

Typical Pedon

Thebes silt loam, 2 to 5 percent slopes, 780 feet west and 1,180 feet north of the center of sec. 29, T. 11 N., R. 7 E.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, yellowish brown (10YR 5/4) dry; weak coarse granular structure; friable; many very fine and fine roots; slightly acid; abrupt smooth boundary.

E—7 to 11 inches; yellowish brown (10YR 5/4) silt loam; moderate thin and medium platy structure; friable; common very fine and fine roots; many distinct dark brown (10YR 3/3) organic coatings on faces of peds and in pores; slightly acid; abrupt smooth boundary.

Bt1—11 to 19 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium angular blocky

structure; friable; few very fine and fine roots; many faint yellowish brown (10YR 5/4) clay films on faces of peds and in pores; slightly acid; clear wavy boundary.

Bt2—19 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium angular blocky structure; friable; few very fine roots; many faint yellowish brown (10YR 5/4) clay films and common faint pale brown (10YR 6/3) silt coatings on faces of peds and in pores; slightly acid; clear wavy boundary.

2Bt3—27 to 33 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few very fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common light yellowish brown (10YR 6/4) skeletalans (sand) on faces of peds and in pores; few fine soft masses of iron and manganese oxide; medium acid; abrupt wavy boundary.

2C1—33 to 58 inches; stratified brown (7.5YR 4/4) sandy loam, yellowish brown (10YR 5/6) loamy sand, and light yellowish brown (10YR 6/4) sand; single grain; very friable; few fine soft masses of iron and manganese oxide; medium acid; abrupt wavy boundary.

3C2—58 to 70 inches; grayish brown (2.5Y 5/2) silt loam; many medium prominent yellowish brown (10YR 5/6) and many medium distinct light brownish gray (10YR 6/2) mottles; massive; firm; common medium and coarse soft masses of iron and manganese oxide; medium acid.

Range in Characteristics

Thickness of the loess: 24 to 40 inches

Ap or A horizon:

Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam

E horizon:

Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam

2Bt horizon:

Hue—10YR or 7.5YR
Value—4 or 5

Chroma—4 to 6

Texture—sandy loam or loam

2C and 3C horizons:

Hue—10YR, 7.5YR, or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—stratified loamy sand, sand, sandy loam, or silt loam

Taxadjunct features: The Thebes soils in this county are taxadjuncts because they average less clay in the control section than is definitive for the series and they do not have a strongly contrasting particle-size class. These differences, however, do not significantly affect the usefulness or behavior of the soils.

Tice Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landscape: Flood plains

Landform: Low flood plains

Landform position: Broad flats away from the stream channel on the valley floor along the Embarras River

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Fluvaquentic Hapludolls

Typical Pedon

Tice silty clay loam, 0 to 2 percent slopes, frequently flooded, 2,060 feet east and 120 feet south of the northwest corner of sec. 29, T. 9 N., R. 9 E.

Ap1—0 to 5 inches; very dark grayish brown (10YR 3/2) silty clay loam, brown (10YR 5/3) dry; moderate thin platy structure parting to moderate fine granular; friable; common very fine roots; slightly acid; abrupt smooth boundary.

Ap2—5 to 10 inches; very dark grayish brown (10YR 3/2) silty clay loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; friable; 5 percent mixing of brown (10YR 4/3) subsoil material in the lower part because of tillage; common very fine roots; slightly acid; abrupt smooth boundary.

Bt1—10 to 14 inches; brown (10YR 4/3) silty clay loam; common medium faint brown (10YR 5/3) mottles; moderate fine and medium angular blocky structure; firm; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings and dark grayish brown (10YR

4/2) clay films on faces of peds; neutral; clear smooth boundary.

Bt2—14 to 24 inches; brown (10YR 4/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; many distinct dark grayish brown (10YR 4/2) clay films and common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt3—24 to 31 inches; brown (10YR 4/3) silty clay loam; moderate medium prismatic structure; few fine prominent strong brown (7.5YR 4/6) mottles; firm; few very fine roots throughout; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; gradual smooth boundary.

Bt4—31 to 40 inches; yellowish brown (10YR 5/4) silty clay loam; few fine prominent strong brown (7.5YR 4/6) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots throughout; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine soft masses of iron and manganese oxide; neutral; clear smooth boundary.

Bt5—40 to 45 inches; yellowish brown (10YR 5/4) silty clay loam; few fine prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots throughout; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few medium soft masses of iron and manganese oxide; neutral; clear smooth boundary.

BC1—45 to 54 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure parting to moderate medium platy; common medium prominent strong brown (7.5YR 5/6) and common fine distinct light brownish gray (10YR 6/2) mottles; friable; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few medium soft masses of iron and manganese oxide; neutral; gradual smooth boundary.

BC2—54 to 60 inches; yellowish brown (10YR 5/4), stratified silt loam and loam; many medium prominent strong brown (7.5YR 5/6), common medium distinct brown (7.5YR 4/4), and few fine faint brown (10YR 5/3) mottles; moderate medium subangular blocky structure parting to moderate medium platy; friable; few distinct grayish brown (10YR 5/2) clay films in root channels and/or

pores; few medium soft masses of iron and manganese oxide; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches

Ap or A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Bt and BC horizons:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 4

Texture—dominantly silty clay loam or silt loam; strata of loam or sandy loam below a depth of 30 inches in some pedons

C horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 3

Texture—stratified silty clay loam, loam, or sandy loam

Titus Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Slow

Landscape: Flood plains

Landform: Low flood plains

Landform position: Backswamps on the valley floors along major streams and the Embarras River

Parent material: Clayey alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Fluvaquentic Haplaquolls

Typical Pedon

Titus silty clay loam, frequently flooded, 400 feet east and 125 feet north of the center of sec. 30, T. 9 N., R. 9 E.

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium and coarse granular structure; friable; few very fine and fine roots throughout; neutral (pH 7.2); abrupt smooth boundary.

A—7 to 13 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry;

weak fine and medium subangular blocky structure; friable; few very fine roots throughout; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bg1—13 to 22 inches; dark gray (10YR 4/1) silty clay loam; common fine distinct brown (7.5YR 4/4) and dark brown (7.5YR 3/4) mottles; weak medium and coarse prismatic structure; friable; very few distinct very dark gray (10YR 3/1) organic coatings on faces of peds and dark gray (10YR 4/1) pressure faces on peds; neutral; clear smooth boundary.

Bg2—22 to 32 inches; dark gray (10YR 4/1) silty clay loam; few fine faint dark brown (7.5YR 3/2) and brown (7.5YR 4/4) mottles; weak medium and coarse prismatic structure; firm; common distinct dark gray (10YR 4/1) pressure faces on peds; neutral; clear smooth boundary.

Bg3—32 to 60 inches; gray (10YR 5/1) silty clay loam; few fine distinct dark brown (7.5YR 3/2) mottles; weak medium and coarse prismatic structure; very firm; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds and dark gray (N 4/0) pressure faces on peds; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches

Ap and A horizons:

Hue—10YR

Value—2 or 3

Chroma—1 or 2

Texture—silty clay loam

Bg horizon:

Hue—10YR, 2.5Y, or neutral

Value—4 or 6

Chroma—0 to 2

Texture—silty clay loam or silty clay

Toronto Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate in the upper part of the solum and moderately slow in the lower part

Landscape: Uplands

Landform: Wisconsinan till plains

Landform position: Broad ridges

Parent material: Loess and the underlying loamy glacial till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Udollic Ochraqualfs

Typical Pedon

Toronto silt loam, 0 to 2 percent slopes, 200 feet east and 960 feet north of the southwest corner of sec. 17, T. 11 N., R. 9 E.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; slightly acid; abrupt smooth boundary.

Bt—8 to 14 inches; yellowish brown (10YR 5/4) silty clay loam; common fine distinct grayish brown (10YR 5/2) and yellowish brown (10YR 5/8) mottles; moderate fine subangular blocky structure; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; very few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels; strongly acid; clear smooth boundary.

Btg1—14 to 22 inches; light brownish gray (10YR 6/2) silty clay loam; many fine prominent yellowish brown (10YR 5/8) mottles; moderate fine angular blocky structure; firm; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine rounded dark accumulations of iron and manganese oxide; medium acid; clear smooth boundary.

Btg2—22 to 32 inches; light brownish gray (10YR 6/2) silty clay loam; many fine prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; common distinct grayish brown (10YR 5/2) clay films on faces of peds and few distinct dark gray (10YR 4/1) clay films in root channels; few fine rounded dark accumulations of iron and manganese oxide; slightly acid; clear smooth boundary.

Btg3—32 to 37 inches; light brownish gray (10YR 6/2) silty clay loam; many fine prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; few distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct dark gray (10YR 4/1) clay films in root channels; few fine rounded dark accumulations of iron and manganese oxide; neutral; clear smooth boundary.

2BCg—37 to 44 inches; light brownish gray (10YR 6/2) loam; many fine prominent yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; firm; few fine rounded dark accumulations of iron and manganese oxide; neutral; clear smooth boundary.

2Cg—44 to 60 inches; light brownish gray (10YR 6/2) loam; many fine prominent yellowish brown (10YR 5/8) mottles; massive; firm; few fine rounded dark accumulations of iron and manganese oxide; slightly effervescent; mildly alkaline.

Range in Characteristics

Thickness of the loess: 25 to 37 inches

Ap horizon:

Hue—10YR

Value—3

Chroma—1 or 2

Texture—silt loam

Bt and Btg horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam

2BCg and 2Cg horizons:

Hue—10YR

Value—6

Chroma—2

Texture—loam

Ursa Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Side slopes along drainageways

Parent material: Loess or pedisediments and the underlying paleosol

Slope range: 5 to 15 percent

Taxonomic classification: Fine, montmorillonitic, mesic Typic Hapludalfs

Typical Pedon

Ursa silt loam, in an area of Ursa-Atlas complex, 5 to 10 percent slopes, eroded, 480 feet east and 1,560 feet south of the northwest corner of sec. 16, T. 10 N., R. 8 E.

Ap—0 to 5 inches; brown (10YR 5/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; 5 percent mixing of yellowish brown (10YR 5/4) subsoil material in the lower part; neutral; abrupt smooth boundary.

Bt1—5 to 9 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few faint brown (10YR 4/3) clay

films on faces of peds; 10 percent mixing of brown (10YR 5/3) surface soil material in the upper part; strongly acid; abrupt smooth boundary.

Bt2—9 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium angular blocky structure; friable; many faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; few fine iron stains; 1 percent glacial pebbles; strongly acid; clear smooth boundary.

2Bt3—16 to 20 inches; dark grayish brown (2.5Y 4/2) silty clay loam; common fine distinct brown (10YR 4/3) and common fine prominent brown (7.5YR 4/4) mottles; moderate medium angular blocky structure; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct light gray (10YR 7/2) silt coatings on faces of peds; few fine iron and manganese stains; 1 percent glacial pebbles; strongly acid; abrupt smooth boundary.

2Bt4—20 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay; common fine prominent brown (7.5YR 4/4) mottles; weak medium prismatic structure parting to weak medium angular blocky; very firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; few fine iron and manganese stains; 1 percent glacial pebbles; medium acid; abrupt smooth boundary.

2BC—35 to 53 inches; dark grayish brown (2.5Y 4/2) clay loam; common medium prominent brown (7.5YR 4/4) and many medium prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure; very firm; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) silt coatings on faces of peds; common medium concretions of iron and manganese oxide; 1 percent glacial pebbles; neutral; abrupt smooth boundary.

2C—53 to 60 inches; strong brown (7.5YR 5/6) clay loam; common medium prominent gray (10YR 5/1) and common medium distinct brown (7.5YR 4/4) mottles; massive; very firm; common coarse concretions of iron and manganese oxide; 3 percent glacial pebbles; neutral.

Range in Characteristics

Thickness of the loess or pedisediment: 5 to 20 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam

Bt horizon:

Hue—10YR
 Value—4 or 5
 Chroma—4 to 6
 Texture—silty clay loam

2Bt horizon:

Hue—10YR, 7.5YR, or 2.5Y
 Value—4 or 5
 Chroma—1 to 6
 Texture—clay loam, silty clay, silty clay loam, or loam

2BC horizon:

Hue—10YR, 7.5YR, or 2.5Y
 Value—4 to 6
 Chroma—1 to 6
 Texture—clay loam or loam

2C horizon:

Hue—10YR, 7.5YR, 2.5Y, or 5Y
 Value—4 to 6
 Chroma—1 to 6
 Texture—clay loam or loam

Virden Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Moderately slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Low areas and shallow, closed depressions

Parent material: Loess and the underlying loamy sediments

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Typic Argiaquolls

Typical Pedon

Virden silt loam, 1,500 feet south and 75 feet east of the northwest corner of sec. 18, T. 10 N., R. 9 E.

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; weak medium platy structure parting to moderate medium granular; friable; neutral; abrupt smooth boundary.

A—6 to 11 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; dark grayish brown (10YR 4/2) fragments in the lower part; few fine distinct dark yellowish brown (10YR 4/4) mottles; weak medium platy structure parting to moderate

medium granular; friable; neutral; abrupt smooth boundary.

Btg1—11 to 16 inches; dark grayish brown (10YR 4/2) silty clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; many distinct dark gray (10YR 4/1) clay films, common distinct very dark gray (10YR 3/1) organic coatings, and few distinct grayish brown (10YR 5/2) silt coatings on faces of ped; medium acid; abrupt smooth boundary.

Btg2—16 to 26 inches; dark grayish brown (10YR 4/2) silty clay; many medium prominent strong brown (7.5YR 5/6) mottles; moderate coarse prismatic structure; very firm; many distinct dark gray (10YR 4/1) clay films and common distinct very dark gray (10YR 3/1) organic coatings on faces of ped; slightly acid; clear smooth boundary.

Btg3—26 to 38 inches; dark grayish brown (10YR 4/2) silty clay; many medium prominent strong brown (7.5YR 5/6) mottles; moderate coarse prismatic structure; very firm; many distinct dark gray (10YR 4/1) clay films and few distinct very dark gray (10YR 3/1) organic coatings on faces of ped; slightly acid; abrupt smooth boundary.

Btg4—38 to 57 inches; light brownish gray (10YR 6/2) silty clay loam; many medium prominent strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure; firm; common distinct dark gray (10YR 4/1) clay films on faces of ped; a tongue of grayish brown (2.5Y 5/2) silt loam 1 inch thick and a tongue of very dark gray (10YR 3/1) silty clay loam 1 inch thick; neutral; clear smooth boundary.

Btg5—57 to 60 inches; light brownish gray (10YR 6/2) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; weak coarse subangular blocky structure; friable; common distinct dark gray (10YR 4/1) clay films on faces of ped; black (10YR 2/1) and very dark gray (10YR 3/1) bands 1/2 inch thick; tongues of silty clay loam; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches

Ap and A horizons:

Hue—10YR
 Value—2 or 3
 Chroma—1 or 2
 Texture—silt loam or silty clay loam

Btg horizon:

Hue—10YR, 2.5Y, 5Y, or neutral

Value—2 to 6
 Chroma—0 to 2
 Texture—silty clay loam or silty clay

BCg horizon (if it occurs):

Hue—10YR, 2.5Y, or neutral
 Value—5 or 6
 Chroma—0 to 2
 Texture—silt loam or silty clay loam

Wakeland Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Permeability: Moderate

Landscape: Flood plains

Landform: Low flood plains

Landform position: Shallow depressions and flats away from the stream channels on the valley floors along major streams and the Embarras River

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed, nonacid, mesic Aeric Fluvaquents

Typical Pedon

Wakeland silt loam, frequently flooded, 390 feet east and 1,600 feet south of the northwest corner of sec. 18, T. 10 N., R. 10 E.

Ap—0 to 6 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; weak medium and coarse granular structure; friable; few very fine and fine roots; medium acid; abrupt smooth boundary.

Cg1—6 to 14 inches; dark grayish brown (10YR 4/2) silt loam; common fine faint grayish brown (10YR 5/2) and brown (10YR 5/3) mottles; weak medium and thick platy structure parting to weak fine and medium granular; friable; few very fine roots; few fine soft masses of iron and manganese oxide; slightly acid; abrupt smooth boundary.

Cg2—14 to 30 inches; mottled light brownish gray (10YR 6/2), brown (10YR 5/3), and yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few very fine roots; few fine soft masses of iron and manganese oxide; medium acid; clear smooth boundary.

Cg3—30 to 42 inches; mottled grayish brown (10YR 5/2), brown (10YR 4/3), and yellowish brown (10YR 5/4) silt loam; weak medium and coarse prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; many distinct gray (10YR 6/1) silt coatings on

faces of peds and in pores; few fine soft masses of iron and manganese oxide; medium acid; clear smooth boundary.

Ab—42 to 51 inches; dark gray (10YR 4/1) silt loam; common fine distinct dark yellowish brown (10YR 4/4) and brown (7.5YR 4/4) mottles; weak medium subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine soft masses of iron and manganese oxide; neutral; abrupt smooth boundary.

C'g—51 to 60 inches; gray (10YR 5/1) silt loam; many medium prominent yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6) mottles; massive; friable; common medium soft masses of iron and manganese oxide; neutral.

Range in Characteristics

Ap horizon:

Hue—10YR
 Value—4 or 5
 Chroma—2 or 3
 Texture—silt loam

C and Cg horizons:

Hue—10YR
 Value—4 to 6
 Chroma—1 to 6
 Texture—dominantly silt loam; strata of loam to fine sand below a depth of 40 inches in some pedons

Wirt Series

Depth class: Very deep

Drainage class: Well drained

Permeability: Moderate in the solum and moderately rapid in the substratum

Landscape: Flood plains

Landform: Low flood plains

Landform position: Natural levees and flats adjacent to streams and the Embarras River

Parent material: Loamy alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-loamy, mixed, nonacid, mesic Typic Udifluvents

Typical Pedon

Wirt silt loam, frequently flooded, 2,000 feet east and 270 feet south of the northwest corner of sec. 11, T. 9 N., R. 10 E.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; weak medium

subangular blocky structure parting to moderate fine granular; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

A—4 to 15 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium and thick platy structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear wavy boundary.

Bw1—15 to 31 inches; yellowish brown (10YR 5/4) fine sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds; few distinct yellowish brown (10YR 5/6) sand coatings in root channels and/or pores; neutral; abrupt wavy boundary.

Bw2—31 to 36 inches; yellowish brown (10YR 5/4) loam; moderate medium and coarse subangular blocky structure; friable; many distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds; yellowish brown (10YR 5/6) sand coatings in root channels and/or pores; neutral; abrupt wavy boundary.

Bw3—36 to 43 inches; yellowish brown (10YR 5/4) fine sandy loam; moderate medium subangular blocky structure; friable; many distinct dark grayish brown (10YR 4/2) organic coatings on faces of peds; common distinct yellowish brown (10YR 5/6) sand coatings in root channels and/or pores; neutral; clear wavy boundary.

C1—43 to 55 inches; mottled yellowish brown (10YR 5/4), grayish brown (10YR 5/2), and brown (7.5YR 4/4) fine sandy loam; massive; friable; neutral; clear wavy boundary.

C2—55 to 60 inches; gray (10YR 5/1) loamy fine sand; many medium distinct brown (7.5YR 4/4) mottles; massive; very friable; few fine manganese or iron-manganese stains; neutral.

Range in Characteristics

Ap and A horizons:

Hue—10YR

Value—4 or 5

Chroma—2 to 4

Texture—silt loam or fine sandy loam

Bw horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—loam, fine sandy loam, or sandy loam

C horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—1 to 4

Texture—fine sandy loam, sandy loam, loamy fine sand, or sand

Content of gravel, by volume—0 to 10 percent

Wynoose Series

Depth class: Very deep

Drainage class: Poorly drained

Permeability: Very slow

Landscape: Uplands

Landform: Illinoian till plains

Landform position: Broad flats

Parent material: Loess and the underlying loamy sediments

Slope range: 0 to 2 percent

Taxonomic classification: Fine, montmorillonitic, mesic Typic Albaqualfs

Typical Pedon

Wynoose silt loam, 1,760 feet south and 105 feet east of the northwest corner of sec. 5, T. 9 N., R. 8 E.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure parting to moderate thin platy in the lower part; very friable; common fine roots throughout; neutral; abrupt smooth boundary.

Eg—8 to 16 inches; light gray (10YR 7/2) silt loam, white (10YR 8/1) dry; common fine faint pale brown (10YR 6/3) and common fine distinct yellowish brown (10YR 5/6) mottles; moderate thick platy structure; firm; common fine roots throughout; many distinct white (10YR 8/1) silt coatings on faces of peds; medium acid; abrupt smooth boundary.

Btg1—16 to 23 inches; light brownish gray (10YR 6/2) silty clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; moderate medium angular blocky structure; firm; few fine roots throughout; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many distinct white (10YR 8/1) silt coatings on faces of peds; few fine iron and manganese stains; extremely acid; abrupt smooth boundary.

Btg2—23 to 34 inches; light brownish gray (10YR 6/2) silty clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to weak fine angular blocky; very firm; few fine roots throughout; many

distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine iron and manganese stains; extremely acid; gradual smooth boundary.

Btg3—34 to 42 inches; light brownish gray (10YR 6/2) silty clay loam; common fine prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic structure parting to moderate fine and medium angular blocky; very firm; few fine roots throughout; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine iron and manganese stains; very strongly acid; clear smooth boundary.

2Btg4—42 to 52 inches; grayish brown (10YR 5/2) silty clay loam; few fine prominent strong brown (7.5YR 5/6) and brown (7.5YR 4/4) mottles; weak coarse prismatic structure; firm; few fine roots throughout; common faint gray (10YR 5/1) clay films on faces of peds; common medium iron and manganese stains; 2 percent glacial pebbles; very strongly acid; clear smooth boundary.

2BCg—52 to 60 inches; light gray (10YR 6/1) clay loam; few fine distinct yellowish brown (10YR 5/4) and few fine prominent strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure; firm; few faint gray (10YR 5/1) and dark gray (10YR 4/1) clay films lining pores; common fine iron and manganese stains; 2 percent glacial pebbles; medium acid.

Range in Characteristics

Thickness of the loess: 35 to 55 inches

Ap horizon:

Hue—10YR

Value—4 or 5

Chroma—1 to 3

Texture—silt loam

Eg horizon:

Hue—10YR or 2.5Y

Value—5 to 7

Chroma—1 or 2

Texture—silt loam

Btg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam or silty clay

2Btg and 2BCg horizons:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam, clay loam, loam, or silt loam

Xenia Series

Depth class: Very deep

Drainage class: Moderately well drained

Permeability: Moderate in the upper part of the solum and moderately slow in the lower part

Landscape: Uplands

Landform: Wisconsinan till plains

Landform position: Narrow ridges and side slopes along drainageways

Parent material: Loess and the underlying calcareous glacial till

Slope range: 2 to 5 percent

Taxonomic classification: Fine-silty, mixed, mesic Aquic Hapludalfs

Typical Pedon

Xenia silt loam, 2 to 5 percent slopes, 1,600 feet south and 80 feet west of the northeast corner of sec. 26, T. 11 N., R. 8 E.

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, very pale brown (10YR 7/3) dry; moderate fine and medium granular structure; friable; common very fine and fine roots throughout; 10 percent mixing of yellowish brown (10YR 5/4) subsoil material; neutral; abrupt smooth boundary.

BE—7 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak thick platy structure parting to moderate very fine and fine subangular blocky; friable; common very fine and fine roots throughout; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; abrupt smooth boundary.

Bt1—12 to 16 inches; yellowish brown (10YR 5/4) silty clay loam; few fine faint yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; few very fine and fine roots throughout; few faint brown (10YR 5/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—16 to 32 inches; yellowish brown (10YR 5/6) silty clay loam; common medium distinct grayish brown (10YR 5/2) and many medium prominent brown (7.5YR 4/4) mottles; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; very few very fine and fine roots throughout; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds; few fine iron stains; slightly acid; clear smooth boundary.

2Bt3—32 to 45 inches; yellowish brown (10YR 5/4) clay loam; common medium distinct light brownish gray (10YR 6/2), few medium distinct brown (7.5YR 4/4), and many medium prominent strong

brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to weak medium subangular blocky; firm; very few distinct dark grayish brown (2.5Y 4/2) clay films lining pores; common fine and medium iron stains; 2 percent glacial pebbles; slightly effervescent; mildly alkaline; clear smooth boundary.

2C—45 to 60 inches; brown (10YR 5/3) loam; massive; firm; 2 percent glacial pebbles; strongly effervescent; mildly alkaline.

Range in Characteristics

Thickness of the loess: 25 to 40 inches

Ap horizon:

Hue—10YR

Value—4

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—4 to 6

Texture—silty clay loam

2Bt and 2BC horizons:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—loam or clay loam

2C horizon:

Hue—10YR

Value—5

Chroma—3 or 4

Texture—loam

Formation of the Soils

The factors that have determined the characteristics of the soils in Cumberland County are parent material, climate, vegetation and animal life, relief, and time.

Parent Material

Parent material is the unconsolidated geologic material in which a soil forms. It affects the mineralogical and chemical nature of the soil and, to a large extent, determines the rate of soil formation. The soils in Cumberland County formed in loess, glacial drift, residuum, or alluvium.

The loess consists of Peorian loess and Roxana silt. The thickness of the loess ranges from 4 to 6 feet on the nearly level uplands in the northern part of the county and from 3 to 5 feet on the nearly level uplands in the central and southern parts. The mantle of loess generally is thinner in the more sloping areas. The level Ebbert and Virden soils formed entirely in loess. The moderately sloping and strongly sloping Atlas and Ursa soils formed in loess and in glacial material.

Illinoian glacial till underlies the loess in most of the county. A small area in the north-central part of the county is underlain by Wisconsinan glacial till. On many side slopes along the major streams, erosion has removed the loess and glacial till is at or near the surface. Hickory and Miami soils formed in glacial till.

Bedrock of the Pennsylvanian Period underlies the loess and glacial drift (Willman and others, 1975) This bedrock consists mainly of shale, sandstone, siltstone, and limestone. In a few areas along the major streams, shale and fine grained sandstone are at or near the surface (fig. 20). Gosport and Marseilles soils formed in material weathered from bedrock.

Soils on flood plains formed in recent alluvium that eroded from the soils on uplands. Most of the flood plains still receive sediments. Holton, Petrolia, and Raddle are examples of soils that formed in alluvium on flood plains.

Climate

Cumberland County has a temperate, humid, continental climate. Because it is essentially uniform throughout the county, the climate has not caused any

obvious differences among the soils within the county. It has differentiated those soils, however, from the soils in other regions.

Climate is a very important factor of soil formation because it affects weathering, vegetation, and erosion. Temperature and precipitation affect the physical and chemical nature of the soil. The weathering of minerals in the soil increases as temperature increases. As it moves through the soil, water dissolves and transports soluble salts downward. It also transports clay-sized particles from the surface soil to the subsoil. This translocation of clay characterizes the Alfisols in Cumberland County. The temperature and precipitation in the county favor both prairie and forest vegetation. Precipitation can affect soil formation through the effect it has on erosion. As the rate of erosion approaches the rate of soil formation, the soil generally exhibits less profile development.

Vegetation and Animal Life

Soils are affected by the vegetation under which they formed. The native vegetation in Cumberland County was mainly deciduous hardwood trees and prairie grasses. Bluford, Hickory, and other soils that formed under forest vegetation have a thin, relatively light colored surface layer. As the leaf litter decomposed, small amounts of organic matter were added to the surface layer. Shiloh, Virden, and other soils that formed under prairie grasses have a thick, dark surface soil. The many fine and fibrous grass roots in the upper part of these soils added large amounts of organic matter to the soils.

Other living organisms also have contributed to soil formation. These include the micro-organisms, bacteria, fungi, earthworms, insects, and burrowing animals that live on or in the soil. These organisms affect the decomposition of organic material and mix and churn the soil.

Human activities also affect soil formation. Farming reduces the content of organic matter in the surface soil and increases the rate of runoff and the hazard of erosion. Building dikes and levees reduces the frequency of flooding. In some soils installing subsurface drains helps to lower the water table.



Figure 20.—An exposure of shale in an area along Muddy Creek.

Relief

Relief tends to modify the effects of the other soil-forming factors. It affects the amount of water that enters the soil through its effect on runoff and the infiltration rate.

Differences in natural drainage generally are closely associated with slope or relief. Most of the soils that formed in the more sloping uplands are well drained and have brown and yellowish brown subsoil. Princeton and Thebes soils are examples. Soils that formed in low areas, such as depressions, and on broad, nearly level plains are poorly drained and have grayish subsoil. Racoon and Wynoose soils are examples. Some soils formed in intermediate landscape positions, such as low ridges and gently sloping side slopes. These soils are somewhat poorly drained and

have a grayish and brownish, mottled subsoil. Blair and Starks soils are examples.

Time

Time affects the degree of profile development in the soil. The influence of time, however, can be modified by the deposition of new material and by topography. Tice, Wirt, and other bottom-land soils that are subject to flooding receive new deposits each time they are flooded. As a result, they are genetically younger than other soils in the county. Nearly level soils commonly are genetically and morphologically older than the more sloping soils because the slope affects the amount of water that penetrates the surface. The degree of profile development tends to decrease as the slope increases.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

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

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

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.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium

carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Catsteps.** Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.
- Channery soil material.** Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.
- 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 film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Claypan.** A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.
- Coarse textured soil.** Sand or loamy sand.
- Colluvium.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern

or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

- Concretions.** Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.
- Congeliturbate.** Soil material disturbed by frost action.
- Conglomerate.** A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.
- Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.
- Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”
- Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.
- Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.
- Coprogenous earth (sedimentary peat).** Fecal material deposited in water by aquatic organisms.
- Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
- Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

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 rock (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.

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.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

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.

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.

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.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

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*.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

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.

Footslope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above.

When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum,

an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

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

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a

color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs 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:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

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.

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.

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:

Extremely acid	less than 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly 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

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth’s surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material under the soil and grading to hard bedrock below.

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.

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.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

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.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces

produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

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.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to $\text{Ca}^{++} + \text{Mg}^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

- Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.
- Stone line.** A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.
- Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.
- Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.
- Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.
- Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).
- Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from soil blowing 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.
- Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”
- Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.
- Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.
- Terminal moraine.** A belt of thick glacial drift that generally marks the termination of important glacial advances.
- Terrace.** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- Terrace (geologic).** An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”
- Thin layer (in tables).** Otherwise suitable soil material that is too thin for the specified use.
- Till plain.** An extensive area of nearly level to undulating soils underlain by glacial till.
- Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- Toeslope.** The outermost inclined surface at the base of a hill; part of a footslope.
- Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Upland.** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- Valley fill.** In glaciated regions, material deposited in

stream valleys by glacial meltwater. In nonglaciaded regions, alluvium deposited by heavily loaded streams.

Variation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These

changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an 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 Charleston, Illinois)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	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--			Less than--	More than--		
°F	°F	°F	°F	°F	Units	In	In	In		In	
January-----	34.7	18.2	26.4	62	-14	3	2.02	0.74	3.08	4	7.5
February-----	39.8	22.2	31.0	66	-7	5	2.13	1.01	3.10	4	5.5
March-----	52.2	33.1	42.6	79	7	56	3.38	1.85	4.73	7	3.7
April-----	64.9	43.6	54.2	85	23	193	3.72	1.83	5.37	7	.2
May-----	74.8	53.4	64.1	90	33	435	4.14	2.31	5.77	7	.0
June-----	83.4	62.2	72.8	95	45	684	3.60	2.01	5.01	6	.0
July-----	86.5	66.1	76.3	98	50	815	4.57	2.46	6.43	6	.0
August-----	84.3	64.0	74.1	97	48	748	3.28	1.46	4.84	5	.0
September---	78.6	57.0	67.8	93	37	534	3.31	1.22	5.05	4	.0
October-----	66.9	45.8	56.3	86	25	236	3.01	1.37	4.41	5	.0
November----	52.7	35.5	44.1	75	13	56	3.46	1.65	5.02	5	1.4
December----	39.2	23.9	31.5	65	-7	8	3.41	1.43	5.09	6	3.7
Yearly:											
Average---	63.2	43.7	53.5	---	---	---	---	---	---	---	---
Extreme---	103	-22	---	99	-15	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,771	40.04	33.99	45.57	66	22.0

* 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 Charleston, Illinois)

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. 9	Apr. 15	May 2
2 years in 10 later than--	Apr. 4	Apr. 11	Apr. 26
5 years in 10 later than--	March 24	Apr. 3	Apr. 16
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 28	Oct. 14	Oct. 3
2 years in 10 earlier than--	Nov. 3	Oct. 20	Oct. 9
5 years in 10 earlier than--	Nov. 13	Oct. 30	Oct. 19

Table 3.--Growing Season
(Recorded in the period 1961-90 at Charleston, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	211	187	163
8 years in 10	219	194	170
5 years in 10	233	209	185
2 years in 10	247	223	199
1 year in 10	255	231	206

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
2	Cisne silt loam-----	17,821	8.0
3A	Hoyleton silt loam, 0 to 2 percent slopes-----	3,870	1.7
3B	Hoyleton silt loam, 2 to 5 percent slopes-----	104	*
5B2	Blair silt loam, 2 to 5 percent slopes, eroded-----	639	0.3
5B3	Blair silt loam, 2 to 5 percent slopes, severely eroded-----	215	*
5C2	Blair silt loam, 5 to 10 percent slopes, eroded-----	1,075	0.5
5C3	Blair silt loam, 5 to 10 percent slopes, severely eroded-----	823	0.4
6B2	Fishhook silt loam, 2 to 5 percent slopes, eroded-----	2,382	1.1
7B2	Atlas silt loam, 2 to 5 percent slopes, eroded-----	492	0.2
7B3	Atlas silty clay loam, 2 to 5 percent slopes, severely eroded-----	203	*
7C2	Atlas silt loam, 5 to 10 percent slopes, eroded-----	79	*
7D2	Atlas silt loam, 10 to 15 percent slopes, eroded-----	5	*
7D3	Atlas silty clay loam, 10 to 15 percent slopes, severely eroded-----	1	*
8D2	Hickory loam, 10 to 15 percent slopes, eroded-----	2,795	1.3
8D3	Hickory clay loam, 10 to 15 percent slopes, severely eroded-----	1,186	0.5
8F	Hickory loam, 15 to 30 percent slopes-----	8,320	3.8
8G	Hickory loam, 30 to 60 percent slopes-----	3,891	1.8
12	Wynoose silt loam-----	40,518	18.3
13A	Bluford silt loam, 0 to 2 percent slopes-----	24,778	11.2
13B	Bluford silt loam, 2 to 5 percent slopes-----	123	*
13B2	Bluford silt loam, 2 to 5 percent slopes, eroded-----	3,625	1.6
14B	Ava silt loam, 2 to 5 percent slopes-----	4,443	2.0
14C2	Ava silt loam, 5 to 10 percent slopes, eroded-----	787	0.4
27B2	Miami silt loam, 2 to 5 percent slopes, eroded-----	1,244	0.6
27C2	Miami loam, 5 to 10 percent slopes, eroded-----	520	0.2
27C3	Miami loam, 5 to 10 percent slopes, severely eroded-----	277	0.1
27D2	Miami loam, 10 to 15 percent slopes, eroded-----	144	*
27E	Miami loam, 15 to 30 percent slopes-----	190	*
27G	Miami loam, 30 to 60 percent slopes-----	395	0.2
48	Ebbert silt loam-----	23	*
50	Viriden silt loam-----	6,280	2.8
109	Raccoon silt loam-----	6,567	3.0
120	Huey silt loam-----	4	*
132A	Starks silt loam, 0 to 2 percent slopes-----	2,332	1.1
132B	Starks silt loam, 2 to 5 percent slopes-----	465	0.2
134A	Camden silt loam, 0 to 2 percent slopes-----	608	0.3
134B	Camden silt loam, 2 to 5 percent slopes-----	639	0.3
136	Brooklyn silt loam-----	55	*
138	Shiloh silty clay loam-----	563	0.3
152	Drummer silt loam-----	2,582	1.2
208	Sexton silt loam-----	951	0.4
212B	Thebes silt loam, 2 to 5 percent slopes-----	923	0.4
218	Newberry silt loam-----	7,377	3.3
219A	Millbrook silt loam, 0 to 2 percent slopes-----	466	0.2
234A	Sunbury silt loam, 0 to 2 percent slopes-----	734	0.3
236A	Sabina silt loam, 0 to 2 percent slopes-----	1,404	0.6
291B	Xenia silt loam, 2 to 5 percent slopes-----	1,610	0.7
322C2	Russell silt loam, 5 to 10 percent slopes, eroded-----	38	*
327B2	Fox gravelly sandy loam, 2 to 5 percent slopes, eroded-----	257	0.1
327C2	Fox gravelly sandy loam, 5 to 10 percent slopes, eroded-----	203	*
330	Peotone silty clay loam-----	5	*
353A	Toronto silt loam, 0 to 2 percent slopes-----	1	*
408	Aquents, loamy, nearly level-----	196	*
496A	Fincastle silt loam, 0 to 2 percent slopes-----	71	*
570C2	Martinsville silt loam, 5 to 10 percent slopes, eroded-----	9	*
581B2	Tamalco silt loam, 2 to 5 percent slopes, eroded-----	440	0.2
620A	Darmstadt silt loam, 0 to 2 percent slopes-----	42	*
621B2	Coulterville silt loam, 2 to 5 percent slopes, eroded-----	1,351	0.6
631B2	Princeton fine sandy loam, 2 to 5 percent slopes, eroded-----	520	0.2

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
631C2	Princeton fine sandy loam, 5 to 10 percent slopes, eroded-----	525	0.2
631D2	Princeton fine sandy loam, 10 to 15 percent slopes, eroded-----	213	*
802B	Orthents, loamy, nonacid, gently sloping-----	346	0.2
802E	Orthents, loamy, nonacid, strongly sloping-----	457	0.2
844B2	Ava-Blair complex, 2 to 7 percent slopes, eroded-----	13,425	6.1
865	Pits, gravel-----	173	*
889A	Bluford-Darmstadt complex, 0 to 2 percent slopes-----	9,881	4.5
890C2	Ursa-Atlas complex, 5 to 10 percent slopes, eroded-----	1,686	0.8
890C3	Ursa-Atlas complex, 5 to 10 percent slopes, severely eroded-----	352	0.2
890D2	Ursa-Atlas complex, 10 to 15 percent slopes, eroded-----	962	0.4
891	Cisne-Piasa complex-----	2,504	1.1
896	Wynoose-Huey complex-----	3,594	1.6
913F	Hickory-Marseilles complex, 15 to 30 percent slopes-----	955	0.4
913G	Hickory-Marseilles complex, 30 to 60 percent slopes-----	906	0.4
927C2	Blair-Atlas complex, 5 to 10 percent slopes, eroded-----	265	0.1
967G	Hickory-Gosport complex, 30 to 60 percent slopes-----	35	*
3074	Radford silt loam, frequently flooded-----	652	0.3
3092B	Sarpy loamy fine sand, 2 to 5 percent slopes, frequently flooded-----	941	0.4
3225	Holton loam, frequently flooded-----	3,336	1.5
3226	Wirt silt loam, frequently flooded-----	1,858	0.8
3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded-----	725	0.3
3288	Petrolia silty clay loam, frequently flooded-----	502	0.2
3304A	Landes silt loam, 0 to 2 percent slopes, frequently flooded-----	1,325	0.6
3328	Holly silt loam, frequently flooded-----	1,542	0.7
3331A	Haymond silt loam, 0 to 2 percent slopes, frequently flooded-----	1,818	0.8
3331B	Haymond silt loam, 2 to 5 percent slopes, eroded, frequently flooded-----	347	0.2
3333	Wakeland silt loam, frequently flooded-----	3,258	1.5
3334	Birds silt loam, frequently flooded-----	1,290	0.6
3404	Titus silty clay loam, frequently flooded-----	409	0.2
3415	Orion silt loam, frequently flooded-----	1,262	0.6
3424	Shoals silt loam, frequently flooded-----	59	*
3430A	Raddle silt loam, 0 to 2 percent slopes, frequently flooded-----	1,846	0.8
3451	Lawson silt loam, frequently flooded-----	608	0.3
3603	Blackoar silt loam, frequently flooded-----	876	0.4
3776+	Comfrey silt loam, overwash, frequently flooded-----	703	0.3
7109	Raccoon silt loam, rarely flooded-----	400	0.2
7134B	Camden silt loam, 2 to 5 percent slopes, eroded, rarely flooded-----	347	0.2
7424	Shoals loam, rarely flooded-----	1,587	0.7
	Water-----	1,989	0.9
	Total-----	221,620	100.0

* Less than 0.05 percent. The combined extent of the soils assigned an asterisk in the "Percent" column is about 0.9 percent.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected in nonirrigated areas under a high level of management.
Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Orchardgrass- alfalfa	Bromegrass- alfalfa hay
		Bu	Bu	Bu	AUM*	Tons
2: Cisne-----	3w	115	35	52	7.5	4.5
3A: Hoyleton-----	2w	116	34	53	7.8	4.7
3B: Hoyleton-----	2e	115	34	52	7.8	4.7
5B2: Blair-----	2e	91	32	42	5.9	3.6
5B3: Blair-----	3e	85	29	39	5.5	3.3
5C2: Blair-----	3e	89	31	41	5.8	3.5
5C3: Blair-----	4e	82	29	38	5.4	3.2
6B2: Fishhook-----	2e	71	21	23	4.1	2.4
7B2: Atlas-----	2e	54	17	20	3.8	2.3
7B3: Atlas-----	3e	45	14	17	3.2	1.9
7C2: Atlas-----	3e	52	16	19	3.6	2.2
7D2: Atlas-----	4e	49	15	18	3.4	2.1
7D3: Atlas-----	6e	---	---	---	2.8	1.7
8D2: Hickory-----	3e	72	23	26	4.5	2.7
8D3: Hickory-----	4e	---	---	---	4.2	2.5
8F: Hickory-----	6e	---	---	---	4.0	2.4
8G: Hickory-----	7e	---	---	---	2.4	---
12: Wynoose-----	3w	96	33	46	6.5	3.9
13A: Bluford-----	2w	103	33	49	6.8	4.1

See footnote at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Orchardgrass- alfalfa	Bromegrass- alfalfa hay
		Bu	Bu	Bu	AUM*	Tons
13B: Bluford-----	2e	102	33	49	6.8	4.1
13B2: Bluford-----	2e	99	32	47	6.5	3.9
14B: Ava-----	2e	97	33	48	7.1	4.3
14C2: Ava-----	3e	92	31	45	6.7	4.0
27B2: Miami-----	2e	116	38	49	7.7	4.6
27C2: Miami-----	3e	114	38	48	7.5	4.5
27C3: Miami-----	4e	105	35	44	7.0	4.2
27D2: Miami-----	4e	109	36	46	7.2	4.3
27E: Miami-----	6e	---	---	---	---	---
27G: Miami-----	7e	---	---	---	---	---
48: Ebbert-----	3w	130	42	54	---	---
50: Virden-----	2w	138	46	57	---	---
109: Raccoon-----	3w	108	35	48	6.8	4.1
120: Huey-----	4w	64	23	33	4.3	2.6
132A: Starks-----	2w	129	40	55	8.5	5.1
132B: Starks-----	2e	128	40	54	8.4	5.0
134A: Camden-----	1	125	39	55	8.3	5.0
134B: Camden-----	2e	120	37	53	8.2	4.8
136: Brooklyn-----	2w	108	35	44	6.2	3.7
138: Shiloh-----	2w	139	46	56	---	---

See footnote at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Orchardgrass- alfalfa	Bromegrass- alfalfa hay
		Bu	Bu	Bu	AUM*	Tons
152: Drummer-----	2w	154	51	61	9.2	5.5
208: Sexton-----	2w	120	37	48	7.2	4.3
212B: Thebes-----	2e	99	35	46	6.6	4.0
218: Newberry-----	2w	118	37	53	7.5	4.5
219A: Millbrook-----	1	144	43	59	9.0	5.4
234A: Sunbury-----	1	149	45	62	9.3	5.6
236A: Sabina-----	2w	133	42	56	8.7	5.2
291B: Xenia-----	2e	125	41	54	7.9	4.8
322C2: Russell-----	3e	118	39	52	7.5	4.5
327B2: Fox-----	2e	102	32	44	6.9	4.1
327C2: Fox-----	3e	100	31	43	6.8	4.0
330: Pectone-----	2w	123	42	43	7.0	4.2
353A: Toronto-----	2w	141	44	59	9.0	5.4
408: Aquents.						
496A: Fincastle-----	2w	131	41	55	8.3	5.0
570C2: Martinsville----	3e	114	35	48	7.5	4.5
581B2: Tamalco-----	3e	67	23	33	4.6	2.8
620A: Darmstadt-----	3w	69	26	36	5.0	3.0
621B2: Coulterville----	2e	99	32	42	6.1	3.7
631B2: Princeton-----	2e	105	36	47	7.1	4.2

See footnote at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Orchardgrass- alfalfa	Bromegrass- alfalfa hay
		Bu	Bu	Bu	AUM*	Tons
631C2: Princeton-----	3e	103	35	45	6.9	4.1
631D2: Princeton-----	4e	99	33	44	6.7	4.0
802B: Orthents.						
802E: Orthents.						
844B2----- Ava-Blair	2e	94	32	45	6.6	4.0
865: Pits, gravel.						
889A----- Bluford- Darmstadt	3w	91	31	45	6.2	3.7
890C2----- Ursa-Atlas	3e	55	16	20	3.6	2.2
890C3----- Ursa-Atlas	4e	48	---	17	3.0	1.8
890D2----- Ursa-Atlas	4e	54	---	19	3.4	2.1
891----- Cisne-Piasa	3w	100	32	46	5.8	3.9
896----- Wynoose-Huey	4w	83	28	41	5.5	3.3
913F----- Hickory- Marseilles	7e	---	---	---	4.3	2.4
913G----- Hickory- Marseilles	7e	---	---	---	2.7	---
927C2----- Blair-Atlas	3e	65	23	34	5.0	3.0
967G----- Hickory-Gosport	7e	---	---	---	---	---
3074: Radford-----	3w	114	37	49	7.4	4.5
3092B: Sarpy-----	4s	63	23	31	4.5	2.7

See footnote at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Orchardgrass- alfalfa	Bromegrass- alfalfa hay
		Bu	Bu	Bu	AUM*	Tons
3225: Holton-----	3w	75	26	32	6.4	3.0
3226: Wirt-----	2w	95	32	42	7.4	4.0
3284A: Tice-----	3w	108	33	43	6.7	4.0
3288: Petrolia-----	3w	112	35	40	6.0	4.0
3304A: Landes-----	3w	67	23	---	4.1	2.1
3328: Holly-----	3w	118	43	52	6.5	4.2
3331A: Haymond-----	2w	123	40	50	8.6	4.8
3331B: Haymond-----	2e	118	38	48	8.2	4.6
3333: Wakeland-----	2w	108	36	46	8.3	5.0
3334: Birds-----	3w	110	38	47	6.7	4.0
3404: Titus-----	4w	75	25	---	4.3	2.6
3415: Orion-----	3w	98	32	---	6.6	3.8
3424: Shoals-----	2w	89	32	39	5.7	3.5
3430A: Raddle-----	2w	135	40	53	8.8	5.2
3451: Lawson-----	4w	65	23	---	4.0	2.5
3603: Blackoar-----	3w	106	35	41	6.3	3.8
3776+: Comfrey-----	2w	140	46	51	8.3	5.0
7109: Raccoon-----	2w	108	35	48	6.8	4.7
7134B: Camden-----	2e	120	37	53	8.0	4.8
7424: Shoals-----	2w	145	46	61	8.3	5.0

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 6.--Prime Farmland

Map symbol	Soil name
2	Cisne silt loam (where drained)
3A	Hoyleton silt loam, 0 to 2 percent slopes
3B	Hoyleton silt loam, 2 to 5 percent slopes
5B2	Blair silt loam, 2 to 5 percent slopes, eroded
13A	Bluford silt loam, 0 to 2 percent slopes (where drained)
13B	Bluford silt loam, 2 to 5 percent slopes
13B2	Bluford silt loam, 2 to 5 percent slopes, eroded
14B	Ava silt loam, 2 to 5 percent slopes
27B2	Miami silt loam, 2 to 5 percent slopes, eroded
48	Ebbert silt loam (where drained)
50	Viriden silt loam (where drained)
109	Raccoon silt loam (where drained)
132A	Starks silt loam, 0 to 2 percent slopes (where drained)
132B	Starks silt loam, 2 to 5 percent slopes
134A	Camden silt loam, 0 to 2 percent slopes
134B	Camden silt loam, 2 to 5 percent slopes
136	Brooklyn silt loam (where drained)
138	Shiloh silty clay loam (where drained)
152	Drummer silt loam (where drained)
208	Sexton silt loam (where drained)
212B	Thebes silt loam, 2 to 5 percent slopes
218	Newberry silt loam (where drained)
219A	Millbrook silt loam, 0 to 2 percent slopes (where drained)
234A	Sunbury silt loam, 0 to 2 percent slopes
236A	Sabina silt loam, 0 to 2 percent slopes (where drained)
291B	Xenia silt loam, 2 to 5 percent slopes
330	Pectone silty clay loam (where drained)
353A	Toronto silt loam, 0 to 2 percent slopes (where drained)
496A	Fincastle silt loam, 0 to 2 percent slopes (where drained)
621B2	Coulterville silt loam, 2 to 5 percent slopes, eroded
631B2	Princeton fine sandy loam, 2 to 5 percent slopes, eroded
631C2	Princeton fine sandy loam, 5 to 10 percent slopes, eroded
844B2	Ava-Blair complex, 2 to 7 percent slopes, eroded
3074	Radford silt loam, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3225	Holton loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3226	Wirt silt loam, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3288	Petrolia silty clay loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3304A	Landes silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3328	Holly silt loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3331A	Haymond silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3331B	Haymond silt loam, 2 to 5 percent slopes, eroded, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3333	Wakeland silt loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3334	Birds silt loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3404	Titus silty clay loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3415	Orion silt loam, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3424	Shoals silt loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)

Table 6.--Prime Farmland--Continued

Map symbol	Soil name
3430A	Raddle silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3603	Blackoar silt loam, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3776+	Comfrey silt loam, overwash, frequently flooded (where drained and either protected from flooding or nor frequently flooded during the growing season)
7109	Raccoon silt loam, rarely flooded (where drained)
7134B	Camden silt loam, 2 to 5 percent slopes, eroded, rarely flooded
7424	Shoals loam, rarely flooded (where drained)

Table 7.--Woodland Management and Productivity

(Only the soils suitable for the production of commercial trees are rated.)

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m ³ /ha	
2: Cisne-----	4W	Slight	Severe	Moderate	Moderate	Severe	Bitternut hickory--- White oak----- Black oak----- Pin oak-----	--- --- --- 70	--- --- --- 4	Red maple, green ash, water tupelo, pin oak
3A: Hoyleton-----	4A	Slight	Slight	Slight	Slight	Slight	Bur oak----- Green ash----- White oak----- Northern red oak----	--- --- 70 70	--- --- 4 4	Green ash, shortleaf pine, eastern white pine, eastern cottonwood, white oak, northern red oak
3B: Hoyleton-----	4A	Slight	Slight	Slight	Slight	Slight	Bur oak----- Green ash----- White oak----- Northern red oak----	--- --- 70 70	--- --- 4 4	Green ash, shortleaf pine, eastern white pine, eastern cottonwood, white oak, northern red oak
5B2: Blair-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash----- White oak----- Bur oak----- Northern red oak----	--- 70 70 70	--- 4 4 4	Shortleaf pine, eastern white pine, loblolly pine
5B3: Blair-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash----- White oak----- Bur oak----- Northern red oak----	--- 70 70 70	--- 4 4 4	Shortleaf pine, eastern white pine, loblolly pine
5C2: Blair-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash----- White oak----- Bur oak----- Northern red oak----	--- 70 70 70	--- 4 4 4	Shortleaf pine, eastern white pine, loblolly pine
5C3: Blair-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash----- White oak----- Bur oak----- Northern red oak----	--- 70 70 70	--- 4 4 4	Shortleaf pine, eastern white pine, loblolly pine

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi-nation symbol	Management concerns					Potential productivity			
		Erosion hazard	Equip-ment limita-tion	Seedling mortal-ity	Wind-throw hazard	Plant competi-tion	Common trees	Site index	Volume of wood fiber	Suggested trees to plant
									m ³ /ha	
6B2: Fishhook-----	4C	Slight	Slight	Slight	Moderate	Moderate	Green ash----- White oak----- Bur oak----- Northern red oak----	--- 70 --- 70	--- 4 --- 4	Eastern redcedar, shortleaf pine, eastern white pine, loblolly pine
7B2: Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak----- Bur oak----- Northern red oak---- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, Austrian pine, pin oak
7B3: Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak----- Bur oak----- Northern red oak---- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, Austrian pine, pin oak
7C2: Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak----- Bur oak----- Northern red oak---- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, Austrian pine, pin oak
7D2: Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak----- Bur oak----- Northern red oak---- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, Austrian pine, pin oak
7D3: Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak----- Bur oak----- Northern red oak---- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, Austrian pine, pin oak
8D2: Hickory-----	5A	Slight	Slight	Slight	Slight	Moderate	Bitternut hickory--- Green ash----- Northern red oak---- Black oak----- Yellow-poplar----- White oak-----	--- --- 85 --- 95 85	--- --- 5 --- 7 5	Sugar maple, black walnut, yellow-poplar, red pine, eastern white pine, white oak
8D3: Hickory-----	5A	Slight	Slight	Slight	Slight	Moderate	Bitternut hickory--- Green ash----- Northern red oak---- Black oak----- Yellow-poplar----- White oak-----	--- --- 85 --- 95 85	--- --- 5 --- 7 5	Sugar maple, black walnut, yellow-poplar, red pine, eastern white pine, white oak

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
8F: Hickory-----	5R	Moderate	Moderate	Slight	Slight	Moderate	Bitternut hickory---	---	---	Sugar maple, black walnut, yellow-poplar, red pine, eastern white pine, white oak
						Green ash-----	---	---		
						Northern red oak---	85	5		
						Black oak-----	---	---		
						White oak-----	85	5		
8G: Hickory-----	5R	Severe	Severe	Slight	Slight	Moderate	Bitternut hickory---	---	---	Sugar maple, black walnut, yellow-poplar, red pine, eastern white pine, white oak
						Green ash-----	---	---		
						Northern red oak---	85	5		
						Black oak-----	---	---		
						White oak-----	85	5		
12: Wynoose-----	4W	Slight	Severe	Moderate	Moderate	Severe	White oak-----	---	---	Red maple, pin oak
						Black oak-----	---	---		
						Pin oak-----	70	4		
13A: Bluford-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash-----	---	---	Eastern redcedar, shortleaf pine, eastern white pine, loblolly pine
						White oak-----	70	4		
						Southern red oak---	70	4		
						Bur oak-----	---	---		
						Northern red oak---	70	4		
13B: Bluford-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash-----	---	---	Eastern redcedar, shortleaf pine, eastern white pine, loblolly pine
						White oak-----	70	4		
						Southern red oak---	70	4		
						Bur oak-----	---	---		
						Northern red oak---	70	4		
13B2: Bluford-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash-----	---	---	Eastern redcedar, shortleaf pine, eastern white pine, loblolly pine
						White oak-----	70	4		
						Southern red oak---	70	4		
						Bur oak-----	---	---		
						Northern red oak---	70	4		
14B: Ava-----	4A	Slight	Slight	Slight	Slight	Moderate	Northern red oak---	80	4	Black walnut, sweetgum, yellow-poplar, American sycamore, eastern cottonwood, white oak
						Black walnut-----	---	---		
						Yellow-poplar-----	90	6		
						White oak-----	75	4		

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equip- ment limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber m ³ /ha	
14C2: Ava-----	4A	Slight	Slight	Slight	Slight	Moderate	Northern red oak----- Black walnut----- Yellow-poplar----- White oak-----	80 --- 90 75	4 --- 6 4	Black walnut, sweetgum, yellow-poplar, American sycamore, eastern cottonwood, white oak
27B2: Miami-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine
27C2: Miami-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine
27C3: Miami-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine
27D2: Miami-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine
27E: Miami-----	5R	Moderate	Moderate	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine
27G: Miami-----	5R	Severe	Severe	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi-nation symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equip-ment limita-tion	Seedling mortal-ity	Wind-throw hazard	Plant competi-tion	Common trees	Site index	Volume of wood fiber	
48: Ebbert.									m ³ /ha	
50: Viriden.										
109: Raccoon-----	4W	Slight	Severe	Severe	Severe	Severe	Green ash----- White oak----- Post oak----- Pin oak-----	--- --- 80 80	--- --- 4 4	Red maple, water tupelo, pin oak, baldcypress
120: Huey-----	3T	Slight	Severe	Severe	Moderate	Severe	Eastern cottonwood-- White oak----- Green ash-----	--- --- 60	--- --- 3	Green ash, eastern redcedar, Osage-orange, eastern white pine
132A: Starks-----	4A	Slight	Slight	Slight	Slight	Moderate	Black walnut----- Northern red oak---- Yellow-poplar----- White oak-----	--- 80 90 80	--- 4 6 4	Sugar maple, green ash, yellow-poplar, American sycamore, white oak
132B: Starks-----	4A	Slight	Slight	Slight	Slight	Moderate	Black walnut----- Northern red oak---- Yellow-poplar----- White oak-----	--- 80 90 80	--- 4 6 4	Sugar maple, green ash, yellow-poplar, American sycamore, white oak
134A: Camden-----	7A	Slight	Slight	Slight	Slight	Severe	Sweetgum----- Northern red oak---- Green ash----- Yellow-poplar----- White oak-----	80 85 76 95 85	6 5 5 7 5	White ash, green ash, black walnut, yellow-poplar, red pine, eastern white pine, white oak, black locust
134B: Camden-----	7A	Slight	Slight	Slight	Slight	Severe	Sweetgum----- Northern red oak---- Green ash----- Yellow-poplar----- White oak-----	80 85 76 95 85	6 5 5 7 5	White ash, green ash, black walnut, yellow-poplar, red pine, eastern white pine, white oak, black locust

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
136: Brooklyn.									m ³ /ha	
138: Shiloh.										
152: Drummer.										
208: Sexton-----	4W	Slight	Severe	Moderate	Severe	Severe	Green ash----- Yellow-poplar----- White oak----- Pin oak-----	--- 80 --- 80	--- 5 --- 4	Red maple, water tupelo, pin oak, baldcypress
212B: Thebes-----	4A	Slight	Slight	Slight	Slight	Moderate	Yellow-poplar----- Northern red oak---- Black walnut----- White oak-----	90 80 --- 80	6 4 --- 4	Sugar maple, green ash, black walnut, red pine, eastern white pine, white oak
218: Newberry.										
219A: Millbrook-----	4A	Slight	Slight	Slight	Slight	Moderate	Yellow-poplar----- Black walnut----- White oak----- Northern red oak----	90 --- 80 80	6 --- 4 4	Sugar maple, green ash, black walnut, white oak, northern red oak
234A: Sunbury.										
236A: Sabina-----	4A	Slight	Slight	Slight	Slight	Moderate	Black walnut----- White oak----- Northern red oak----	--- 80 80	--- 4 4	Sugar maple, black walnut, eastern white pine, Scotch pine, American sycamore, eastern cottonwood, white oak, northern red oak
291B: Xenia-----	5A	Slight	Slight	Slight	Slight	Severe	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m ³ /ha	
322C2: Russell-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- Yellow-poplar----- White oak----- Northern red oak----	76 98 90 90	5 7 5 5	White ash, green ash, black walnut, yellow-poplar, red pine, eastern white pine, black cherry, white oak, northern red oak, black locust
327B2: Fox-----	4A	Slight	Slight	Slight	Slight	Moderate	Sugar maple----- Black cherry----- White ash----- Black walnut----- Yellow-poplar----- White oak----- Northern red oak----	--- --- --- --- --- --- 80	--- --- --- --- --- --- 4	White ash, black walnut, yellow-poplar, red pine, eastern white pine, white oak, northern red oak
327C2: Fox-----	4A	Slight	Slight	Slight	Slight	Moderate	Sugar maple----- Black cherry----- White ash----- Black walnut----- Yellow-poplar----- White oak----- Northern red oak----	--- --- --- --- --- --- 80	--- --- --- --- --- --- 4	White ash, black walnut, yellow-poplar, red pine, eastern white pine, white oak, northern red oak
330: Peotone.										
353A: Toronto.										
408: Aquents.										
496A: Fincastle-----	4A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Pin oak----- Northern red oak---- Yellow-poplar-----	80 75 85 75 85	6 4 5 4 6	Red maple, white ash, yellow-poplar, eastern white pine, American sycamore, baldcypress
570C2: Martinsville----	4A	Slight	Slight	Slight	Slight	Severe	Sweetgum----- White oak----- Yellow-poplar-----	76 80 98	5 4 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equip- ment limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber	
									m ³ /ha	
581B2: Tamalco-----	4T	Slight	Slight	Moderate	Slight	Moderate	White oak----- Black oak-----	70 70	4 4	Green ash, eastern redcedar, eastern white pine, white oak, black oak
620A: Darmstadt-----	4T	Slight	Slight	Moderate	Slight	Slight	Pignut hickory----- Black oak----- White oak-----	--- 70 70	--- 4 4	Green ash, eastern redcedar, Osage-orange, eastern white pine, white oak
621B2: Coulterville----	4A	Slight	Slight	Slight	Slight	Moderate	Pignut hickory----- Black oak----- White oak-----	--- --- 70	--- --- 4	Green ash, eastern redcedar, eastern white pine, white oak
631B2: Princeton-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine, black locust
631C2: Princeton-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine, black locust
631D2: Princeton-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- White oak----- Yellow-poplar-----	76 90 98	5 5 7	White ash, black walnut, yellow-poplar, red pine, eastern white pine, black locust
802B: Orthents-----	---	---	---	---	---	---	---	---	---	Black walnut, yellow-poplar, white oak, northern red oak

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m ³ /ha	
802E: Orthents-----	---	---	---	---	---	---	---	---	---	Black walnut, yellow-poplar, white oak, northern red oak
844B2: Ava-----	4A	Slight	Slight	Slight	Slight	Moderate	Northern red oak-----	80	4	Black walnut, sweetgum, yellow-poplar, American sycamore, eastern cottonwood, white oak
							Black walnut-----	---	---	
							Yellow-poplar-----	90	6	
							White oak-----	75	4	
Blair-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash-----	---	---	Shortleaf pine, eastern white pine, loblolly pine
							White oak-----	70	4	
							Bur oak-----	70	4	
							Northern red oak----	70	4	
865: Pits, gravel.										
889A: Bluford-----	4A	Slight	Slight	Slight	Slight	Slight	Green ash-----	---	---	Eastern redcedar, shortleaf pine, eastern white pine, loblolly pine
							White oak-----	70	4	
							Southern red oak----	70	4	
							Bur oak-----	---	---	
							Northern red oak----	70	4	
Darmstadt-----	4T	Slight	Slight	Moderate	Slight	Slight	Pignut hickory-----	---	---	Green ash, eastern redcedar, Osage-orange, eastern white pine, white oak
							Black oak-----	70	4	
							White oak-----	70	4	
890C2: Ursa-----	4A	Slight	Slight	Slight	Slight	Slight	White oak-----	70	4	Red maple, green ash, eastern redcedar, Austrian pine, pin oak
							Northern red oak----	70	4	
							Black oak-----	70	4	
							Green ash-----	---	---	
Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak-----	70	4	Red maple, green ash, Austrian pine, pin oak
							Bur oak-----	70	4	
							Northern red oak----	70	4	
							Green ash-----	---	---	

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equip- ment limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber m ³ /ha	
890C3: Ursa-----	4A	Slight	Slight	Slight	Slight	Slight	White oak----- Northern red oak---- Black oak----- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, eastern redcedar, Austrian pine, pin oak
Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak----- Bur oak----- Northern red oak---- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, Austrian pine, pin oak
890D2: Ursa-----	4A	Slight	Slight	Slight	Slight	Slight	White oak----- Northern red oak---- Black oak----- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, eastern redcedar, Austrian pine, pin oak
Atlas-----	4C	Slight	Slight	Moderate	Moderate	Slight	White oak----- Bur oak----- Northern red oak---- Green ash-----	70 70 70 ---	4 4 4 ---	Red maple, green ash, Austrian pine, pin oak
891: Cisne-----	4W	Slight	Severe	Moderate	Moderate	Severe	Bitternut hickory--- White oak----- Black oak----- Pin oak-----	--- --- --- 70	--- --- --- 4	Red maple, green ash, water tupelo, pin oak
Piasa.										
896: Wynoose-----	4W	Slight	Severe	Moderate	Moderate	Severe	White oak----- Black oak----- Pin oak-----	--- --- 70	--- --- 4	Red maple, pin oak
Huey-----	3T	Slight	Severe	Severe	Moderate	Severe	Eastern cottonwood-- White oak----- Green ash-----	--- --- 60	--- --- 3	Green ash, eastern redcedar, Osage-orange, eastern white pine
913F: Hickory-----	5R	Moderate	Moderate	Slight	Slight	Moderate	Bitternut hickory--- Green ash----- Northern red oak---- Black oak----- Yellow-poplar----- White oak-----	--- --- 85 --- 95 85	--- --- 5 --- 7 5	Sugar maple, black walnut, yellow-poplar, red pine, eastern white pine, white oak

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity			
		Erosion hazard	Equip- ment limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber	Suggested trees to plant
3092B: Sarpy-----	3S	Slight	Slight	Severe	Slight	Slight	Silver maple----- Eastern cottonwood--	90 95	3 8	American sycamore, eastern cottonwood, black willow
3225: Holton-----	5A	Slight	Slight	Slight	Slight	Moderate	Sugar maple----- Black cherry----- Pin oak----- Northern red oak---- White ash----- Black walnut----- Yellow-poplar----- White oak-----	80 --- 85 80 --- --- 90 ---	4 --- 5 4 --- --- 6 ---	White ash, black walnut, yellow-poplar, red pine, eastern white pine, white oak
3226: Wirt-----	7A	Slight	Slight	Slight	Slight	Severe	Yellow-poplar-----	95	7	Black walnut, yellow-poplar, eastern white pine
3284A: Tice-----	5A	Slight	Slight	Slight	Slight	Severe	White ash----- Sweetgum----- Virginia pine----- Pin oak----- Yellow-poplar----- Eastern cottonwood--	--- 86 90 96 90 ---	--- 7 9 5 6 ---	Red maple, green ash, yellow-poplar, American sycamore, eastern cottonwood, cherrybark oak
3288: Petrolia-----	5W	Slight	Moderate	Moderate	Slight	Severe	Sweetgum----- Cherrybark oak----- Pin oak----- American sycamore--- Eastern cottonwood--	--- --- 90 --- 100	--- --- 5 --- 9	Red maple, water tupelo, American sycamore, eastern cottonwood, baldcypress
3304A: Landes-----	7A	Slight	Slight	Slight	Slight	Severe	Green ash----- Sweetgum----- Yellow-poplar----- American sycamore--- Eastern cottonwood--	--- --- 95 --- 105	--- --- 7 --- 10	Sugar maple, green ash, black walnut, sweetgum, yellow-poplar, eastern white pine, American sycamore, eastern cottonwood

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m ³ /ha	
3328: Holly-----	5W	Slight	Severe	Moderate	Moderate	Severe	Black cherry----- Red maple----- Green ash----- Eastern cottonwood-- Swamp white oak----- Pin oak-----	--- --- --- --- --- 90	--- --- --- --- --- 5	Red maple, silver maple, green ash, sweetgum, American sycamore, eastern cottonwood, swamp white oak, pin oak, baldcypress
3331A: Haymond-----	8A	Slight	Slight	Slight	Slight	Moderate	White oak----- Black walnut----- Yellow-poplar-----	90 70 100	5 --- 8	Black walnut, yellow-poplar, eastern white pine, black locust
3331B: Haymond-----	8A	Slight	Slight	Slight	Slight	Moderate	White oak----- Black walnut----- Yellow-poplar-----	90 70 100	5 --- 8	Black walnut, yellow-poplar, eastern white pine, black locust
3333: Wakeland-----	5A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- Yellow-poplar----- Virginia pine----- Pin oak-----	88 90 85 90	7 6 9 5	Red maple, white ash, eastern white pine, American sycamore, baldcypress
3334: Birds-----	5W	Slight	Severe	Moderate	Moderate	Severe	Sweetgum----- Cherrybark oak----- Pin oak----- American sycamore--- Eastern cottonwood--	--- --- 90 --- 100	--- --- 5 --- 9	Red maple, water tupelo, American sycamore, eastern cottonwood, baldcypress
3404: Titus-----	2W	Slight	Severe	Severe	Moderate	Severe	White ash----- Silver maple----- Eastern cottonwood--	51 80 99	2 2 9	Red maple, silver maple, hackberry, green ash, water tupelo, American sycamore, eastern cottonwood, swamp white oak, pin oak

Table 7.--Woodland Management and Productivity--Continued

Map symbol and soil name	Ordi- nation symbol	Management concerns					Potential productivity			
		Erosion hazard	Equip- ment limita- tion	Seedling mortal- ity	Wind- throw hazard	Plant competi- tion	Common trees	Site index	Volume of wood fiber m ³ /ha	Suggested trees to plant
3415: Orion-----	2W	Slight	Moderate	Slight	Slight	Severe	Red maple----- Silver maple----- White ash-----	--- 80 ---	--- 2 ---	Silver maple, white ash, white spruce, eastern cottonwood
3424: Shoals-----	5W	Slight	Moderate	Moderate	Slight	Severe	White ash----- Virginia pine----- Eastern cottonwood-- Sweetgum----- Yellow-poplar----- Pin oak-----	--- 90 --- 86 90 90	--- 9 --- 7 6 5	Red maple, sweetgum, yellow-poplar, swamp chestnut oak, pin oak
3430A: Raddle.										
3451: Lawson-----	2W	Slight	Moderate	Slight	Slight	Severe	Red maple----- Silver maple----- White ash-----	--- 70 ---	--- 2 ---	Silver maple, white ash, white spruce
3603: Blackoar-----	5W	Slight	Severe	Moderate	Moderate	Severe	Green ash----- Eastern cottonwood-- Pin oak-----	78 94 87	6 8 5	Pecan, eastern cottonwood, pin oak
3776+: Comfrey.										
7109: Raccoon-----	4W	Slight	Severe	Moderate	Severe	Severe	Green ash----- White oak----- Post oak----- Pin oak-----	--- --- 80 80	--- --- 4 4	Red maple, water tupelo, pin oak, baldcypress
7134B: Camden-----	7A	Slight	Slight	Slight	Slight	Moderate	Sweetgum----- Northern red oak---- Green ash----- Yellow-poplar----- White oak-----	80 85 76 95 85	6 5 5 7 5	Green ash, black walnut, yellow-poplar, red pine, eastern white pine, white oak
7424: Shoals-----	5W	Slight	Moderate	Moderate	Slight	Severe	White ash----- Virginia pine----- Eastern cottonwood-- Sweetgum----- Yellow-poplar----- Pin oak-----	--- 90 --- 86 90 90	--- 9 --- 7 6 5	Red maple, sweetgum, yellow-poplar, swamp chestnut oak, pin oak

Table 8.--Windbreaks and Environmental Plantings

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
2: Cisne-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
3A: Hoyleton-----	---	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
3B: Hoyleton-----	---	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
5B2: Blair-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
5B3: Blair-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
5C2: Blair-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak

Table 8.--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
5C3: Blair-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
6B2: Fishhook-----	Gray dogwood	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
7B2: Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
7B3: Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
7C2: Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
7D2: Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---

Table 8.--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
7D3: Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
8D2: Hickory-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
8D3: Hickory-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
8F: Hickory-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
8G: Hickory-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
12: Wynoose-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
13A: Bluford-----	---	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---

Table 8.--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
13B: Bluford-----	---	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
13B2: Bluford-----	---	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
14B: Ava-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
14C2: Ava-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
27B2: Miami-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
27C2: Miami-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
27C3: Miami-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
27D2: Miami-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
27E: Miami-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
27G: Miami-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
48: Ebbert-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
50: Virden-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
109: Raccoon-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
120: Huey-----	---	Silky dogwood, Russian-olive, eastern redcedar	Green ash, Siberian elm	---	---
132A: Starks-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak

Table 8.--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
132B: Starks-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
134A: Camden-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
134B: Camden-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
136: Brooklyn-----	Pin oak	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	---
138: Shiloh-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
152: Drummer-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
208: Sexton-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak

Table 8.--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
212B: Thebes-----	Siberian peashrub	Washington hawthorn, autumn- olive, eastern redcedar, Amur honeysuckle, radiant crabapple, lilac	Jack pine, Austrian pine, red pine, eastern white pine	---	---
218: Newberry-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
219A: Millbrook-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
234A: Sunbury-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
236A: Sabina-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
291B: Xenia-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
322C2: Russell-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak

Table 8.--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
327B2: Fox-----	Siberian peashrub	Washington hawthorn, autumn- olive, eastern redcedar, Amur honeysuckle, radiant crabapple, lilac	Jack pine, Austrian pine, red pine, eastern white pine	---	---
327C2: Fox-----	Siberian peashrub	Washington hawthorn, autumn- olive, eastern redcedar, Amur honeysuckle, radiant crabapple, lilac	Jack pine, Austrian pine, red pine, eastern white pine	---	---
330: Peotone-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
353A: Toronto-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
408: Aquents.					
496A: Fincastle-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
570C2: Martinsville----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
581B2: Tamalco-----	---	Russian-olive, eastern redcedar	Green ash, Siberian elm	---	---
620A: Darmstadt-----	---	Russian-olive, eastern redcedar	Green ash, Siberian elm	---	---

Table 8.--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
621B2: Coulterville----	---	Washington hawthorn, nannyberry viburnum, blackhaw	Hackberry, green ash, eastern redcedar, Osage-orange, white spruce, northern whitecedar	Black willow	---
631B2: Princeton-----	---	Washington hawthorn, Amur privet, Amur honeysuckle, American cranberrybush	Eastern redcedar, Osage-orange, Austrian pine, northern whitecedar	Norway spruce, red pine, eastern white pine	---
631C2: Princeton-----	---	Washington hawthorn, Amur privet, Amur honeysuckle, American cranberrybush	Eastern redcedar, Osage-orange, Austrian pine, northern whitecedar	Norway spruce, red pine, eastern white pine	---
631D2: Princeton-----	---	Washington hawthorn, Amur privet, Amur honeysuckle, American cranberrybush	Eastern redcedar, Osage-orange, Austrian pine, northern whitecedar	Norway spruce, red pine, eastern white pine	---
802B: Orthents-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
802E: Orthents-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
844B2: Ava-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---

Table 8.--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
844B2: Blair-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
865: Pits, gravel.					
889A: Bluford-----	---	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
Darmstadt-----	---	Russian-olive, eastern redcedar	Green ash, Siberian elm	---	---
890C2: Ursa-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
890C3: Ursa-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---

Table 8.--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
890C3: Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
890D2: Ursa-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
891: Cisne-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
Piasa-----	---	Russian-olive, eastern redcedar	Green ash, Siberian elm	---	---
896: Wynoose-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
Huey-----	---	Silky dogwood, Russian-olive, eastern redcedar	Green ash, Siberian elm	---	---

Table 8.--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
913F: Hickory-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
Marseilles-----	Siberian peashrub	Washington hawthorn, autumn- olive, eastern redcedar, Amur honeysuckle, radiant crabapple, lilac	Jack pine, Austrian pine, red pine, eastern white pine	---	---
913G: Hickory-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
Marseilles-----	Siberian peashrub	Washington hawthorn, autumn- olive, eastern redcedar, Amur honeysuckle, radiant crabapple, lilac	Jack pine, Austrian pine, red pine, eastern white pine	---	---
927C2: Blair-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
Atlas-----	---	Silky dogwood, Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
967G: Hickory-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak

Table 8.--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
967G: Gosport-----	---	Washington hawthorn, eastern redcedar, Amur privet, Amur honeysuckle, arrowwood, American cranberrybush	Green ash, Osage-orange, Austrian pine	Eastern white pine, pin oak	---
3074: Radford-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3092B: Sarpy-----	---	Siberian peashrub	Washington hawthorn, green ash, eastern redcedar, Osage-orange, white spruce, northern whitecedar, nannyberry viburnum	Black willow	Eastern cottonwood
3225: Holton-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3226: Wirt-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3284A: Tice-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak

Table 8.--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
3288: Petrolia-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
3304A: Landes-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3328: Holly-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
3331A: Haymond-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3331B: Haymond-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3333: Wakeland-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3334: Birds-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak

Table 8.--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
3404: Titus-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
3415: Orion-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3424: Shoals-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3430A: Raddle-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, blue spruce, northern whitecedar	Norway spruce, Austrian pine	Eastern white pine, pin oak
3451: Lawson-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
3603: Blackoar-----	---	Silky dogwood, American plum, common chokecherry	Hackberry, Norway spruce, blue spruce, northern whitecedar	Green ash, Austrian pine, northern red oak	Eastern cottonwood, pin oak
3776+: Comfrey-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak

Table 8.--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
7109: Raccoon-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Norway spruce, Austrian pine, blue spruce, northern whitecedar	Eastern white pine	Pin oak
7134B: Camden-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak
7424: Shoals-----	---	Silky dogwood, Amur privet, Amur honeysuckle, American cranberrybush	White fir, Washington hawthorn, Austrian pine, blue spruce, northern whitecedar	Norway spruce	Eastern white pine, pin oak

Table 9.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
2: Cisne-----	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness
3A: Hoyleton-----	Severe: wetness	Moderate: wetness, percs slowly	Severe: wetness	Moderate: wetness	Moderate: wetness
3B: Hoyleton-----	Severe: wetness	Moderate: wetness, percs slowly	Severe: wetness	Moderate: wetness	Moderate: wetness
5B2: Blair-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Moderate: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness
5B3: Blair-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Moderate: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness
5C2: Blair-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Severe: slope	Severe: erodes easily	Moderate: wetness
5C3: Blair-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Severe: slope	Severe: erodes easily	Moderate: wetness
6B2: Fishhook-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Moderate: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness
7B2: Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty
7B3: Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty
7C2: Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
7D2: Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty, slope
7D3: Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty, slope
8D2: Hickory-----	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
8D3: Hickory-----	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
8F: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
8G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
12: Wynoose-----	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness
13A: Bluford-----	Severe: wetness	Moderate: wetness, percs slowly	Severe: wetness	Moderate: wetness	Moderate: wetness
13B: Bluford-----	Severe: wetness	Moderate: wetness, percs slowly	Severe: wetness	Moderate: wetness	Moderate: wetness
13B2: Bluford-----	Severe: wetness	Moderate: wetness, percs slowly	Severe: wetness	Moderate: wetness	Moderate: wetness
14B: Ava-----	Severe: percs slowly	Severe: percs slowly	Severe: percs slowly	Severe: erodes easily	Moderate: wetness
14C2: Ava-----	Severe: percs slowly	Severe: percs slowly	Severe: slope, percs slowly	Severe: erodes easily	Moderate: wetness
27B2: Miami-----	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope, percs slowly	Severe: erodes easily	Slight

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
27C2: Miami-----	Moderate: percs slowly	Moderate: percs slowly	Severe: slope	Severe: erodes easily	Slight
27C3: Miami-----	Moderate: percs slowly	Moderate: percs slowly	Severe: slope	Severe: erodes easily	Slight
27D2: Miami-----	Moderate: slope, percs slowly	Moderate: slope, percs slowly	Severe: slope	Severe: erodes easily	Moderate: slope
27E: Miami-----	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
27G: Miami-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
48: Ebbert-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
50: Virden-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
109: Raccoon-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
120: Huey-----	Severe: ponding, percs slowly, excess sodium	Severe: ponding, excess sodium, percs slowly	Severe: ponding, percs slowly, excess sodium	Severe: ponding	Severe: excess sodium, ponding
132A: Starks-----	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
132B: Starks-----	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
134A: Camden-----	Slight	Slight	Slight	Severe: erodes easily	Slight
134B: Camden-----	Slight	Slight	Moderate: slope	Severe: erodes easily	Slight
136: Brooklyn-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
138: Shiloh-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
152: Drummer-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
208: Sexton-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
212B: Thebes-----	Slight	Slight	Moderate: slope	Slight	Slight
218: Newberry-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
219A: Millbrook-----	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
234A: Sunbury-----	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness
236A: Sabina-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Moderate: wetness	Moderate: wetness
291B: Xenia-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Moderate: slope, wetness, percs slowly	Severe: erodes easily	Slight
322C2: Russell-----	Slight	Slight	Severe: slope	Severe: erodes easily	Slight
327B2: Fox-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate
327C2: Fox-----	Moderate: small stones	Moderate: small stones	Severe: slope, small stones	Slight	Moderate
330: Peotone-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
353A: Toronto-----	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
408: Aquents-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
496A: Fincastle-----	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
570C2: Martinsville-----	Slight	Slight	Severe: slope	Severe: erodes easily	Slight
581B2: Tamalco-----	Severe: percs slowly, excess sodium	Severe: excess sodium, percs slowly	Severe: percs slowly, excess sodium	Slight	Severe: excess sodium
620A: Darmstadt-----	Severe: wetness, percs slowly, excess sodium	Severe: excess sodium, percs slowly	Severe: wetness, percs slowly	Severe: erodes easily	Severe: excess sodium
621B2: Coulterville----	Severe: wetness	Moderate: wetness, percs slowly	Severe: wetness	Severe: erodes easily	Moderate: wetness
631B2: Princeton-----	Slight	Slight	Moderate: slope	Slight	Slight
631C2: Princeton-----	Slight	Slight	Severe: slope	Slight	Slight
631D2: Princeton-----	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
802B: Orthents-----	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope, percs slowly	Slight	Slight
802E: Orthents-----	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
844B2: Ava-----	Severe: percs slowly	Severe: percs slowly	Severe: percs slowly	Severe: erodes easily	Moderate: wetness
Blair-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Moderate: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness
865: Pits, gravel.					
889A: Bluford-----	Severe: wetness	Moderate: wetness, percs slowly	Severe: wetness	Moderate: wetness	Moderate: wetness
Darmstadt-----	Severe: wetness, percs slowly, excess sodium	Severe: excess sodium, percs slowly	Severe: wetness, percs slowly	Severe: erodes easily	Severe: excess sodium

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
890C2:					
Ursa-----	Moderate: percs slowly	Moderate: percs slowly	Severe: slope	Severe: erodes easily	Slight
Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty
890C3:					
Ursa-----	Moderate: percs slowly	Moderate: percs slowly	Severe: slope	Severe: erodes easily	Slight
Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty
890D2:					
Ursa-----	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty, slope
891:					
Cisne-----	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness
Piasa-----	Severe: ponding, percs slowly, excess sodium	Severe: ponding, excess sodium, percs slowly	Severe: ponding, percs slowly, excess sodium	Severe: ponding	Severe: excess sodium, ponding
896:					
Wynoose-----	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness
Huey-----	Severe: ponding, percs slowly, excess sodium	Severe: ponding, excess sodium, percs slowly	Severe: ponding, percs slowly, excess sodium	Severe: ponding	Severe: excess sodium, ponding
913F:					
Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Marseilles-----	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
913G:					
Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
Marseilles-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
927C2: Blair-----	Moderate: wetness, percs slowly	Moderate: wetness, percs slowly	Severe: slope	Severe: erodes easily	Moderate: wetness
Atlas-----	Severe: wetness, percs slowly	Severe: percs slowly	Severe: slope, wetness, percs slowly	Severe: erodes easily	Moderate: wetness, droughty
967G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
Gosport-----	Severe: slope, percs slowly	Severe: slope, percs slowly	Severe: slope, percs slowly	Severe: slope, erodes easily	Severe: slope
3074: Radford-----	Severe: flooding, wetness	Moderate: flooding, wetness	Severe: wetness, flooding	Moderate: wetness, flooding	Severe: flooding
3092B: Sarpy-----	Severe: flooding	Moderate: flooding	Severe: flooding	Moderate: flooding	Severe: flooding
3225: Holton-----	Severe: flooding, wetness	Moderate: flooding, wetness	Severe: wetness, flooding	Moderate: wetness, flooding	Severe: flooding
3226: Wirt-----	Severe: flooding	Moderate: flooding	Severe: flooding	Moderate: flooding	Severe: flooding
3284A: Tice-----	Severe: flooding	Moderate: flooding, wetness	Severe: flooding	Moderate: wetness, flooding	Severe: flooding
3288: Petrolia-----	Severe: flooding, ponding	Severe: ponding	Severe: ponding, flooding	Severe: ponding	Severe: ponding, flooding
3304A: Landes-----	Severe: flooding	Moderate: flooding	Slight	Moderate: flooding	Severe: flooding
3328: Holly-----	Severe: flooding, wetness	Severe: wetness	Severe: wetness, flooding	Severe: wetness	Severe: wetness, flooding
3331A: Haymond-----	Severe: flooding	Moderate: flooding	Severe: flooding	Moderate: flooding	Severe: flooding
3331B: Haymond-----	Severe: flooding	Moderate: flooding	Severe: flooding	Moderate: flooding	Severe: flooding

Table 9.--Recreational Development--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
3333: Wakeland-----	Severe: flooding, wetness	Moderate: flooding, wetness	Severe: wetness, flooding	Moderate: wetness, flooding	Severe: flooding
3334: Birds-----	Severe: flooding, wetness	Severe: wetness	Severe: wetness, flooding	Severe: wetness	Severe: wetness, flooding
3404: Titus-----	Severe: flooding, ponding	Severe: ponding	Severe: ponding, flooding	Severe: ponding	Severe: ponding, flooding
3415: Orion-----	Severe: flooding, wetness	Moderate: flooding, wetness	Severe: wetness, flooding	Moderate: wetness, flooding	Severe: flooding
3424: Shoals-----	Severe: flooding, wetness	Severe: wetness	Severe: wetness, flooding	Severe: wetness	Severe: wetness, flooding
3430A: Raddle-----	Severe: flooding	Moderate: flooding	Severe: flooding	Moderate: flooding	Severe: flooding
3451: Lawson-----	Severe: flooding, wetness	Moderate: flooding, wetness	Severe: wetness, flooding	Moderate: wetness, flooding	Severe: flooding
3603: Blackoar-----	Severe: flooding, wetness	Severe: wetness	Severe: wetness, flooding	Severe: wetness	Severe: wetness, flooding
3776+: Comfrey-----	Severe: flooding, wetness	Severe: wetness	Severe: wetness, flooding	Severe: wetness	Severe: wetness, flooding
7109: Raccoon-----	Severe: flooding, ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
7134B: Camden-----	Severe: flooding	Slight	Moderate: slope	Severe: erodes easily	Slight
7424: Shoals-----	Severe: flooding, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness

Table 10.--Wildlife Habitat

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
2: Cisne-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
3A: Hoyleton-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
3B: Hoyleton-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
5B2: Blair-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
5B3: Blair-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
5C2: Blair-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
5C3: Blair-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
6B2: Fishhook-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
7B2: Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7B3: Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7C2: Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7D2: Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
7D3: Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8D2: Hickory-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
8D3: Hickory-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
8F: Hickory-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
8G: Hickory-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
12: Wynoose-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
13A: Bluford-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
13B: Bluford-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
13B2: Bluford-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
14B: Ava-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
14C2: Ava-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
27B2: Miami-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
27C2: Miami-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
27C3: Miami-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
27D2: Miami-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
27E: Miami-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
27G: Miami-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
48: Ebbert-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
50: Virden-----	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
109: Raccoon-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
120: Huey-----	Poor	Poor	Poor	Fair	Fair	Good	Good	Poor	Fair	Good

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
132A: Starks-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
132B: Starks-----	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
134A: Camden-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
134B: Camden-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
136: Brooklyn-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
138: Shiloh-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
152: Drummer-----	Fair	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
208: Sexton-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
212B: Thebes-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
218: Newberry-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
219A: Millbrook-----	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
234A: Sunbury-----	Good	Good	Good	Good	Fair	Fair	Fair	Good	Good	Fair
236A: Sabina-----	Good	Good	Good	Good	Fair	Fair	Fair	Good	Good	Fair
291B: Xenia-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
322C2: Russell-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
327B2: Fox-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
327C2: Fox-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
330: Peotone-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
353A: Toronto-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
408: Aquents.										
496A: Fincastle-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
570C2: Martinsville----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
581B2: Tamalco-----	Good	Good	Fair	Good	Good	Poor	Poor	Good	Good	Poor
620A: Darmstadt-----	Fair	Good	Poor	Good	Good	Fair	Fair	Fair	Good	Fair
621B2: Coulterville----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
631B2: Princeton-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
631C2: Princeton-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
631D2: Princeton-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
802B: Orthents-----	Good	Fair	Good	Good	Good	Poor	Poor	Good	Good	Poor
802E: Orthents-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
844B2: Ava-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Blair-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
865: Pits, gravel.										
889A: Bluford-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
Darmstadt-----	Fair	Good	Poor	Good	Good	Fair	Fair	Fair	Good	Fair
890C2: Ursa-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
890C3:										
Ursa-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
890D2:										
Ursa-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
891:										
Cisne-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
Piasa-----	Poor	Fair	Fair	Poor	Poor	Good	Good	Poor	Poor	Good
896:										
Wynoose-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Huey-----	Poor	Poor	Poor	Fair	Fair	Good	Good	Poor	Fair	Good
913F:										
Hickory-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Marseilles-----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
913G:										
Hickory-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Marseilles-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
927C2:										
Blair-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Atlas-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
967G:										
Hickory-----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Gosport-----	Very poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
3074:										
Radford-----	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
3092B:										
Sarpy-----	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
3225:										
Holton-----	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair

Table 10.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
3226: Wirt-----	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
3284A: Tice-----	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3288: Petrolia-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
3304A: Landes-----	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
3328: Holly-----	Fair	Fair	Poor	Fair	Fair	Good	Good	Fair	Fair	Good
3331A: Haymond-----	Good	Good	Fair	Good	Good	Poor	Poor	Good	Good	Poor
3331B: Haymond-----	Good	Good	Fair	Good	Good	Poor	Poor	Good	Good	Poor
3333: Wakeland-----	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3334: Birds-----	Good	Fair	Good	Good	Fair	Good	Good	Good	Good	Good
3404: Titus-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
3415: Orion-----	Good	Good	Good	Good	Good	Good	Fair	Good	Good	Good
3424: Shoals-----	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3430A: Raddle-----	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
3451: Lawson-----	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair
3603: Blackoar-----	Good	Good	Good	Fair	Fair	Good	Fair	Good	Fair	Fair
3776+: Comfrey-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
7109: Raccoon-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
7134B: Camden-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
7424: Shoals-----	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair

Table 11.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
2: Cisne-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, wetness	Severe: wetness
3A: Hoyleton-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, frost action	Moderate: wetness
3B: Hoyleton-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, frost action	Moderate: wetness
5B2: Blair-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell	Severe: low strength, frost action	Moderate: wetness
5B3: Blair-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell	Severe: low strength, frost action	Moderate: wetness
5C2: Blair-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell, slope	Severe: low strength, frost action	Moderate: wetness
5C3: Blair-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell, slope	Severe: low strength, frost action	Moderate: wetness
6B2: Fishhook-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness, shrink-swell	Moderate: wetness, shrink-swell	Severe: low strength, frost action	Moderate: wetness
7B2: Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength	Moderate: wetness, droughty
7B3: Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength	Moderate: wetness, droughty

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
7C2: Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength	Moderate: wetness, droughty
7D2: Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell, slope	Severe: shrink-swell, low strength	Moderate: wetness, droughty, slope
7D3: Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell, slope	Severe: shrink-swell, low strength	Moderate: wetness, droughty, slope
8D2: Hickory-----	Moderate: slope	Moderate: shrink-swell, slope	Moderate: slope, shrink-swell	Severe: slope	Severe: low strength	Moderate: slope
8D3: Hickory-----	Moderate: slope	Moderate: shrink-swell, slope	Moderate: slope, shrink-swell	Severe: slope	Severe: low strength	Moderate: slope
8F: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
8G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
12: Wynoose-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, wetness	Severe: wetness
13A: Bluford-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
13B: Bluford-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
13B2: Bluford-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
14B: Ava-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell	Severe: low strength, frost action	Moderate: wetness

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
14C2: Ava-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell, slope	Severe: low strength, frost action	Moderate: wetness
27B2: Miami-----	Moderate: dense layer	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
27C2: Miami-----	Moderate: dense layer	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell, slope	Severe: low strength	Slight
27C3: Miami-----	Moderate: dense layer	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell, slope	Severe: low strength	Slight
27D2: Miami-----	Moderate: dense layer, slope	Moderate: shrink-swell, slope	Moderate: slope, shrink-swell	Severe: slope	Severe: low strength	Moderate: slope
27E: Miami-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
27G: Miami-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
48: Ebbert-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: low strength, ponding, frost action	Severe: ponding
50: Virden-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: ponding
109: Raccoon-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: low strength, ponding, frost action	Severe: ponding
120: Huey-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: low strength, ponding, frost action	Severe: excess sodium, ponding

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
132A: Starks-----	Severe: cutbanks cave, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
132B: Starks-----	Severe: cutbanks cave, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
134A: Camden-----	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength, frost action	Slight
134B: Camden-----	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength, frost action	Slight
136: Brooklyn-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: ponding
138: Shiloh-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, wetness	Severe: wetness
152: Drummer-----	Severe: cutbanks cave, ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: low strength, ponding, frost action	Severe: ponding
208: Sexton-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, wetness	Severe: wetness
212B: Thebes-----	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength, frost action	Slight
218: Newberry-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, wetness, frost action	Severe: wetness
219A: Millbrook-----	Severe: cutbanks cave, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
234A: Sunbury-----	Severe: wetness	Severe: shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength, frost action	Moderate: wetness
236A: Sabina-----	Severe: wetness	Severe: shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength, frost action	Moderate: wetness
291B: Xenia-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell	Severe: low strength, frost action	Slight
322C2: Russell-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell, slope	Severe: low strength, frost action	Slight
327B2: Fox-----	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength	Moderate
327C2: Fox-----	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell, slope	Severe: low strength	Moderate
330: Peotone-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: ponding
353A: Toronto-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
408: Aquents-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
496A: Fincastle-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
570C2: Martinsville----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
581B2: Tamalco-----	Moderate: wetness	Moderate: shrink-swell	Moderate: wetness, shrink-swell	Moderate: shrink-swell	Severe: low strength, frost action	Severe: excess sodium

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
620A: Darmstadt-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Severe: excess sodium
621B2: Coulterville----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
631B2: Princeton-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
631C2: Princeton-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
631D2: Princeton-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
802B: Orthents-----	Moderate: dense layer, wetness	Moderate: shrink-swell	Moderate: wetness, shrink-swell	Moderate: shrink-swell, slope	Severe: low strength	Slight
802E: Orthents-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
844B2: Ava-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell, slope	Severe: low strength, frost action	Moderate: wetness
Blair-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell, slope	Severe: low strength, frost action	Moderate: wetness
865: Pits, gravel.						
889A: Bluford-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Moderate: wetness
Darmstadt-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: low strength, frost action	Severe: excess sodium
890C2: Ursa-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength	Slight

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
890C2: Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength	Moderate: wetness, droughty
890C3: Ursa-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength	Slight
Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength	Moderate: wetness, droughty
890D2: Ursa-----	Moderate: too clayey, slope	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength	Moderate: slope
Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell, slope	Severe: shrink-swell, low strength	Moderate: wetness, droughty, slope
891: Cisne-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, wetness	Severe: wetness
Piassa-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess sodium, ponding
896: Wynoose-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength, wetness	Severe: wetness
Huey-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: low strength, ponding, frost action	Severe: excess sodium, ponding
913F: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
Marseilles-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope, frost action	Severe: slope
913G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
913G: Marseilles-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope, frost action	Severe: slope
927C2: Blair-----	Severe: wetness	Moderate: wetness, shrink-swell	Severe: wetness	Moderate: wetness, shrink-swell, slope	Severe: low strength, frost action	Moderate: wetness
Atlas-----	Severe: wetness	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: wetness, shrink-swell	Severe: shrink-swell, low strength	Moderate: wetness, droughty
967G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope
Gosport-----	Severe: wetness, slope	Severe: shrink-swell, slope	Severe: slope	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: slope
3074: Radford-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: low strength, flooding, frost action	Severe: flooding
3092B: Sarpy-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
3225: Holton-----	Severe: cutbanks cave, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, frost action	Severe: flooding
3226: Wirt-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
3284A: Tice-----	Severe: wetness	Severe: flooding	Severe: flooding, wetness	Severe: flooding	Severe: low strength, flooding, frost action	Severe: flooding
3288: Petrolia-----	Severe: ponding	Severe: flooding, ponding	Severe: flooding, ponding	Severe: flooding, ponding	Severe: low strength, ponding, flooding	Severe: ponding, flooding
3304A: Landes-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
3328: Holly-----	Severe: cutbanks cave, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, flooding, frost action	Severe: wetness, flooding
3331A: Haymond-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding, frost action	Severe: flooding
3331B: Haymond-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding, frost action	Severe: flooding
3333: Wakeland-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, frost action	Severe: flooding
3334: Birds-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: low strength, wetness, flooding	Severe: wetness, flooding
3404: Titus-----	Severe: ponding	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: ponding, flooding
3415: Orion-----	Severe: cutbanks cave, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: low strength, flooding, frost action	Severe: flooding
3424: Shoals-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, flooding, frost action	Severe: wetness, flooding
3430A: Raddle-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding, frost action	Severe: flooding
3451: Lawson-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, frost action	Severe: flooding
3603: Blackoar-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: low strength, wetness, flooding	Severe: wetness, flooding

Table 11.--Building Site Development--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
3776+: Comfrey-----	Severe: excess humus, wetness	Severe: flooding, wetness, low strength	Severe: flooding, wetness	Severe: flooding, wetness, low strength	Severe: low strength, wetness, flooding	Severe: wetness, flooding
7109: Racoon-----	Severe: cutbanks cave, ponding	Severe: flooding, ponding	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding	Severe: low strength, ponding	Severe: ponding
7134B: Camden-----	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, frost action	Slight
7424: Shoals-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, frost action	Severe: wetness

Table 12.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
2: Cisne-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: wetness
3A: Hoyleton-----	Severe: wetness, percs slowly	Slight	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack, wetness
3B: Hoyleton-----	Severe: wetness, percs slowly	Moderate: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack, wetness
5B2: Blair-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Severe: wetness	Fair: too clayey, wetness
5B3: Blair-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Severe: wetness	Fair: too clayey, wetness
5C2: Blair-----	Severe: wetness, percs slowly	Severe: slope, wetness	Severe: wetness	Severe: wetness	Fair: too clayey, wetness
5C3: Blair-----	Severe: wetness, percs slowly	Severe: slope, wetness	Severe: wetness	Severe: wetness	Fair: too clayey, wetness
6B2: Fishhook-----	Severe: wetness, percs slowly	Moderate: seepage, slope	Severe: wetness, too clayey	Moderate: wetness	Poor: too clayey, hard to pack
7B2: Atlas-----	Severe: wetness, percs slowly	Moderate: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
7B3: Atlas-----	Severe: wetness, percs slowly	Moderate: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
7C2: Atlas-----	Severe: wetness, percs slowly	Severe: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
7D2: Atlas-----	Severe: wetness, percs slowly	Severe: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
7D3: Atlas-----	Severe: wetness, percs slowly	Severe: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
8D2: Hickory-----	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: too clayey, small stones, slope
8D3: Hickory-----	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: too clayey, small stones, slope
8F: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
8G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
12: Wynoose-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: wetness
13A: Bluford-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: wetness
13B: Bluford-----	Severe: wetness, percs slowly	Moderate: slope	Severe: wetness	Severe: wetness	Poor: wetness
13B2: Bluford-----	Severe: wetness, percs slowly	Moderate: slope	Severe: wetness	Severe: wetness	Poor: wetness
14B: Ava-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Moderate: wetness	Fair: too clayey, wetness
14C2: Ava-----	Severe: wetness, percs slowly	Severe: slope, wetness	Severe: wetness	Moderate: wetness	Fair: too clayey, wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
27B2: Miami-----	Severe: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
27C2: Miami-----	Severe: percs slowly	Severe: slope	Slight	Slight	Good
27C3: Miami-----	Severe: percs slowly	Severe: slope	Slight	Slight	Good
27D2: Miami-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
27E: Miami-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
27G: Miami-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
48: Ebbert-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding	Severe: ponding	Poor: hard to pack, ponding
50: Virden-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey	Severe: ponding	Poor: too clayey, hard to pack, ponding
109: Raccoon-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding, thin layer
120: Huey-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess sodium	Severe: ponding	Poor: too clayey, ponding, excess sodium
132A: Starks-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
132B: Starks-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
134A: Camden-----	Slight	Moderate: seepage	Severe: seepage	Slight	Fair: too clayey

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
134B: Camden-----	Slight	Moderate: seepage, slope	Severe: seepage	Slight	Fair: too clayey
136: Brooklyn-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey	Severe: ponding	Poor: too clayey, hard to pack, ponding
138: Shiloh-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack, wetness
152: Drummer-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
208: Sexton-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: wetness
212B: Thebes-----	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: seepage, too sandy
218: Newberry-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: hard to pack, wetness
219A: Millbrook-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
234A: Sunbury-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
236A: Sabina-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
291B: Xenia-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Severe: wetness	Fair: too clayey, wetness
322C2: Russell-----	Moderate: percs slowly	Severe: slope	Moderate: too clayey	Slight	Fair: too clayey

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
327B2: Fox-----	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: seepage, too sandy, small stones
327C2: Fox-----	Severe: poor filter	Severe: seepage, slope	Severe: seepage, too sandy	Severe: seepage	Poor: seepage, too sandy, small stones
330: Peotone-----	Severe: ponding, percs slowly	Slight	Severe: ponding, too clayey	Severe: ponding	Poor: too clayey, hard to pack, ponding
353A: Toronto-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
408: Aquents-----	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
496A: Fincastle-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
570C2: Martinsville----	Slight	Severe: seepage, slope	Severe: seepage	Slight	Fair: thin layer
581B2: Tamalco-----	Severe: wetness, percs slowly	Moderate: slope	Severe: wetness, excess sodium	Severe: wetness	Poor: excess sodium
620A: Darmstadt-----	Severe: wetness, percs slowly	Slight	Severe: wetness, excess sodium	Severe: wetness	Poor: wetness, excess sodium
621B2: Coulterville----	Severe: wetness, percs slowly	Moderate: slope	Severe: wetness	Severe: wetness	Poor: wetness
631B2: Princeton-----	Moderate: percs slowly	Severe: seepage	Severe: seepage	Slight	Good
631C2: Princeton-----	Moderate: percs slowly	Severe: seepage, slope	Severe: seepage	Slight	Good

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
631D2: Princeton-----	Moderate: percs slowly, slope	Severe: seepage, slope	Severe: seepage	Moderate: slope	Fair: slope
802B: Orthents-----	Severe: percs slowly	Moderate: slope, wetness	Severe: wetness	Moderate: wetness	Fair: too clayey
802E: Orthents-----	Severe: percs slowly, slope	Severe: slope	Severe: wetness, slope	Severe: slope	Poor: slope
844B2: Ava-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Moderate: wetness	Fair: too clayey, wetness
Blair-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness	Severe: wetness	Fair: too clayey, wetness
865: Pits, gravel.					
889A: Bluford-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: wetness
Darmstadt-----	Severe: wetness, percs slowly	Slight	Severe: wetness, excess sodium	Severe: wetness	Poor: wetness, excess sodium
890C2: Ursa-----	Severe: percs slowly	Severe: slope	Severe: too clayey	Slight	Poor: too clayey, hard to pack
Atlas-----	Severe: wetness, percs slowly	Severe: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
890C3: Ursa-----	Severe: percs slowly	Severe: slope	Severe: too clayey	Slight	Poor: too clayey, hard to pack
Atlas-----	Severe: wetness, percs slowly	Severe: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
890D2: Ursa-----	Severe: percs slowly	Severe: slope	Severe: too clayey	Moderate: slope	Poor: too clayey, hard to pack
Atlas-----	Severe: wetness, percs slowly	Severe: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
891: Cisne-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: wetness
Piasa-----	Severe: ponding, percs slowly	Slight	Severe: ponding, too clayey, excess sodium	Severe: ponding	Poor: too clayey, hard to pack, ponding
896: Wynoose-----	Severe: wetness, percs slowly	Slight	Severe: wetness	Severe: wetness	Poor: wetness
Huey-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess sodium	Severe: ponding	Poor: too clayey, ponding, excess sodium
913F: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
Marseilles-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
913G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
Marseilles-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
927C2: Blair-----	Severe: wetness, percs slowly	Severe: slope, wetness	Severe: wetness	Severe: wetness	Fair: too clayey, wetness
Atlas-----	Severe: wetness, percs slowly	Severe: slope	Severe: wetness, too clayey	Severe: wetness	Poor: too clayey, hard to pack
967G: Hickory-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
Gosport-----	Severe: depth to rock, wetness, percs slowly	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, slope
3074: Radford-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
3092B: Sarpy-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, seepage, too sandy	Severe: flooding, seepage	Poor: seepage, too sandy
3225: Holton-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: large stones, wetness
3226: Wirt-----	Severe: flooding	Severe: seepage, flooding	Severe: flooding, seepage	Severe: flooding, seepage	Good
3284A: Tice-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: hard to pack
3288: Petrolia-----	Severe: flooding, ponding, percs slowly	Severe: flooding, ponding	Severe: flooding, ponding	Severe: flooding, ponding	Poor: ponding
3304A: Landes-----	Severe: flooding, poor filter	Severe: seepage, flooding	Severe: flooding, seepage, too sandy	Severe: flooding, seepage	Poor: seepage, too sandy
3328: Holly-----	Severe: flooding, wetness, percs slowly	Severe: seepage, flooding, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Poor: wetness
3331A: Haymond-----	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
3331B: Haymond-----	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
3333: Wakeland-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
3334: Birds-----	Severe: flooding, wetness, percs slowly	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness

Table 12.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
3404: Titus-----	Severe: flooding, ponding, percs slowly	Severe: flooding, ponding	Severe: flooding, ponding, too clayey	Severe: flooding, ponding	Poor: too clayey, hard to pack, ponding
3415: Orion-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
3424: Shoals-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
3430A: Raddle-----	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Good
3451: Lawson-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
3603: Blackoar-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
3776+: Comfrey-----	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
7109: Raccoon-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding	Severe: ponding	Poor: ponding
7134B: Camden-----	Moderate: flooding	Moderate: seepage, slope	Severe: seepage	Moderate: flooding	Fair: too clayey
7424: Shoals-----	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness

Table 13.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
2: Cisne-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
3A: Hoyleton-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
3B: Hoyleton-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
5B2: Blair-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
5B3: Blair-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
5C2: Blair-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
5C3: Blair-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
6B2: Fishhook-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, thin layer
7B2: Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
7B3: Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
7C2: Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
7D2: Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
7D3: Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
8D2: Hickory-----	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: small stones
8D3: Hickory-----	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: small stones
8F: Hickory-----	Fair: low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
8G: Hickory-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
12: Wynoose-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
13A: Bluford-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
13B: Bluford-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
13B2: Bluford-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
14B: Ava-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
14C2: Ava-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
27B2: Miami-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim, too clayey
27C2: Miami-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim, too clayey
27C3: Miami-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim, too clayey
27D2: Miami-----	Fair: shrink-swell	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim, too clayey, slope

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
27E: Miami-----	Fair: shrink-swell, slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
27G: Miami-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
48: Ebbert-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
50: Viriden-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
109: Racoon-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
120: Huey-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness, excess sodium
132A: Starks-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
132B: Starks-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
134A: Camden-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
134B: Camden-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
136: Brooklyn-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
138: Shiloh-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
152: Drummer-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
208: Sexton-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
212B: Thebes-----	Good	Probable	Improbable: too sandy	Fair: area reclaim, too clayey
218: Newberry-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
219A: Millbrook-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
234A: Sunbury-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
236A: Sabina-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
291B: Xenia-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
322C2: Russell-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
327B2: Fox-----	Good	Probable	Probable	Poor: small stones, area reclaim
327C2: Fox-----	Good	Probable	Probable	Poor: small stones, area reclaim
330: Peotone-----	Poor: low strength, wetness, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: wetness
353A: Toronto-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Good
408: Aquents-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
496A: Fincastle-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
570C2: Martinsville----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
581B2: Tamalco-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: thin layer, excess sodium
620A: Darmstadt-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
621B2: Coulterville----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
631B2: Princeton-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
631C2: Princeton-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
631D2: Princeton-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
802B: Orthents-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim
802E: Orthents-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, slope
844B2: Ava-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Blair-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
865: Pits, gravel.				
889A: Bluford-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Darmstadt-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
890C2: Ursa-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
890C3:				
Ursa-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
890D2:				
Ursa-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
891:				
Cisne-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
Piasa-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness, excess sodium
896:				
Wynoose-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
Huey-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness, excess sodium
913F:				
Hickory-----	Fair: low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Marseilles-----	Poor: depth to rock, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
913G:				
Hickory-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Marseilles-----	Poor: depth to rock, low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
927C2:				
Blair-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, small stones
Atlas-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
967G: Hickory-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Gosport-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
3074: Radford-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Good
3092B: Sarpy-----	Good	Probable	Improbable: too sandy	Poor: too sandy
3225: Holton-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: large stones, area reclaim
3226: Wirt-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim
3284A: Tice-----	Fair: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
3288: Petrolia-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
3304A: Landes-----	Good	Probable	Improbable: too sandy	Fair: too sandy, small stones, thin layer
3328: Holly-----	Poor: wetness	Probable	Probable	Poor: wetness
3331A: Haymond-----	Good	Improbable: excess fines	Improbable: excess fines	Good
3331B: Haymond-----	Good	Improbable: excess fines	Improbable: excess fines	Good
3333: Wakeland-----	Fair: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Good

Table 13.--Construction Materials--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
3334: Birds-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
3404: Titus-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness
3415: Orion-----	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer
3424: Shoals-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
3430A: Raddle-----	Fair: low strength, thin layer	Improbable: excess fines	Improbable: excess fines	Good
3451: Lawson-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Good
3603: Blackoar-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
3776+: Comfrey-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
7109: Raccoon-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
7134B: Camden-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
7424: Shoals-----	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness

Table 14.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation.)

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
2: Cisne-----	Slight	Severe: wetness	Severe: no water	Percs slowly, frost action	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
3A: Hoyleton-----	Slight	Severe: thin layer, wetness	Severe: slow refill	Percs slowly, frost action	Wetness, percs slowly	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
3B: Hoyleton-----	Moderate: slope	Severe: thin layer, wetness	Severe: slow refill	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
5B2: Blair-----	Moderate: slope	Severe: wetness	Severe: slow refill	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Erodes easily
5B3: Blair-----	Moderate: slope	Severe: wetness	Severe: slow refill	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Erodes easily
5C2: Blair-----	Moderate: slope	Severe: wetness	Severe: slow refill	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Erodes easily
5C3: Blair-----	Moderate: slope	Severe: wetness	Severe: slow refill	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Erodes easily
6B2: Fishhook-----	Moderate: seepage, slope	Moderate: hard to pack, wetness	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness	Erodes easily, rooting depth
7B2: Atlas-----	Moderate: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Erodes easily, wetness	Wetness, erodes easily

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
7B3: Atlas-----	Moderate: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Erodes easily, wetness	Wetness, erodes easily
7C2: Atlas-----	Moderate: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Erodes easily, wetness	Wetness, erodes easily
7D2: Atlas-----	Severe: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Slope, erodes easily, wetness	Wetness, slope, erodes easily
7D3: Atlas-----	Severe: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Slope, erodes easily, wetness	Wetness, slope, erodes easily
8D2: Hickory-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
8D3: Hickory-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
8F: Hickory-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
8G: Hickory-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
12: Wynoose-----	Slight	Severe: wetness	Severe: no water	Percs slowly, frost action	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
13A: Bluford-----	Slight	Severe: piping	Severe: no water	Percs slowly, frost action	Wetness, percs slowly	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
13B: Bluford-----	Moderate: slope	Severe: piping	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
13B2: Bluford-----	Moderate: slope	Severe: piping	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
14B: Ava-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness	Erodes easily, rooting depth
14C2: Ava-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness	Erodes easily, rooting depth
27B2: Miami-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, percs slowly	Erodes easily	Erodes easily, rooting depth
27C2: Miami-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, percs slowly	Erodes easily	Erodes easily, rooting depth
27C3: Miami-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, percs slowly	Erodes easily	Erodes easily, rooting depth
27D2: Miami-----	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, percs slowly	Slope, erodes easily	Slope, erodes easily, rooting depth
27E: Miami-----	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, percs slowly	Slope, erodes easily	Slope, erodes easily, rooting depth

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
27G: Miami-----	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, percs slowly	Slope, erodes easily	Slope, erodes easily, rooting depth
48: Ebbert-----	Slight	Severe: ponding	Severe: slow refill	Ponding, percs slowly, frost action	Ponding, percs slowly	Erodes easily, ponding, percs slowly	Wetness, erodes easily, percs slowly
50: Viriden-----	Slight	Severe: ponding	Severe: slow refill	Ponding, frost action	Ponding	Ponding	Wetness
109: Racoon-----	Slight	Severe: piping, ponding	Severe: slow refill	Ponding, percs slowly, frost action	Ponding, percs slowly, erodes easily	Erodes easily, ponding	Wetness, erodes easily, percs slowly
120: Huey-----	Slight	Severe: ponding, excess sodium	Severe: no water	Ponding, percs slowly, frost action	Ponding, droughty, percs slowly	Erodes easily, ponding, percs slowly	Wetness, excess sodium, erodes easily
132A: Starks-----	Moderate: seepage	Severe: thin layer, wetness	Severe: cutbanks cave	Frost action	Wetness, erodes easily	Erodes easily, wetness	Wetness, erodes easily
132B: Starks-----	Moderate: seepage, slope	Severe: thin layer, wetness	Severe: cutbanks cave	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Wetness, erodes easily
134A: Camden-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Erodes easily
134B: Camden-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily
136: Brooklyn-----	Slight	Severe: thin layer, ponding	Severe: slow refill	Ponding, percs slowly, frost action	Ponding, percs slowly, erodes easily	Erodes easily, ponding, percs slowly	Wetness, erodes easily, percs slowly

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
138: Shiloh-----	Slight	Severe: wetness	Severe: slow refill	Frost action	Wetness	Wetness	Wetness
152: Drummer-----	Moderate: seepage	Severe: ponding	Severe: cutbanks cave	Ponding, frost action	Ponding	Ponding	Wetness
208: Sexton-----	Slight	Severe: wetness	Severe: slow refill	Percs slowly, frost action	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
212B: Thebes-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, rooting depth, erodes easily	Erodes easily, too sandy	Erodes easily, rooting depth
218: Newberry-----	Slight	Severe: wetness	Severe: slow refill	Percs slowly, frost action	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
219A: Millbrook-----	Moderate: seepage	Severe: wetness	Severe: cutbanks cave	Frost action	Wetness	Erodes easily, wetness	Wetness, erodes easily
234A: Sunbury-----	Moderate: seepage	Severe: wetness	Severe: slow refill	Frost action	Wetness	Erodes easily, wetness	Erodes easily
236A: Sabina-----	Slight	Severe: wetness	Severe: slow refill	Frost action	Wetness, erodes easily	Erodes easily, wetness	Erodes easily
291B: Xenia-----	Moderate: seepage, slope	Moderate: thin layer, wetness	Severe: slow refill	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Erodes easily
322C2: Russell-----	Moderate: seepage, slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
327B2: Fox-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Erodes easily, too sandy	Erodes easily, droughty
327C2: Fox-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Erodes easily, too sandy	Erodes easily, droughty
330: Peotone-----	Slight	Severe: ponding	Severe: slow refill	Ponding, frost action	Ponding	Ponding	Wetness
353A: Toronto-----	Moderate: seepage	Severe: wetness	Severe: slow refill	Frost action	Wetness	Wetness	Wetness
408: Aquments-----	Slight	Severe: ponding	Slight	Ponding	Ponding	Ponding	Wetness
496A: Fincastle-----	Moderate: seepage	Severe: wetness	Severe: slow refill	Frost action	Wetness, erodes easily	Erodes easily, wetness	Wetness, erodes easily
570C2: Martinsville----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
581B2: Tamalco-----	Moderate: slope	Severe: excess sodium	Severe: slow refill	Percs slowly, frost action, slope	Slope, wetness	Erodes easily, wetness, percs slowly	Excess sodium, erodes easily
620A: Darmstadt-----	Slight	Severe: excess sodium	Severe: no water	Percs slowly, frost action	Wetness, percs slowly	Erodes easily, wetness	Wetness, excess sodium
621B2: Coulterville----	Moderate: slope	Severe: piping	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness	Wetness, erodes easily
631B2: Princeton-----	Severe: seepage	Moderate: thin layer, piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	Favorable

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
631C2: Princeton-----	Severe: seepage	Moderate: thin layer, piping	Severe: no water	Deep to water	Slope, soil blowing	Soil blowing	Favorable
631D2: Princeton-----	Severe: seepage, slope	Moderate: thin layer, piping	Severe: no water	Deep to water	Slope, soil blowing	Slope, soil blowing	Slope
802B: Orthents-----	Moderate: slope	Moderate: piping	Severe: slow refill	Deep to water	Slope, rooting depth, erodes easily	Erodes easily	Erodes easily, rooting depth
802E: Orthents-----	Severe: slope	Moderate: piping	Severe: slow refill	Deep to water	Slope, rooting depth, erodes easily	Slope, erodes easily	Slope, erodes easily, rooting depth
844B2: Ava-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, percs slowly	Erodes easily, wetness	Erodes easily, rooting depth
Blair-----	Moderate: slope	Severe: wetness	Severe: slow refill	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Erodes easily
865: Pits, gravel.							
889A: Bluford-----	Slight	Severe: piping	Severe: no water	Percs slowly, frost action	Wetness, percs slowly	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
Darmstadt-----	Slight	Severe: excess sodium	Severe: no water	Percs slowly, frost action	Wetness, percs slowly	Erodes easily, wetness	Wetness, excess sodium
890C2: Ursa-----	Moderate: slope	Moderate: hard to pack	Severe: no water	Deep to water	Slope, percs slowly	Erodes easily, percs slowly	Erodes easily
Atlas-----	Moderate: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Erodes easily, wetness	Wetness, erodes easily

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
890C3:							
Ursa-----	Moderate: slope	Moderate: hard to pack	Severe: no water	Deep to water	Slope, percs slowly	Erodes easily, percs slowly	Erodes easily
Atlas-----	Moderate: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Erodes easily, wetness	Wetness, erodes easily
890D2:							
Ursa-----	Severe: slope	Moderate: hard to pack	Severe: no water	Deep to water	Slope, percs slowly	Slope, erodes easily, percs slowly	Slope, erodes easily
Atlas-----	Severe: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Slope, erodes easily, wetness	Wetness, slope, erodes easily
891:							
Cisne-----	Slight	Severe: wetness	Severe: no water	Percs slowly, frost action	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
Piasa-----	Slight	Severe: hard to pack, ponding, excess sodium	Severe: no water	Ponding, percs slowly, frost action	Ponding, percs slowly, erodes easily	Erodes easily, ponding, percs slowly	Wetness, excess sodium, erodes easily
896:							
Wynoose-----	Slight	Severe: wetness	Severe: no water	Percs slowly, frost action	Wetness, percs slowly, erodes easily	Erodes easily, wetness, percs slowly	Wetness, erodes easily, percs slowly
Huey-----	Slight	Severe: ponding, excess sodium	Severe: no water	Ponding, percs slowly, frost action	Ponding, droughty, percs slowly	Erodes easily, ponding, percs slowly	Wetness, excess sodium, erodes easily
913F:							
Hickory-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
Marseilles-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
913G:							
Hickory-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
913G: Marseilles-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
927C2: Blair-----	Moderate: slope	Severe: wetness	Severe: slow refill	Frost action, slope	Slope, wetness, erodes easily	Erodes easily, wetness	Erodes easily
Atlas-----	Moderate: slope	Severe: hard to pack	Severe: no water	Percs slowly, frost action, slope	Slope, wetness, droughty	Erodes easily, wetness	Wetness, erodes easily
967G: Hickory-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, erodes easily	Slope, erodes easily	Slope, erodes easily
Gosport-----	Severe: slope	Slight	Severe: no water	Percs slowly, depth to rock, slope	Slope, wetness, percs slowly	Slope, depth to rock, erodes easily	Slope, erodes easily, depth to rock
3074: Radford-----	Moderate: seepage	Severe: wetness	Moderate: slow refill	Flooding, frost action	Wetness, flooding	Wetness	Wetness
3092B: Sarpy-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing	Droughty
3225: Holton-----	Moderate: seepage	Severe: piping, wetness	Severe: cutbanks cave	Flooding, large stones, frost action	Wetness, erodes easily, flooding	Large stones, erodes easily, wetness	Large stones, wetness, erodes easily
3226: Wirt-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Flooding	Erodes easily	Erodes easily
3284A: Tice-----	Moderate: seepage	Severe: wetness	Moderate: slow refill	Flooding, frost action	Wetness	Wetness	Favorable
3288: Petrolia-----	Slight	Severe: ponding	Severe: slow refill	Ponding, flooding, frost action	Ponding, flooding	Ponding	Wetness

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
3304A: Landes-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Favorable	Too sandy	Favorable
3328: Holly-----	Severe: seepage	Severe: piping, wetness	Severe: slow refill, cutbanks cave	Flooding, frost action	Wetness, flooding	Wetness	Wetness
3331A: Haymond-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding	Erodes easily	Erodes easily
3331B: Haymond-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily, flooding	Erodes easily	Erodes easily
3333: Wakeland-----	Moderate: seepage	Severe: piping, wetness	Moderate: slow refill	Flooding, frost action	Wetness, erodes easily, flooding	Erodes easily, wetness	Wetness, erodes easily
3334: Birds-----	Slight	Severe: wetness	Severe: slow refill	Flooding, frost action	Wetness, erodes easily, flooding	Erodes easily, wetness	Wetness, erodes easily
3404: Titus-----	Slight	Severe: ponding	Severe: slow refill	Ponding, percs slowly, flooding	Ponding, percs slowly	Ponding, percs slowly	Wetness, rooting depth, percs slowly
3415: Orion-----	Moderate: seepage	Severe: piping, wetness	Severe: cutbanks cave	Flooding, frost action	Wetness	Erodes easily, wetness	Wetness, erodes easily
3424: Shoals-----	Moderate: seepage	Severe: piping, wetness	Moderate: slow refill	Flooding, frost action	Wetness, erodes easily, flooding	Erodes easily, wetness	Wetness, erodes easily
3430A: Raddle-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Flooding	Erodes easily	Erodes easily

Table 14.--Water Management--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
3451: Lawson-----	Moderate: seepage	Severe: wetness	Moderate: slow refill	Flooding, frost action	Wetness, flooding	Erodes easily, wetness	Wetness, erodes easily
3603: Blackoar-----	Moderate: seepage	Severe: piping, wetness	Moderate: slow refill	Flooding, frost action	Wetness, flooding	Erodes easily, wetness	Wetness, erodes easily
3776+: Comfrey-----	Moderate: seepage	Severe: wetness	Moderate: slow refill	Flooding, frost action	Wetness, flooding	Wetness	Wetness
7109: Raccoon-----	Slight	Severe: thin layer, ponding	Severe: slow refill, cutbanks cave	Ponding, percs slowly	Ponding, percs slowly, erodes easily	Erodes easily, ponding, percs slowly	Wetness, erodes easily, percs slowly
7134B: Camden-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, erodes easily	Erodes easily	Erodes easily
7424: Shoals-----	Moderate: seepage	Severe: piping, wetness	Moderate: slow refill	Frost action	Wetness, erodes easily	Erodes easily, wetness	Wetness, erodes easily

Table 15.--Engineering Index Properties

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
		In			Pct	Pct					Pct	
2: Cisne-----	0-9	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	90-100	25-35	5-10
	9-20	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	20-54	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	90-100	90-100	45-60	20-35
	54-60	Silty clay loam, loam silt loam	CL	A-6, A-7	0	0-5	100	90-100	70-95	50-90	30-50	15-30
3A: Hoyleton-----	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	5-15
	8-12	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	12-45	Silty clay loam, silty clay	CL, CH	A-7	0	0	100	100	95-100	85-100	40-55	20-30
	45-60	Silt loam, loam, silty clay loam	CL, CL-ML	A-6, A-7, A-4	0	0	100	95-100	90-100	70-95	20-45	5-25
3B: Hoyleton-----	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	5-15
	9-15	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	15-45	Silty clay loam, silty clay	CL, CH	A-7	0	0	100	100	95-100	85-100	40-55	20-30
	45-60	Silt loam, loam, silty clay loam	CL, CL-ML	A-6, A-7, A-4	0	0	100	95-100	90-100	70-95	20-45	5-25
5B2: Blair-----	0-6	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	90-100	85-95	20-35	5-15
	6-30	Silty clay loam, clay loam, loam	CL	A-6, A-7	0	0-5	95-100	90-100	90-100	80-100	30-50	15-30
	30-60	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	85-100	70-95	30-50	15-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
5B3: Blair-----	0-4	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	90-100	85-95	20-35	5-15
	4-34	Silty clay loam, clay loam, loam	CL	A-6, A-7	0	0-5	95-100	90-100	90-100	80-100	30-50	15-30
	34-50	Silty clay loam, clay loam, loam	CL	A-6, A-7	0	0-5	95-100	90-100	85-100	70-95	30-50	15-30
	50-60	Clay loam, loam, silt loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-90	20-40	10-25
5C2: Blair-----	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	90-100	85-95	20-35	5-15
	8-20	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	90-100	80-100	30-50	15-30
	20-52	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	85-100	70-95	30-50	15-30
	52-60	Sandy clay loam, clay loam, silt loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-90	20-40	10-25
5C3: Blair-----	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	90-100	85-95	20-35	5-15
	7-28	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	90-100	80-100	30-50	15-30
	28-58	Silty clay loam, clay loam, loam	CL	A-6, A-7	0	0-5	95-100	90-100	85-100	70-95	30-50	15-30
	58-60	Silty clay loam, clay loam, loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-90	20-40	10-25
6B2: Fishhook-----	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	5-23	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	35-50	10-25
	23-60	Clay loam, silty clay, silty clay loam	CH, CL	A-7	0-1	0-5	95-100	90-100	80-90	75-85	40-60	20-35

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
7B2: Atlas-----	0-8	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-95	25-35	5-15
	8-30	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	30-56	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	56-60	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-100	90-100	65-95	35-55	20-30
7B3: Atlas-----	0-4	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	75-100	40-60	25-40
	4-9	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	9-50	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	50-60	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-100	90-100	65-95	35-55	20-30
7C2: Atlas-----	0-6	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-95	25-35	5-15
	6-16	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	16-45	Silty clay loam, silty clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	45-60	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-100	90-100	65-95	35-55	20-30
7D2: Atlas-----	0-6	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-95	25-35	5-15
	6-11	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	11-35	Silty clay loam, silty clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	35-60	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-100	90-100	65-95	35-55	20-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
7D3: Atlas-----	0-4	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	75-100	40-60	25-40
	4-11	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	11-34	Silty clay loam, silty clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	34-60	Clay loam, silty clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-100	90-100	65-95	35-55	20-30
8D2: Hickory-----	0-10	Loam	CL	A-6, A-4	0	0-5	95-100	90-100	90-100	75-95	20-35	8-15
	10-49	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	49-60	Sandy loam, loam, gravelly clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
8D3: Hickory-----	0-3	Clay loam	CL	A-6, A-7	0	0-5	95-100	90-100	80-95	70-85	30-50	15-30
	3-20	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	20-60	Sandy loam, loam, gravelly clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
8F: Hickory-----	0-10	Loam	CL, ML, CL-ML	A-6, A-4	0	0-5	95-100	90-100	90-100	75-95	20-35	3-15
	10-45	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	45-60	Sandy loam, loam, gravelly clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
8G: Hickory-----	0-16	Loam	CL, ML, CL-ML	A-6, A-4	0	0-5	95-100	90-100	90-100	75-95	20-35	3-15
	16-48	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	48-60	Sandy loam, loam, gravelly clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
12: Wynoose-----	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	20-35	5-15
	8-16	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	15-30	2-15
	16-52	Silty clay, silty clay loam	CL, CH	A-7	0	0	100	100	95-100	85-95	40-55	20-35
	52-60	Silt loam, clay loam, silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	70-90	30-45	15-25
13A: Bluford-----	0-9	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	95-100	90-100	20-35	5-15
	9-16	Silt loam	ML, CL-ML, CL	A-4	0	0	100	95-100	95-100	90-100	20-30	NP-10
	16-35	Silty clay loam, silty clay	CL	A-7, A-6	0	0	100	95-100	95-100	90-100	35-50	15-30
	35-60	Silt loam, loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0-5	100	95-100	90-100	70-90	25-40	5-20
13B: Bluford-----	0-8	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	95-100	90-100	20-35	5-15
	8-12	Silt loam	ML, CL-ML, CL	A-4	0	0	100	95-100	95-100	90-100	20-30	NP-10
	12-36	Silty clay loam, silty clay	CL	A-7, A-6	0	0	100	95-100	95-100	90-100	35-50	15-30
	36-60	Silt loam, loam, clay loam	CL-ML, CL	A-6, A-4	0	0-5	100	95-100	90-100	70-90	25-40	5-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
13B2: Bluford-----	0-3	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	95-100	90-100	20-35	5-15
	3-14	Silt loam	ML, CL-ML, CL	A-4	0	0	100	95-100	95-100	90-100	20-30	NP-10
	14-50	Silty clay loam, silty clay	CL	A-7, A-6	0	0	100	95-100	95-100	90-100	35-50	15-30
	50-60	Silt loam, loam, clay loam	CL-ML, CL	A-6, A-4	0	0-5	100	95-100	90-100	70-90	25-40	5-20
14B: Ava-----	0-11	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	25-35	5-15
	11-30	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-20
	30-60	Silty clay loam, loam, clay loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	95-100	90-100	80-90	20-45	5-20
14C2: Ava-----	0-7	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	25-35	5-15
	7-45	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-20
	45-60	Silty clay loam, loam, clay loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	95-100	90-100	80-90	20-45	5-20
27B2: Miami-----	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	100	95-100	80-100	50-90	15-30	3-10
	7-28	Clay loam, silty clay loam	CL, SC	A-6	0	0	90-100	85-100	70-95	40-95	30-40	15-25
	28-38	Loam	CL, SC	A-4, A-6	0	0-3	85-100	85-100	70-90	40-90	25-35	8-15
	38-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	85-100	70-90	45-70	20-40	5-20
27C2: Miami-----	0-5	Loam	CL, CL-ML, ML	A-4	0	0	100	95-100	80-100	50-90	15-30	3-10
	5-26	Clay loam, silty clay loam	CL, SC	A-6	0	0	90-100	85-100	70-95	40-95	30-40	15-25
	26-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	85-100	70-90	45-70	20-40	5-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
27C3: Miami-----	0-5	Loam	CL, CL-ML, ML	A-4	0	0	100	95-100	80-100	50-90	15-30	3-10
	5-24	Clay loam, silty clay loam	CL, SC	A-6	0	0	90-100	85-100	70-95	40-95	30-40	15-25
	24-36	Loam	CL, SC	A-4, A-6	0	0-3	85-100	85-100	70-90	40-90	25-35	8-15
	36-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	85-100	70-90	45-70	20-40	5-20
27D2: Miami-----	0-8	Loam	CL, CL-ML, ML	A-4	0	0	100	95-100	80-100	50-90	15-30	3-10
	8-35	Clay loam, silty clay loam	CL, SC	A-6	0	0	90-100	85-100	70-95	40-95	30-40	15-25
	35-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	85-100	70-90	45-70	20-40	5-20
27E: Miami-----	0-9	Loam	CL, CL-ML, ML	A-4	0	0	100	95-100	80-100	50-90	15-30	3-10
	9-31	Clay loam, silty clay loam	CL, SC	A-6	0	0	90-100	85-100	70-95	40-95	30-40	15-25
	31-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	85-100	70-90	45-70	20-40	5-20
27G: Miami-----	0-6	Loam	CL, CL-ML, ML	A-4	0	0	100	95-100	80-100	50-90	15-30	3-10
	6-24	Clay loam, silty clay loam	CL, SC	A-6	0	0	90-100	85-100	70-95	40-95	30-40	15-25
	24-34	Loam	CL, SC	A-4, A-6	0	0-3	85-100	85-100	70-90	40-90	25-35	8-15
	34-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-3	85-100	85-100	70-90	45-70	20-40	5-20
48: Ebbert-----	0-12	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-15
	12-18	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	7-15
	18-52	Silty clay loam, silt loam	CL, CH	A-7	0	0	100	100	95-100	85-100	40-55	25-35
	52-60	Silty clay loam, clay loam, loam	CL	A-7, A-6	0	0	100	95-100	95-100	80-100	30-50	10-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
		In			Pct	Pct					Pct	
50: Virden-----	0-11	Silt loam	CL	A-7, A-6	0	0	100	100	95-100	95-100	30-45	10-20
	11-57	Silty clay, silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	95-100	40-55	15-30
	57-60	Silty clay loam, silt loam	CL	A-7, A-6	0	0	100	100	95-100	90-100	30-45	10-20
109: Raccoon-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-40	8-20
	8-26	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-40	5-20
	26-42	Silty clay loam	CL, CH	A-6, A-7	0	0	100	100	95-100	85-100	35-60	15-30
	42-51	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	35-50	15-30
	51-60	Silty clay loam, silt loam	CL, ML, CL-ML	A-4, A-6, A-7	0	0	95-100	90-100	75-100	50-100	25-45	3-20
120: Huey-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-95	20-35	3-15
	9-12	Silt, silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	90-100	85-95	15-30	3-15
	12-42	Silt loam, silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-50	15-30
	42-60	Loam, silt loam, clay loam	CL	A-6	0	0	95-100	90-100	80-95	65-90	20-35	10-20
132A: Starks-----	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-100	20-35	4-15
	11-29	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	15-25
	29-46	Loam, silty clay loam, sandy loam	CL, SC, CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-100	80-95	40-80	25-40	6-17
	46-60	Stratified loamy sand to silt loam	SM, SC, ML, CL	A-2, A-4, A-6	0-1	0-5	90-100	80-95	40-90	30-60	0-30	NP-15
132B: Starks-----	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-100	20-35	4-15
	14-32	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	15-25
	32-60	Loam, silty clay loam, sandy loam	CL, SC, CL-ML, SC-SM	A-4, A-6	0	0	95-100	90-100	80-95	40-80	25-40	6-17

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit index	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
134A: Camden-----	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	8-35	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	35-46	Clay loam, sandy clay loam, silt loam	ML, SC, SM, CL	A-2, A-4, A-6	0	0-5	90-100	65-85	45-85	25-60	20-40	3-15
	46-60	Stratified gravelly sandy loam to silt loam	SM, SC, ML, CL	A-2, A-4	0	0-5	90-100	60-85	40-70	15-45	0-25	3-10
134B: Camden-----	0-10	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	10-30	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	30-50	Clay loam, sandy loam, gravelly sandy clay loam	ML, SC, SM, CL	A-2, A-4, A-6	0	0-5	90-100	65-85	45-85	25-60	20-40	3-15
	50-60	Stratified sand to silt loam	SM, SC, ML, CL	A-2, A-4	0	0-5	90-100	60-85	40-70	15-45	0-25	3-10
136: Brooklyn-----	0-9	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	25-35	5-15
	9-17	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	17-45	Silty clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	95-100	45-60	25-40
	45-60	Stratified gravelly sandy loam to silty clay loam	CL, CL-ML, SC-SM, SC	A-4, A-2, A-6	0-1	0-5	75-100	65-90	60-90	30-70	15-38	5-20
138: Shiloh-----	0-18	Silty clay loam	CL	A-7	0	0	100	100	95-100	90-100	40-50	15-25
	18-43	Silty clay, silty clay loam	CL, CH	A-7	0	0	100	100	95-100	90-100	40-65	15-40
	43-60	Silty clay loam, silty clay, silt loam	CL	A-7, A-6	0	0	100	100	95-100	90-100	30-50	15-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
152: Drummer-----	0-20	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	85-95	25-40	5-15
	20-50	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	30-50	15-30
	50-60	Stratified loamy sand to silty clay loam	SC, CL	A-4, A-6	0	0-5	95-100	85-95	75-95	45-80	20-35	7-20
208: Sexton-----	0-21	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	4-15
	21-44	Silty clay loam	CL	A-7, A-6	0	0	100	100	95-100	90-100	35-50	15-30
	44-60	Stratified fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	90-100	60-90	50-90	25-45	4-20
212B: Thebes-----	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-40	8-20
	11-27	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	90-100	30-45	15-30
	27-33	Loam, sandy loam, sandy clay loam	SM, SC, CL, ML	A-4, A-6	0	0	100	100	90-100	40-70	15-30	NP-13
	33-70	Sandy loam, sand, silt loam	SP, SM, SP-SM	A-2, A-3	0	0	100	90-100	75-95	4-35	0-20	NP-4
218: Newberry-----	0-9	Silt loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-20
	9-20	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	30-40	8-15
	20-55	Silty clay loam	CL, CH	A-7, A-6	0	0	100	100	95-100	85-100	35-55	15-30
	55-60	Silty clay loam, silt loam, loam	CL	A-7, A-6	0	0-5	95-100	90-100	75-100	50-90	30-45	15-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
219A: Millbrook-----	0-8	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	85-100	20-35	3-15
	8-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	14-32	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-25
	32-52	Clay loam, loam, sandy loam	SC, CL	A-6, A-7	0-1	0-5	95-100	90-100	70-90	40-80	25-50	10-25
	52-60	Stratified loamy sand to clay loam	SM, SC, CL, ML	A-4, A-6, A-2	0-1	0-5	95-100	90-100	70-95	30-80	0-30	NP-15
234A: Sunbury-----	0-15	Silt loam	ML, CL	A-4, A-6, A-7	0	0	100	100	95-100	90-100	30-45	8-15
	15-41	Silty clay loam, silty clay	CL, CH	A-7, A-6	0	0	100	100	95-100	85-100	35-60	20-35
	41-60	Loam, silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0-2	98-100	95-100	90-100	50-95	20-45	5-30
236A: Sabina-----	0-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	12-54	Silty clay loam, silty clay	CL, CH	A-7	0	0	100	100	95-100	85-100	40-60	20-40
	54-60	Clay loam, silty clay loam, loam	CL, CL-ML	A-4, A-6, A-7	0-1	0-5	95-100	85-100	70-100	55-75	20-50	5-30
291B: Xenia-----	0-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	20-35	5-15
	12-32	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	32-45	Clay loam, loam	CL	A-6, A-7	0	0-5	90-100	85-95	70-95	50-80	30-45	10-25
	45-60	Loam	CL, CL-ML	A-4, A-6	0	0-5	90-95	85-95	65-95	50-75	20-30	5-15
322C2: Russell-----	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	20-35	5-15
	6-30	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	30-60	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-95	80-90	60-80	35-45	15-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
327B2: Fox-----	0-7	Gravelly sandy loam, sandy loam	SM, SC-SM	A-2, A-4, A-1	0	0-3	75-95	65-85	40-70	20-45	0-25	2-7
	7-32	Gravelly sandy clay loam, loam, clay loam	CL, SC	A-2, A-6, A-7	0-1	0-5	55-100	55-100	30-95	15-80	25-45	10-25
	32-60	Very gravelly sand, sand	SP, SM, GP, GM	A-1, A-2, A-3	0-3	0-10	30-100	30-100	15-95	2-20	0-14	NP
327C2: Fox-----	0-6	Gravelly sandy loam	SM, SC-SM	A-2, A-4, A-1	0	0-3	75-85	65-75	40-60	20-40	0-25	2-7
	6-37	Gravelly sandy clay loam, sandy loam, clay loam	CL, SC	A-2, A-6, A-7	0-1	0-5	55-100	55-100	30-95	15-80	25-45	10-25
	37-60	Sand, loamy sand, gravelly sand	SP, SM, GP, GM	A-1, A-2, A-3	0-3	0-10	30-100	30-100	15-95	2-20	0-14	NP
330: Peotone-----	0-15	Silty clay loam	CH, CL	A-7	0	0	100	95-100	95-100	80-100	40-65	15-35
	15-40	Silty clay loam, silty clay	CH, CL	A-7	0	0-5	100	95-100	90-100	85-100	40-70	15-40
	40-60	Silty clay loam, silt loam, silty clay	CL, CH, ML, MH	A-7, A-6	0	0-5	95-100	95-100	90-100	75-98	30-60	15-30
353A: Toronto-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	8-37	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-50	20-30
	37-60	Loam	CL, CL-ML	A-4, A-6	0	0-3	85-95	80-90	75-85	50-65	15-30	5-15
408: Aqents-----	0-60	Variable	---	---	---	---	---	---	---	---	---	---
496A: Fincastle-----	0-11	Silt loam	CL, ML, CL-ML	A-4	0	0	100	95-100	90-100	75-93	0-25	3-10
	11-32	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-15
	32-50	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	90-98	85-95	75-85	30-40	10-15
	50-60	Loam	CL	A-4, A-6	0	0-3	88-96	82-90	70-86	50-66	25-30	8-11

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
570C2: Martinsville----	0-8	Silt loam	ML, CL-ML, CL	A-4	0	0	100	85-100	75-100	65-90	0-25	3-8
	8-28	Clay loam, silty clay loam, loam	CL, SC	A-2-4, A-2-6, A-4, A-6	0	0	95-100	85-100	70-100	30-95	25-40	7-15
	28-60	Sandy loam, loam, sandy clay loam	SC-SM, SC, CL-ML, CL	A-2-4, A-2-6, A-4, A-6	0	0	95-100	85-100	55-95	30-95	20-30	5-11
581B2: Tamalco-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	9-23	Silty clay loam, silty clay	CH	A-7	0	0	100	100	95-100	95-100	55-75	35-45
	23-47	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	95-100	30-50	15-25
	47-60	Silt loam, loam, clay loam	CL	A-6	0	0	100	100	95-100	80-100	30-40	15-25
620A: Darmstadt-----	0-15	Silt loam	CL, CL-ML	A-6, A-7, A-4	0	0	95-100	95-100	95-100	75-100	25-45	5-20
	15-26	Silty clay loam, silty clay	CL, CH	A-7	0	0	100	95-100	95-100	90-100	40-65	20-40
	26-53	Silty clay loam, silty clay	CL, CH	A-7	0	0	100	95-100	95-100	90-100	40-65	20-40
	53-60	Silt loam, silty clay loam, loam	CL	A-6, A-7, A-4	0	0	95-100	95-100	90-100	75-100	20-50	7-30
621B2: Coulterville----	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	8-24	Silty clay loam, silt loam	ML, CL, CH, MH	A-6, A-7	0	0	100	100	95-100	90-100	35-55	10-30
	24-55	Silt loam, silty clay loam	CL, ML	A-4, A-6, A-7	0	0	100	100	95-100	90-100	30-50	7-25
	55-60	Silt loam, silty clay loam, loam	CL-ML, CL	A-4, A-6, A-7	0	0	100	100	90-100	80-95	25-45	5-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
631B2: Princeton-----	0-5	Fine sandy loam	SM, SC, ML, CL	A-4, A-2-4	0	0	100	100	60-85	30-55	0-25	NP-10
	5-52	Sandy clay loam, fine sandy loam, sandy loam	SC, CL	A-6	0	0	100	100	70-90	35-70	25-35	10-15
	52-60	Stratified fine sand to silt	SM, ML, CL-ML, SC-SM	A-2-4, A-4	0	0	100	100	65-90	20-55	0-20	NP-5
631C2: Princeton-----	0-7	Fine sandy loam	SM, SC, ML, CL	A-4, A-2-4	0	0	100	100	60-85	30-55	0-25	NP-10
	7-58	Sandy clay loam, fine sandy loam, loam	SC, CL	A-6	0	0	100	100	70-90	35-70	25-35	10-15
	58-71	Stratified fine sand to silt	SM, ML, CL-ML, SC-SM	A-2-4, A-4	0	0	100	100	65-90	20-55	0-20	NP-5
631D2: Princeton-----	0-7	Fine sandy loam	SM, SC, ML, CL	A-4, A-2-4	0	0	100	100	60-85	30-55	0-25	NP-10
	7-42	Sandy clay loam, fine sandy loam, sandy loam	SC, CL	A-6	0	0	100	100	70-90	35-70	25-35	10-15
	42-60	Stratified fine sand to silt	SM, ML, CL-ML, SC-SM	A-2-4, A-4	0	0	100	100	65-90	20-55	0-20	NP-5
802B: Orthents-----	0-2	Loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	20-40	10-20
	2-60	Loam, silt loam, clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	20-40	10-20
802E: Orthents-----	0-1	Silt loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	20-40	10-20
	1-60	Loam, silt loam, clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	60-90	20-40	10-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
844B2:												
Ava-----	0-5	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	25-35	5-15
	5-12	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-20
	12-30	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	25-45	10-20
	30-53	Silty clay loam, loam, clay loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	95-100	90-100	80-90	20-45	5-20
	53-60	Loam, silt loam, clay loam	CL, ML, CL-ML	A-4, A-6	0	0	100	95-100	90-100	80-90	25-40	5-20
Blair-----	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	90-100	85-95	20-35	5-15
	8-20	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	90-100	80-100	30-50	15-30
	20-38	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	85-100	70-95	30-50	15-30
	38-60	Silty clay loam, clay loam, silt loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-90	20-40	10-25
865: Pits, gravel.												
889A: Bluford-----	0-9	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	95-100	90-100	20-35	5-15
	9-15	Silt loam	ML, CL-ML, CL	A-4	0	0	100	95-100	95-100	90-100	20-30	NP-10
	15-33	Silty clay loam, silty clay	CL	A-7, A-6	0	0	100	95-100	95-100	90-100	35-50	15-30
	33-60	Silt loam, loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0-5	100	95-100	90-100	70-90	25-40	5-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
889A: Darmstadt-----	0-13	Silt loam	CL, CL-ML	A-6, A-7, A-4	0	0	95-100	95-100	95-100	75-100	25-45	5-20
	13-18	Silty clay loam, silty clay	CL, CH	A-7	0	0	100	95-100	95-100	90-100	40-65	20-40
	18-40	Silty clay loam, silty clay	CL, CH	A-7	0	0	100	95-100	95-100	90-100	40-65	20-40
	40-60	Silt loam, silty clay loam, loam	CL	A-6, A-7, A-4	0	0	95-100	95-100	90-100	75-100	20-50	7-30
890C2: Ursa-----	0-5	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	90-100	80-100	20-40	5-20
	5-35	Silty clay, clay loam, silty clay loam	CH, CL	A-7	0	0-5	95-100	90-95	70-90	55-90	40-60	20-35
	35-60	Clay loam, loam, clay	CL, CH	A-6, A-7	0-1	0-5	95-100	90-95	80-90	60-85	35-55	20-35
Atlas-----	0-7	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-95	25-35	5-15
	7-22	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	22-60	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
890C3: Ursa-----	0-3	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	90-100	80-100	20-40	5-20
	3-38	Clay, clay loam, silty clay	CH, CL	A-7	0	0-5	95-100	90-95	70-90	55-90	40-60	20-35
	38-60	Clay loam, loam, clay	CL, CH	A-6, A-7	0-1	0-5	95-100	90-95	80-90	60-85	35-55	20-35
Atlas-----	0-3	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	75-100	40-60	25-40
	3-37	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	37-47	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	47-60	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-100	90-100	65-95	35-55	20-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
890D2:												
Ursa-----	0-5	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	90-100	80-100	20-40	5-20
	5-38	Clay, clay loam, silty clay loam	CH, CL	A-7	0	0-5	95-100	90-95	70-90	55-90	40-60	20-35
	38-60	Clay loam, loam, clay	CL, CH	A-6, A-7	0-1	0-5	95-100	90-95	80-90	60-85	35-55	20-35
Atlas-----	0-7	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-95	25-35	5-15
	7-37	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	37-60	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
891:												
Cisne-----	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	90-100	90-100	25-35	5-10
	8-19	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	19-43	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	90-100	90-100	45-60	20-35
	43-60	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	100	90-100	70-95	50-90	30-50	15-30
Piassa-----	0-9	Silt loam	CL, ML	A-6, A-7	0	0	100	100	95-100	90-100	30-45	10-20
	9-18	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	8-20
	18-45	Silty clay, silty clay loam	CL, ML, MH, CH	A-7	0	0	100	100	95-100	95-100	40-55	15-25
	45-60	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-45	10-25
896:												
Wynoose-----	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	20-35	5-15
	9-17	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	15-30	2-15
	17-55	Silty clay, silty clay loam	CL, CH	A-7	0	0	100	100	95-100	85-95	40-55	20-35
	55-60	Loam, clay loam, silty clay loam	CL	A-6, A-7	0-1	0-10	95-100	90-100	85-100	70-90	25-45	15-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
896: Huey-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-95	20-35	3-15
	7-14	Silt, silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	90-100	85-95	15-30	3-15
	14-39	Silt loam, silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-50	15-30
	39-60	Loam, silt loam, silty clay loam	CL	A-6	0	0	95-100	90-100	80-95	65-90	20-35	10-20
913F: Hickory-----	0-5	Loam	CL, ML, CL-ML	A-6, A-4	0	0-5	95-100	90-100	90-100	75-95	20-35	3-15
	5-30	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	30-60	Sandy loam, loam, gravelly clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
Marseilles-----	0-13	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	13-32	Silty clay loam, silty clay, clay loam	CL, CH	A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	32-60	Weathered bedrock	---	---	0	0	0	0	0	0	---	NP
913G: Hickory-----	0-12	Loam	CL, ML, CL-ML	A-6, A-4	0	0-5	95-100	90-100	90-100	75-95	20-35	3-15
	12-52	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	52-60	Sandy loam, loam, gravelly clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
Marseilles-----	0-4	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	4-32	Silty clay loam, silt loam, clay loam	CL, CH	A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	32-60	Weathered bedrock	---	---	0	0	0	0	0	0	---	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
927C2:												
Blair-----	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	90-100	85-95	20-35	5-15
	7-30	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	90-100	80-100	30-50	15-30
	30-50	Silty clay loam, clay loam, silt loam	CL	A-6, A-7	0	0-5	95-100	90-100	85-100	70-95	30-50	15-30
	50-60	Silty clay loam, clay loam, silt loam	CL	A-6	0	0-5	95-100	90-100	85-100	70-90	20-40	10-25
Atlas-----	0-7	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	75-95	25-35	5-15
	7-16	Silty clay loam, clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	16-41	Silty clay loam, silty clay, clay loam	CH	A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	41-60	Clay loam, clay, loam	CH, CL	A-6, A-7	0	0	95-100	90-100	90-100	65-95	35-55	20-30
967G:												
Hickory-----	0-7	Loam	CL, ML, CL-ML	A-6, A-4	0	0-5	95-100	90-100	90-100	75-95	20-35	3-15
	7-50	Clay loam, silty clay loam, gravelly clay loam	CL	A-6, A-7	0-1	0-5	95-100	75-100	70-95	65-80	30-50	15-30
	50-60	Sandy loam, loam, gravelly clay loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	75-95	70-95	60-80	20-40	5-20
Gosport-----	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	90-100	90-100	70-100	25-40	5-15
	6-26	Clay, silty clay, silty clay loam	CH	A-7	0	0	100	90-100	90-100	85-100	50-65	35-50
	26-60	Weathered bedrock	---	---	0	0	0	0	0	0	---	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
		In			Pct	Pct					Pct	
3074:												
Radford-----	0-15	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	80-100	30-40	5-15
	15-36	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-100	25-35	5-15
	36-60	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0	0	100	100	95-100	80-95	35-50	15-25
3092B:												
Sarpy-----	0-4	Loamy fine sand	SM	A-2-4	0	0	100	100	60-80	15-35	0-14	NP
	4-72	Fine sand, loamy sand, sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	60-80	2-35	0-14	NP
3225:												
Holton-----	0-7	Loam	CL, CL-ML, ML	A-4	0-1	0-20	90-100	85-100	80-100	60-90	0-25	2-10
	7-32	Silt loam, loam, loamy sand	CL-ML, CL, SC-SM, SC	A-4, A-2, A-6	0-1	0-20	90-100	85-100	60-95	30-75	0-25	4-12
	32-60	Stratified sand to sandy clay loam	SC, SC-SM, CL, CL-ML	A-4, A-2, A-6	0-2	0-40	75-100	60-100	55-90	30-55	0-25	2-14
3226:												
Wirt-----	0-15	Silt loam	CL-ML, ML	A-4	0	0	95-100	80-100	80-100	65-90	0-25	3-7
	15-43	Fine sandy loam, loam	CL-ML, ML	A-4	0	0	95-100	80-100	75-100	55-90	0-25	3-7
	43-60	Sandy loam, fine sandy loam, loamy fine sand	SM, SC-SM, ML, CL-ML	A-4, A-2, A-1-B	0	0-5	85-95	50-85	40-75	20-55	0-25	NP-7
3284A:												
Tice-----	0-10	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	80-95	30-45	10-20
	10-54	Silty clay loam, silt loam	CL, CH	A-7	0	0	100	100	95-100	85-95	40-55	15-30
	54-60	Stratified silty clay loam to loam	CL-ML, CL	A-4, A-6, A-7	0	0	100	100	60-95	55-80	25-45	5-20
3288:												
Petrolia-----	0-10	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	80-100	30-45	10-20
	10-60	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-100	85-100	35-45	15-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
3304A: Landes-----	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	90-100	85-100	50-75	20-35	5-15
	14-33	Loam, fine sandy loam, loamy fine sand	SM, CL-ML, SC, SC-SM	A-4, A-2-4	0	0	100	85-100	70-100	15-60	0-25	NP-10
	33-60	Stratified sand to silt loam	SM, SP-SM, SC, SC-SM	A-4, A-2-4	0	0	100	85-100	70-85	10-50	0-30	NP-10
3328: Holly-----	0-9	Silt loam	ML	A-4	0	0	90-100	85-100	80-100	70-90	25-35	3-10
	9-44	Silt loam, loam, sandy loam	ML, SM	A-4, A-6	0	0	85-100	75-100	70-95	45-85	20-40	NP-14
	44-60	Silt loam, loam, sandy clay loam	ML, SM	A-4, A-2	0	0	85-100	75-100	50-95	25-80	20-40	NP-10
3331A: Haymond-----	0-7	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-30	4-10
	7-48	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	20-32	4-13
	48-60	Fine sandy loam, silt loam, loam	SM, ML, CL, SC	A-4, A-6	0	0	95-100	90-100	80-100	35-90	15-35	NP-15
3331B: Haymond-----	0-12	Silt loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-30	4-10
	12-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	20-32	4-13
3333: Wakeland-----	0-6	Silt loam	ML	A-4	0	0	100	100	90-100	80-90	27-36	4-10
	6-60	Silt loam	ML	A-4	0	0	100	100	90-100	80-90	27-36	4-10
3334: Birds-----	0-6	Silt loam	CL	A-4, A-6	0	0	100	95-100	90-100	80-100	24-34	8-15
	6-60	Silt loam	CL	A-4, A-6	0	0	100	95-100	90-100	80-100	24-34	8-15
3404: Titus-----	0-13	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	90-100	40-55	20-30
	13-60	Silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	90-100	40-55	20-30

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
3415: Orion-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	80-100	25-35	4-12
	8-24	Stratified silt loam to very fine sand	CL, CL-ML	A-4	0	0	100	100	90-100	70-80	20-30	4-10
	24-60	Stratified silt loam to sand	CL, CL-ML	A-4	0	0	80-100	80-100	80-100	80-100	20-30	4-10
3424: Shoals-----	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	65-90	20-35	6-15
	11-60	Stratified silt loam to sandy loam	ML, CL, CL-ML	A-4	0	0-3	90-100	85-100	60-80	50-70	0-30	3-10
3430A: Raddle-----	0-12	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-35	8-15
	12-42	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	20-30	4-14
	42-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
3451: Lawson-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-40	5-20
	9-27	Silt loam, silty clay loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-30	5-10
	27-60	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	60-100	20-45	10-25
3603: Blackoar-----	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-18
	15-44	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-18
	44-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
3776+: Comfrey-----	0-11	Silt loam	ML, OL, CL	A-6, A-4	0	0	100	100	85-100	55-90	30-40	5-15
	11-46	Clay loam, loam, silty clay loam	OL, OH, MH, ML	A-7	0	0	100	100	85-100	65-85	45-60	12-25
	46-60	Clay loam, loam	CL	A-7, A-6	0	0	100	100	80-100	60-85	35-50	12-25

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
				Pct	Pct					Pct		
7109: Raccoon-----	In											
	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	20-40	8-20
	7-25	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-40	5-20
	25-40	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	35-50	15-30
	40-60	Stratified loamy fine sand to silty clay	SM, ML, CL, SC	A-4, A-6, A-7	0	0	100	90-100	55-100	45-90	25-45	3-20
7134B: Camden-----	0-7	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	3-15
	7-38	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	38-60	Stratified gravelly sandy clay loam to loam	SM, SC, ML, CL	A-2, A-4	0	0-5	90-100	80-100	50-80	20-60	0-25	3-10
7424: Shoals-----	0-8	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	65-90	20-35	6-15
	8-60	Silt loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	75-85	25-40	5-15

Table 16.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	KF	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
2: Cisne-----	0-9	15-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-3.0	0.37	0.37	5	6	48
	9-20	15-27	1.25-1.45	0.06-0.60	0.18-0.20	Low	0.0-0.5	0.37	0.37			
	20-54	35-45	1.40-1.60	0.00-0.06	0.09-0.15	High	0.0-1.0	0.37	0.37			
	54-60	25-37	1.50-1.70	0.00-0.06	0.08-0.14	Moderate	0.0-0.5	0.37	0.37			
3A: Hoyleton-----	0-8	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-3.0	0.32	0.32	5	6	48
	8-12	15-27	1.35-1.60	0.20-0.60	0.16-0.18	Low	0.2-1.0	0.43	0.43			
	12-45	35-45	1.40-1.65	0.06-0.20	0.13-0.20	High	0.2-0.5	0.43	0.43			
	45-60	15-33	1.35-1.70	0.06-0.20	0.17-0.22	Moderate	0.0-0.2	0.43	0.43			
3B: Hoyleton-----	0-9	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-3.0	0.32	0.32	5	6	48
	9-15	15-27	1.35-1.60	0.20-0.60	0.16-0.18	Low	0.2-1.0	0.43	0.43			
	15-45	35-45	1.40-1.65	0.06-0.20	0.13-0.20	High	0.2-0.5	0.43	0.43			
	45-60	15-33	1.35-1.70	0.06-0.20	0.17-0.22	Moderate	0.0-0.2	0.43	0.43			
5B2: Blair-----	0-6	20-27	1.35-1.55	0.60-2.00	0.15-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	6-30	25-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.5	0.37	0.37			
	30-60	18-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.3	0.37	0.37			
5B3: Blair-----	0-4	20-27	1.35-1.55	0.60-2.00	0.15-0.24	Low	0.5-2.0	0.37	0.37	4	6	48
	4-34	25-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.5	0.37	0.37			
	34-50	18-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.3	0.37	0.37			
	50-60	20-27	1.35-1.60	0.20-0.60	0.19-0.22	Low	0.0-0.1	0.37	0.37			
5C2: Blair-----	0-8	20-27	1.35-1.55	0.60-2.00	0.15-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	8-20	25-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.5	0.37	0.37			
	20-52	18-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.3	0.37	0.37			
	52-60	20-27	1.35-1.60	0.20-0.60	0.19-0.22	Low	0.0-0.1	0.37	0.37			
5C3: Blair-----	0-7	20-27	1.35-1.55	0.60-2.00	0.15-0.24	Low	0.5-2.0	0.37	0.37	4	6	48
	7-28	25-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.5	0.37	0.37			
	28-58	18-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.3	0.37	0.37			
	58-60	20-27	1.35-1.60	0.20-0.60	0.19-0.22	Low	0.0-0.1	0.37	0.37			
6B2: Fishhook-----	0-5	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	4	6	48
	5-23	27-35	1.40-1.60	0.60-2.00	0.18-0.20	Moderate	0.0-1.0	0.37	0.37			
	23-60	35-45	1.55-1.75	0.06-0.20	0.09-0.16	High	0.0-1.0	0.37	0.37			
7B2: Atlas-----	0-8	20-27	1.30-1.50	0.20-0.60	0.20-0.25	Moderate	1.0-2.0	0.43	0.43	3	6	48
	8-30	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	30-56	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	56-60	20-30	1.35-1.60	0.06-0.20	0.07-0.18	Moderate	0.0-1.0	0.32	0.32			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
7B3: Atlas-----	0-4	30-40	1.35-1.55	0.06-0.20	0.14-0.19	High	0.5-1.0	0.43	0.43	4	7	38
	4-9	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	9-50	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	50-60	20-30	1.35-1.60	0.06-0.20	0.07-0.18	Moderate	0.0-1.0	0.32	0.32			
7C2: Atlas-----	0-6	20-27	1.30-1.50	0.20-0.60	0.20-0.25	Moderate	1.0-2.0	0.43	0.43	3	6	48
	6-16	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	16-45	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	45-60	20-30	1.35-1.60	0.06-0.20	0.07-0.18	Moderate	0.0-1.0	0.32	0.32			
7D2: Atlas-----	0-6	20-27	1.30-1.50	0.20-0.60	0.20-0.25	Moderate	1.0-2.0	0.43	0.43	3	6	48
	6-11	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	11-35	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	35-60	20-30	1.35-1.60	0.06-0.20	0.07-0.18	Moderate	0.0-1.0	0.32	0.32			
7D3: Atlas-----	0-4	30-40	1.35-1.55	0.06-0.20	0.14-0.19	High	0.5-1.0	0.43	0.43	4	7	38
	4-11	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	11-34	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	34-60	20-30	1.35-1.60	0.06-0.20	0.07-0.18	Moderate	0.0-1.0	0.32	0.32			
8D2: Hickory-----	0-10	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	1.0-2.0	0.37	0.37	5	6	48
	10-49	27-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.28	0.28			
	49-60	15-32	1.50-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.28			
8D3: Hickory-----	0-3	27-35	1.40-1.65	0.60-2.00	0.17-0.19	Moderate	0.5-1.0	0.37	0.37	4	6	48
	3-20	27-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.28	0.28			
	20-60	15-32	1.50-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.28			
8F: Hickory-----	0-10	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	1.0-2.0	0.37	0.37	5	6	48
	10-45	27-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.28	0.28			
	45-60	15-32	1.50-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.28			
8G: Hickory-----	0-16	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	1.0-2.0	0.37	0.37	5	6	48
	16-48	27-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.28	0.28			
	48-60	15-32	1.50-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.28			
12: Wynoose-----	0-8	15-25	1.25-1.45	0.60-2.00	0.22-0.24	Low	0.5-2.0	0.43	0.43	5	6	48
	8-16	12-18	1.30-1.50	0.06-0.20	0.18-0.20	Low	0.2-0.5	0.43	0.43			
	16-52	35-42	1.40-1.60	0.00-0.06	0.09-0.13	High	0.2-0.5	0.43	0.43			
	52-60	25-37	1.50-1.70	0.06-0.20	0.11-0.15	Moderate	0.2-0.5	0.43	0.43			
13A: Bluford-----	0-9	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.43	0.43	5	6	48
	9-16	15-25	1.40-1.60	0.20-0.60	0.18-0.20	Low	0.0-1.0	0.43	0.43			
	16-35	35-42	1.45-1.65	0.06-0.60	0.11-0.20	Moderate	0.0-0.5	0.43	0.43			
	35-60	22-35	1.60-1.70	0.06-0.20	0.11-0.16	Moderate	0.0-0.5	0.43	0.43			
13B: Bluford-----	0-8	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.43	0.43	5	6	48
	8-12	15-25	1.40-1.60	0.20-0.60	0.18-0.20	Low	0.0-1.0	0.43	0.43			
	12-36	35-42	1.45-1.65	0.06-0.60	0.11-0.20	Moderate	0.0-0.5	0.43	0.43			
	36-60	22-35	1.60-1.70	0.06-0.20	0.11-0.16	Moderate	0.0-0.5	0.43	0.43			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
13B2: Bluford-----	0-3	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.43	0.43	5	6	48
	3-14	15-25	1.40-1.60	0.20-0.60	0.18-0.20	Low	0.0-1.0	0.43	0.43			
	14-50	35-42	1.45-1.65	0.06-0.60	0.11-0.20	Moderate	0.0-0.5	0.43	0.43			
	50-60	22-35	1.60-1.70	0.06-0.20	0.11-0.16	Moderate	0.0-0.5	0.43	0.43			
14B: Ava-----	0-11	20-27	1.40-1.60	0.60-2.00	0.21-0.24	Low	0.5-2.0	0.43	0.43	4	6	48
	11-30	22-33	1.40-1.60	0.60-2.00	0.18-0.21	Moderate	0.0-0.5	0.43	0.43			
	30-60	20-30	1.55-1.80	0.00-0.06	0.09-0.11	Low	0.0-0.5	0.43	0.43			
14C2: Ava-----	0-7	20-27	1.40-1.60	0.60-2.00	0.21-0.24	Low	0.5-2.0	0.43	0.43	4	6	48
	7-45	22-33	1.40-1.60	0.60-2.00	0.18-0.21	Moderate	0.0-0.5	0.43	0.43			
	45-60	20-30	1.55-1.80	0.00-0.06	0.09-0.11	Low	0.0-0.5	0.43	0.43			
27B2: Miami-----	0-7	11-22	1.30-1.45	0.60-2.00	0.20-0.24	Low	0.5-3.0	0.37	0.37	5	5	56
	7-28	27-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	0.0-0.5	0.37	0.37			
	28-38	20-27	1.50-1.70	0.20-0.60	0.14-0.19	Low	0.0-0.2	0.37	0.43			
	38-60	15-25	1.70-1.90	0.06-0.20	0.05-0.10	Low	0.0-0.2	0.37	0.43			
27C2: Miami-----	0-5	11-22	1.30-1.45	0.60-2.00	0.20-0.24	Low	0.5-3.0	0.37	0.37	5	5	56
	5-26	27-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	0.0-0.5	0.37	0.37			
	26-60	15-25	1.70-1.90	0.06-0.20	0.05-0.10	Low	0.0-0.2	0.37	0.43			
27C3: Miami-----	0-5	11-22	1.30-1.45	0.60-2.00	0.20-0.24	Low	0.5-2.0	0.37	0.37	4	5	56
	5-24	27-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	0.0-0.2	0.37	0.37			
	24-36	20-27	1.50-1.70	0.20-0.60	0.14-0.19	Low	0.0-0.2	0.37	0.43			
	36-60	15-25	1.70-1.90	0.06-0.20	0.05-0.10	Low	0.0-0.2	0.37	0.43			
27D2: Miami-----	0-8	11-22	1.30-1.45	0.60-2.00	0.20-0.24	Low	0.5-3.0	0.37	0.37	5	5	56
	8-35	27-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	0.0-0.5	0.37	0.37			
	35-60	15-25	1.70-1.90	0.06-0.20	0.05-0.10	Low	0.0-0.2	0.37	0.43			
27E: Miami-----	0-9	11-22	1.30-1.45	0.60-2.00	0.20-0.24	Low	0.5-3.0	0.37	0.37	5	5	56
	9-31	27-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	0.0-0.5	0.37	0.37			
	31-60	15-25	1.70-1.90	0.06-0.20	0.05-0.10	Low	0.0-0.2	0.37	0.43			
27G: Miami-----	0-6	11-22	1.30-1.45	0.60-2.00	0.20-0.24	Low	0.5-3.0	0.37	0.37	5	5	56
	6-24	27-35	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	0.0-0.5	0.37	0.37			
	24-34	20-27	1.50-1.70	0.20-0.60	0.14-0.19	Low	0.0-0.2	0.37	0.43			
	34-60	15-25	1.70-1.90	0.06-0.20	0.05-0.10	Low	0.0-0.2	0.37	0.43			
48: Ebbert-----	0-12	20-30	1.20-1.40	0.20-0.60	0.22-0.24	Low	2.0-3.0	0.32	0.32	5	6	48
	12-18	18-25	1.30-1.50	0.20-0.60	0.20-0.22	Low	0.0-0.5	0.43	0.43			
	18-52	24-35	1.35-1.55	0.06-0.20	0.18-0.20	Moderate	0.0-1.0	0.43	0.43			
	52-60	22-33	1.50-1.70	0.06-0.20	0.14-0.20	Moderate	0.0-0.2	0.43	0.43			
50: Viriden-----	0-11	25-27	1.20-1.40	0.60-2.00	0.21-0.24	Moderate	4.0-6.0	0.28	0.28	5	6	48
	11-57	35-42	1.20-1.45	0.20-0.60	0.11-0.20	High	0.2-1.0	0.28	0.28			
	57-60	25-33	1.25-1.55	0.20-0.60	0.18-0.22	Moderate	0.2-0.5	0.28	0.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
109: Raccoon-----	0-8	18-27	1.30-1.50	0.20-0.60	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	8-26	18-27	1.35-1.55	0.20-0.60	0.20-0.22	Low	0.2-0.5	0.37	0.37			
	26-42	27-40	1.35-1.60	0.06-0.20	0.15-0.20	High	0.5-1.0	0.37	0.37			
	42-51	27-35	1.35-1.60	0.06-0.20	0.18-0.20	Moderate	0.5-1.0	0.37	0.37			
	51-60	18-35	1.40-1.65	0.20-0.60	0.15-0.20	Moderate	0.5-1.0	0.37	0.37			
120: Huey-----	0-9	15-27	1.35-1.50	0.20-0.60	0.22-0.24	Low	1.0-3.0	0.43	0.43	2	6	48
	9-12	11-25	1.40-1.55	0.06-0.20	0.20-0.22	Low	0.1-0.5	0.43	0.43			
	12-42	25-35	1.45-1.65	0.00-0.06	0.05-0.08	Moderate	0.0-0.4	0.43	0.43			
	42-60	18-35	1.55-1.75	0.06-0.20	0.10-0.15	Moderate	0.0-0.2	0.43	0.43			
132A: Starks-----	0-11	18-27	1.15-1.35	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	11-29	27-35	1.35-1.55	0.60-2.00	0.18-0.20	Moderate	0.5-1.0	0.37	0.37			
	29-46	18-30	1.45-1.65	0.60-2.00	0.16-0.19	Moderate	0.2-0.5	0.37	0.37			
	46-60	5-20	1.55-1.75	0.60-2.00	0.08-0.18	Low	0.2-0.5	0.32	0.32			
132B: Starks-----	0-14	18-27	1.15-1.35	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	14-32	27-35	1.35-1.55	0.60-2.00	0.18-0.20	Moderate	0.5-1.0	0.37	0.37			
	32-60	18-30	1.45-1.65	0.60-2.00	0.16-0.19	Moderate	0.2-0.5	0.37	0.37			
134A: Camden-----	0-8	14-27	1.35-1.55	0.60-2.00	0.21-0.25	Low	1.0-2.0	0.37	0.37	5	6	48
	8-35	22-35	1.40-1.60	0.60-2.00	0.14-0.24	Moderate	0.1-0.5	0.37	0.37			
	35-46	18-30	1.45-1.65	0.60-2.00	0.11-0.22	Low	0.0-0.5	0.32	0.32			
	46-60	5-20	1.40-1.70	0.60-6.00	0.12-0.22	Low	0.0-0.5	0.32	0.32			
134B: Camden-----	0-10	14-27	1.35-1.55	0.60-2.00	0.21-0.25	Low	1.0-2.0	0.37	0.37	5	6	48
	10-30	22-35	1.40-1.60	0.60-2.00	0.14-0.24	Moderate	0.1-0.5	0.37	0.37			
	30-50	18-30	1.45-1.65	0.60-2.00	0.11-0.22	Low	0.0-0.5	0.32	0.32			
	50-60	5-20	1.40-1.70	0.60-6.00	0.12-0.22	Low	0.0-0.5	0.32	0.32			
136: Brooklyn-----	0-9	20-27	1.20-1.40	0.60-2.00	0.22-0.24	Low	3.0-4.0	0.37	0.37	3	6	48
	9-17	14-22	1.25-1.40	0.60-2.00	0.20-0.22	Low	0.0-1.0	0.37	0.37			
	17-45	35-45	1.35-1.55	0.06-0.20	0.11-0.20	High	0.0-0.5	0.37	0.37			
	45-60	10-30	1.40-1.70	0.20-0.60	0.11-0.19	Low	0.0-0.5	0.24	0.24			
138: Shiloh-----	0-18	35-40	1.30-1.50	0.20-0.60	0.18-0.21	High	4.0-6.0	0.28	0.28	5	7	38
	18-43	35-45	1.35-1.55	0.20-0.60	0.09-0.18	High	0.5-2.0	0.28	0.28			
	43-60	25-45	1.30-1.50	0.20-0.60	0.18-0.20	High	0.2-0.5	0.28	0.28			
152: Drummer-----	0-20	20-27	1.10-1.30	0.60-2.00	0.22-0.24	Low	5.0-7.0	0.28	0.28	5	6	48
	20-50	20-35	1.20-1.45	0.60-2.00	0.21-0.24	Moderate	0.0-1.0	0.28	0.28			
	50-60	15-32	1.40-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.32			
208: Sexton-----	0-21	18-27	1.20-1.40	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.43	0.43	3	6	48
	21-44	35-42	1.40-1.60	0.06-0.20	0.15-0.20	High	0.0-0.5	0.43	0.43			
	44-60	20-35	1.40-1.70	0.20-0.60	0.15-0.20	Moderate	0.0-0.5	0.43	0.43			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
212B: Thebes-----	0-11	18-27	1.15-1.35	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	4	6	48
	11-27	25-35	1.30-1.50	0.60-2.00	0.18-0.20	Moderate	0.5-1.0	0.37	0.37			
	27-33	15-30	1.35-1.55	0.60-2.00	0.12-0.19	Low	0.5-1.0	0.37	0.37			
	33-60	3-10	1.80-2.00	6.00-20.00	0.05-0.10	Low	0.1-0.5	0.15	0.15			
218: Newberry-----	0-9	20-27	1.25-1.50	0.20-0.60	0.22-0.24	Low	2.0-3.0	0.37	0.37	5	6	48
	9-20	18-25	1.30-1.55	0.20-0.60	0.20-0.22	Low	0.2-0.5	0.37	0.37			
	20-55	27-35	1.30-1.55	0.06-0.20	0.18-0.20	Moderate	0.2-1.0	0.37	0.37			
	55-60	22-33	1.50-1.70	0.06-0.20	0.14-0.20	Moderate	0.2-0.5	0.37	0.37			
219A: Millbrook-----	0-8	18-27	1.40-1.60	0.60-2.00	0.22-0.24	Low	2.0-4.0	0.32	0.32	5	6	48
	8-14	15-27	1.40-1.60	0.60-2.00	0.22-0.24	Low	0.5-1.0	0.32	0.32			
	14-32	25-35	1.45-1.65	0.60-2.00	0.18-0.20	Moderate	0.2-1.0	0.43	0.43			
	32-52	18-35	1.45-1.70	0.60-2.00	0.12-0.19	Moderate	0.2-0.5	0.32	0.32			
	52-60	10-25	1.50-1.75	0.60-2.00	0.11-0.19	Low	0.2-0.5	0.24	0.24			
234A: Sunbury-----	0-15	20-27	1.20-1.40	0.60-2.00	0.22-0.24	Low	2.0-4.0	0.32	0.32	5	6	48
	15-41	35-45	1.35-1.55	0.60-2.00	0.18-0.20	High	0.0-1.0	0.43	0.43			
	41-60	20-30	1.40-1.60	0.20-0.60	0.07-0.11	Low	0.0-1.0	0.43	0.43			
236A: Sabina-----	0-12	20-27	1.25-1.45	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	12-54	35-42	1.35-1.55	0.20-0.60	0.11-0.20	High	0.0-1.0	0.37	0.37			
	54-60	20-35	1.50-1.75	0.20-0.60	0.11-0.18	Low	0.0-1.0	0.32	0.32			
291B: Xenia-----	0-12	11-22	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	4	5	56
	12-32	27-35	1.45-1.65	0.60-2.00	0.18-0.20	Moderate	0.2-1.0	0.37	0.37			
	32-45	24-35	1.45-1.65	0.20-0.60	0.15-0.19	Moderate	0.0-1.0	0.37	0.43			
	45-60	12-20	1.70-1.90	0.20-0.60	0.05-0.10	Low	0.0-0.5	0.37	0.43			
322C2: Russell-----	0-6	11-25	1.30-1.45	0.60-2.00	0.21-0.24	Low	0.5-2.0	0.37	0.37	5	5	56
	6-30	25-33	1.40-1.60	0.60-2.00	0.18-0.20	Moderate	0.5-1.0	0.37	0.37			
	30-60	23-33	1.40-1.60	0.60-2.00	0.15-0.19	Moderate	0.0-1.0	0.37	0.37			
327B2: Fox-----	0-7	5-15	1.40-1.70	0.60-2.00	0.10-0.15	Low	1.0-2.0	0.17	0.24	4	8	---
	7-32	18-35	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	0.0-0.5	0.32	0.32			
	32-60	0-2	1.30-1.80	6.00-20.00	0.02-0.07	Low	0.0-0.5	0.10	0.10			
327C2: Fox-----	0-6	5-15	1.40-1.70	0.60-2.00	0.10-0.15	Low	1.0-2.0	0.17	0.24	4	8	---
	6-37	18-35	1.55-1.65	0.60-2.00	0.10-0.19	Moderate	0.0-0.5	0.32	0.32			
	37-60	0-2	1.30-1.80	6.00-20.00	0.02-0.07	Low	0.0-0.5	0.10	0.10			
330: Peotone-----	0-15	33-40	1.20-1.40	0.20-0.60	0.21-0.23	High	5.0-7.0	0.28	0.28	5	4	86
	15-40	35-45	1.30-1.60	0.20-0.60	0.11-0.20	High	0.5-3.0	0.28	0.28			
	40-60	25-42	1.40-1.65	0.20-0.60	0.18-0.20	High	0.2-0.5	0.28	0.28			
353A: Toronto-----	0-8	18-27	1.30-1.45	0.60-2.00	0.22-0.24	Low	3.0-5.0	0.32	0.32	4	5	56
	8-37	27-35	1.35-1.50	0.60-2.00	0.18-0.20	Moderate	0.5-1.0	0.32	0.32			
	37-60	18-27	1.50-1.70	0.20-0.60	0.05-0.19	Low	0.0-0.5	0.32	0.37			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
408: Aguents-----	0-60	---	---	0.60-6.00	---	---	---	---	---	---	8	---
496A: Fincastle-----	0-11	11-22	1.40-1.55	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	4	5	56
	11-32	23-35	1.45-1.65	0.60-2.00	0.18-0.20	Moderate	0.0-0.5	0.37	0.37			
	32-50	24-32	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.37	0.37			
	50-60	20-26	1.55-1.90	0.20-0.60	0.05-0.19	Low	0.0-0.2	0.37	0.43			
570C2: Martinsville----	0-8	12-20	1.35-1.45	0.60-2.00	0.20-0.22	Low	0.5-2.0	0.37	0.37	5	5	56
	8-28	20-33	1.40-1.60	0.60-2.00	0.16-0.20	Moderate	0.0-0.5	0.37	0.37			
	28-60	15-25	1.40-1.60	0.60-2.00	0.12-0.17	Low	0.0-0.2	0.24	0.24			
581B2: Tamalco-----	0-9	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.43	0.43	3	6	48
	9-23	35-45	1.35-1.60	0.00-0.06	0.09-0.14	High	0.0-1.0	0.43	0.43			
	23-47	20-35	1.50-1.70	0.00-0.06	0.07-0.11	Moderate	0.0-1.0	0.43	0.43			
	47-60	20-30	1.55-1.75	0.00-0.06	0.02-0.12	Moderate	0.0-1.0	0.43	0.43			
620A: Darmstadt-----	0-15	10-27	1.30-1.50	0.06-0.20	0.22-0.24	Low	0.5-2.0	0.43	0.43	3	6	48
	15-26	27-35	1.40-1.65	0.06-0.20	0.11-0.20	Moderate	0.0-1.0	0.43	0.43			
	26-53	27-35	1.40-1.65	0.00-0.06	0.09-0.10	Moderate	0.0-1.0	0.43	0.43			
	53-60	15-30	1.50-1.70	0.00-0.06	0.10-0.15	Low	0.0-1.0	0.43	0.43			
621B2: Coulterville----	0-8	15-27	1.40-1.60	0.20-0.60	0.21-0.24	Low	0.5-1.0	0.43	0.43	5	6	48
	8-24	27-35	1.40-1.60	0.06-0.20	0.14-0.24	Moderate	0.0-0.5	0.43	0.43			
	24-55	18-35	1.45-1.60	0.06-0.20	0.10-0.15	Moderate	0.0-0.5	0.43	0.43			
	55-60	15-30	1.40-1.60	0.20-0.60	0.05-0.10	Low	0.0-0.5	0.43	0.43			
631B2: Princeton-----	0-5	12-20	1.35-1.50	0.60-2.00	0.13-0.18	Low	0.5-2.0	0.24	0.24	5	3	86
	5-52	18-25	1.40-1.55	0.60-2.00	0.16-0.18	Low	0.0-1.0	0.32	0.32			
	52-60	4-10	1.45-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.2	0.17	0.17			
631C2: Princeton-----	0-7	12-20	1.35-1.50	0.60-2.00	0.13-0.18	Low	0.5-2.0	0.24	0.24	5	3	86
	7-58	18-25	1.40-1.55	0.60-2.00	0.16-0.18	Low	0.0-1.0	0.32	0.32			
	58-71	4-10	1.45-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.2	0.17	0.17			
631D2: Princeton-----	0-7	12-20	1.35-1.50	0.60-2.00	0.13-0.18	Low	0.5-2.0	0.24	0.24	5	3	86
	7-42	18-25	1.40-1.55	0.60-2.00	0.16-0.18	Low	0.0-1.0	0.32	0.32			
	42-60	4-10	1.45-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.2	0.17	0.17			
802B: Orthents-----	0-2	22-30	1.70-1.75	0.20-0.60	0.18-0.22	Moderate	0.5-1.0	0.43	0.43	5	4	86
	2-60	22-30	1.70-1.80	0.20-0.60	0.16-0.20	Moderate	---	0.43	0.43			
802E: Orthents-----	0-1	22-30	1.70-1.75	0.20-0.60	0.18-0.22	Moderate	0.5-1.0	0.43	0.43	5	4	86
	1-60	22-30	1.70-1.80	0.20-0.60	0.16-0.20	Moderate	---	0.43	0.43			
844B2: Ava-----	0-5	20-27	1.40-1.60	0.60-2.00	0.21-0.24	Low	0.5-2.0	0.43	0.43	4	6	48
	5-12	22-33	1.40-1.60	0.60-2.00	0.18-0.21	Moderate	0.0-0.5	0.43	0.43			
	12-30	24-35	1.50-1.70	0.20-0.60	0.18-0.21	Moderate	0.0-0.5	0.43	0.43			
	30-53	20-30	1.55-1.80	0.00-0.06	0.09-0.11	Low	0.0-0.5	0.43	0.43			
	53-60	20-30	1.55-1.75	0.20-0.60	0.05-0.10	Low	0.0-0.5	0.43	0.43			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
844B2: Blair-----	0-8	20-27	1.35-1.55	0.60-2.00	0.15-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	8-20	25-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.5	0.37	0.37			
	20-38	18-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.3	0.37	0.37			
	38-60	20-27	1.35-1.60	0.20-0.60	0.19-0.22	Low	0.0-0.1	0.37	0.37			
865: Pits, gravel.												
889A: Bluford-----	0-9	20-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.43	0.43	5	6	48
	9-15	15-25	1.40-1.60	0.20-0.60	0.18-0.20	Low	0.0-1.0	0.43	0.43			
	15-33	35-42	1.45-1.65	0.06-0.60	0.11-0.20	Moderate	0.0-0.5	0.43	0.43			
	33-60	22-35	1.60-1.70	0.06-0.20	0.11-0.16	Moderate	0.0-0.5	0.43	0.43			
Darmstadt-----	0-13	10-27	1.30-1.50	0.06-0.20	0.22-0.24	Low	0.5-2.0	0.43	0.43	3	6	48
	13-18	27-35	1.40-1.65	0.06-0.20	0.11-0.20	Moderate	0.0-1.0	0.43	0.43			
	18-40	27-35	1.40-1.65	0.00-0.06	0.09-0.10	Moderate	0.0-1.0	0.43	0.43			
	40-60	15-30	1.50-1.70	0.00-0.06	0.10-0.15	Low	0.0-1.0	0.43	0.43			
890C2: Ursa-----	0-5	15-27	1.30-1.50	0.60-2.00	0.20-0.24	Low	1.0-2.0	0.43	0.43	3	6	48
	5-35	35-45	1.50-1.70	0.06-0.20	0.09-0.17	High	0.5-1.0	0.32	0.32			
	35-60	25-45	1.55-1.75	0.20-0.60	0.08-0.18	Moderate	0.2-0.5	0.32	0.37			
Atlas-----	0-7	20-27	1.30-1.50	0.20-0.60	0.20-0.25	Moderate	1.0-2.0	0.43	0.43	3	6	48
	7-22	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	22-60	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
890C3: Ursa-----	0-3	15-27	1.30-1.50	0.60-2.00	0.20-0.24	Low	0.5-2.0	0.43	0.43	2	6	48
	3-38	35-45	1.50-1.70	0.06-0.20	0.09-0.17	High	0.5-1.0	0.32	0.32			
	38-60	25-45	1.55-1.75	0.20-0.60	0.08-0.18	Moderate	0.2-0.5	0.32	0.37			
Atlas-----	0-3	30-40	1.35-1.55	0.06-0.20	0.14-0.19	High	0.5-1.0	0.43	0.43	4	7	38
	3-37	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	37-47	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	47-60	20-30	1.35-1.60	0.06-0.20	0.07-0.18	Moderate	0.0-1.0	0.32	0.32			
890D2: Ursa-----	0-5	15-27	1.30-1.50	0.60-2.00	0.20-0.24	Low	1.0-2.0	0.43	0.43	3	6	48
	5-38	35-45	1.50-1.70	0.06-0.20	0.09-0.17	High	0.5-1.0	0.32	0.32			
	38-60	25-45	1.55-1.75	0.20-0.60	0.08-0.18	Moderate	0.2-0.5	0.32	0.37			
Atlas-----	0-7	20-27	1.30-1.50	0.20-0.60	0.20-0.25	Moderate	1.0-2.0	0.43	0.43	3	6	48
	7-37	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	37-60	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
891: Cisne-----	0-8	15-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-3.0	0.37	0.37	5	6	48
	8-19	15-27	1.25-1.45	0.06-0.60	0.18-0.20	Low	0.0-0.5	0.37	0.37			
	19-43	35-45	1.40-1.60	0.00-0.06	0.09-0.15	High	0.0-1.0	0.37	0.37			
	43-60	25-37	1.50-1.70	0.00-0.06	0.08-0.14	Moderate	0.0-0.5	0.37	0.37			
Piasa-----	0-9	18-27	1.25-1.45	0.20-0.60	0.22-0.24	Moderate	2.0-4.0	0.37	0.37	2	6	48
	9-18	18-27	1.30-1.50	0.06-0.20	0.18-0.20	Moderate	0.5-1.0	0.37	0.37			
	18-45	35-43	1.35-1.55	0.00-0.06	0.09-0.10	High	0.5-1.0	0.37	0.37			
	45-60	20-35	1.50-1.70	0.06-0.20	0.10-0.12	Moderate	0.0-0.5	0.37	0.37			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
896:												
Wynoose-----	0-9	15-25	1.25-1.45	0.60-2.00	0.22-0.24	Low	0.5-2.0	0.43	0.43	5	6	48
	9-17	12-18	1.30-1.50	0.06-0.20	0.18-0.20	Low	0.2-0.5	0.43	0.43			
	17-55	35-42	1.40-1.60	0.00-0.06	0.09-0.13	High	0.2-0.5	0.43	0.43			
	55-60	20-35	1.60-1.80	0.06-0.20	0.10-0.16	Moderate	0.2-0.5	0.32	0.32			
Huey-----	0-7	15-27	1.35-1.50	0.20-0.60	0.22-0.24	Low	1.0-3.0	0.43	0.43	2	6	48
	7-14	11-25	1.40-1.55	0.06-0.20	0.20-0.22	Low	0.1-0.5	0.43	0.43			
	14-39	25-35	1.45-1.65	0.00-0.06	0.05-0.08	Moderate	0.0-0.4	0.43	0.43			
	39-60	18-35	1.55-1.75	0.06-0.20	0.10-0.15	Moderate	0.0-0.2	0.43	0.43			
913F:												
Hickory-----	0-5	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	1.0-2.0	0.37	0.37	5	6	48
	5-30	27-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.28	0.28			
	30-60	15-32	1.50-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.28			
Marseilles-----	0-13	20-27	1.20-1.40	0.60-2.00	0.20-0.24	Low	1.0-2.0	0.37	0.37	3	6	48
	13-32	27-42	1.35-1.60	0.06-0.20	0.09-0.20	Moderate	0.0-1.0	0.37	0.37			
	32-60	---	---	0.01-0.20	---	---	---	---	---			
913G:												
Hickory-----	0-12	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	1.0-2.0	0.37	0.37	5	6	48
	12-52	27-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.28	0.28			
	52-60	15-32	1.50-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.28			
Marseilles-----	0-4	20-27	1.20-1.40	0.60-2.00	0.20-0.24	Low	1.0-2.0	0.37	0.37	3	6	48
	4-32	27-42	1.35-1.60	0.06-0.20	0.09-0.20	Moderate	0.0-1.0	0.37	0.37			
	32-60	---	---	0.01-0.20	---	---	---	---	---			
927C2:												
Blair-----	0-7	20-27	1.35-1.55	0.60-2.00	0.15-0.24	Low	1.0-2.0	0.37	0.37	5	6	48
	7-30	25-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.5	0.37	0.37			
	30-50	18-35	1.45-1.60	0.20-0.60	0.16-0.21	Moderate	0.0-0.3	0.37	0.37			
	50-60	20-27	1.35-1.60	0.20-0.60	0.19-0.22	Low	0.0-0.1	0.37	0.37			
Atlas-----	0-7	20-27	1.30-1.50	0.20-0.60	0.20-0.25	Moderate	1.0-2.0	0.43	0.43	3	6	48
	7-16	35-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	16-41	30-45	1.35-1.55	0.00-0.06	0.07-0.19	High	0.0-1.0	0.32	0.32			
	41-60	20-30	1.35-1.60	0.06-0.20	0.07-0.18	Moderate	0.0-1.0	0.32	0.32			
967G:												
Hickory-----	0-7	19-25	1.30-1.50	0.60-2.00	0.20-0.22	Low	1.0-2.0	0.37	0.37	5	6	48
	7-50	27-35	1.45-1.65	0.60-2.00	0.15-0.19	Moderate	0.0-0.5	0.28	0.28			
	50-60	15-32	1.50-1.70	0.60-2.00	0.11-0.19	Low	0.0-0.2	0.28	0.28			
Gosport-----	0-6	18-27	1.30-1.40	0.20-0.60	0.18-0.20	Low	2.0-3.0	0.43	0.43	3	6	48
	6-26	36-60	1.50-1.60	0.00-0.06	0.12-0.14	High	0.0-0.5	0.32	0.32			
	26-60	---	---	0.00-0.06	---	---	---	---	---			
3074:												
Radford-----	0-15	18-27	1.40-1.60	0.60-2.00	0.22-0.24	Low	2.0-4.0	0.28	0.28	5	6	48
	15-36	18-27	1.40-1.60	0.60-2.00	0.20-0.22	Low	0.5-2.0	0.28	0.28			
	36-60	24-35	1.35-1.55	0.60-2.00	0.18-0.20	Moderate	0.5-4.0	0.28	0.28			
3092B:												
Sarpy-----	0-4	2-5	1.20-1.50	6.00-20.00	0.05-0.09	Low	0.5-1.0	0.17	0.17	5	2	134
	4-72	2-5	1.20-1.50	6.00-20.00	0.05-0.09	Low	0.0-0.5	0.15	0.15			
3225:												
Holton-----	0-7	5-18	1.20-1.45	0.60-2.00	0.15-0.20	Low	1.0-2.0	0.37	0.43	5	5	56
	7-32	5-18	1.25-1.45	0.60-2.00	0.13-0.17	Low	0.5-1.0	0.24	0.32			
	32-60	5-20	1.25-1.45	0.60-2.00	0.07-0.16	Low	0.2-1.0	0.24	0.43			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
3226: Wirt-----	0-15	10-18	1.30-1.45	0.60-2.00	0.17-0.20	Low	0.5-2.0	0.37	0.43	5	5	56
	15-43	10-18	1.40-1.55	0.60-2.00	0.15-0.20	Low	0.2-1.0	0.24	0.28			
	43-60	8-18	1.45-1.60	2.00-6.00	0.07-0.17	Low	0.0-1.0	0.24	0.43			
3284A: Tice-----	0-10	27-35	1.25-1.45	0.60-2.00	0.21-0.24	Moderate	2.0-3.0	0.32	0.32	5	7	38
	10-54	24-35	1.30-1.50	0.60-2.00	0.18-0.20	Moderate	0.0-1.0	0.32	0.32			
	54-60	15-30	1.40-1.60	0.60-2.00	0.11-0.18	Moderate	0.0-1.0	0.32	0.32			
3288: Petrolia-----	0-10	27-35	1.20-1.40	0.20-0.60	0.21-0.23	Moderate	2.0-3.0	0.32	0.32	5	7	38
	10-60	27-35	1.35-1.45	0.20-0.60	0.18-0.20	Moderate	0.2-1.0	0.32	0.32			
3304A: Landes-----	0-14	10-22	1.20-1.40	0.60-6.00	0.20-0.22	Low	1.0-2.0	0.32	0.32	4	5	56
	14-33	5-18	1.60-1.70	2.00-6.00	0.10-0.15	Low	0.0-2.0	0.32	0.32			
	33-60	5-18	1.60-1.80	6.00-20.00	0.05-0.15	Low	0.0-2.0	0.20	0.20			
3328: Holly-----	0-9	15-27	1.20-1.40	0.60-2.00	0.20-0.24	Low	2.0-5.0	0.28	0.28	5	6	48
	9-44	18-30	1.20-1.50	0.20-2.00	0.17-0.21	Low	0.5-1.0	0.28	0.32			
	44-60	10-27	1.20-1.45	0.60-6.00	0.10-0.20	Low	0.0-1.0	0.28	0.32			
3331A: Haymond-----	0-7	10-20	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	5	56
	7-48	10-22	1.30-1.50	0.60-2.00	0.20-0.22	Low	0.5-2.0	0.37	0.37			
	48-60	5-26	1.30-1.50	0.60-2.00	0.20-0.22	Low	0.3-1.0	0.37	0.37			
3331B: Haymond-----	0-12	10-20	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	5	56
	12-60	10-22	1.30-1.50	0.60-2.00	0.20-0.22	Low	0.5-2.0	0.37	0.37			
3333: Wakeland-----	0-6	10-17	1.30-1.50	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	5	56
	6-60	10-17	1.30-1.50	0.60-2.00	0.20-0.22	Low	0.2-1.0	0.37	0.37			
3334: Birds-----	0-6	15-25	1.30-1.50	0.20-0.60	0.21-0.25	Low	1.0-2.0	0.43	0.43	5	6	48
	6-60	18-27	1.40-1.60	0.20-0.60	0.20-0.22	Low	0.0-2.0	0.43	0.43			
3404: Titus-----	0-13	35-40	1.30-1.50	0.06-0.20	0.18-0.22	High	2.0-4.0	0.32	0.32	5	4	86
	13-60	35-45	1.30-1.60	0.06-0.20	0.11-0.22	High	0.2-1.0	0.32	0.32			
3415: Orion-----	0-8	10-18	1.20-1.30	0.60-2.00	0.22-0.24	Low	1.0-2.0	0.37	0.37	5	5	56
	8-24	10-18	1.20-1.30	0.60-2.00	0.20-0.22	Low	1.0-2.0	0.37	0.37			
	24-60	10-18	1.20-1.40	0.60-2.00	0.18-0.22	Low	0.0-0.5	0.37	0.37			
3424: Shoals-----	0-11	18-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	2.0-5.0	0.37	0.37	5	6	48
	11-60	12-25	1.35-1.60	0.60-2.00	0.12-0.21	Low	0.5-1.0	0.37	0.43			
3430A: Raddle-----	0-12	18-24	1.20-1.40	0.60-2.00	0.22-0.24	Low	2.0-4.0	0.32	0.32	5	6	48
	12-42	18-24	1.20-1.40	0.60-2.00	0.20-0.22	Low	0.5-2.0	0.43	0.43			
	42-60	22-35	1.35-1.55	0.60-2.00	0.16-0.20	Moderate	0.1-1.0	0.43	0.43			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
3451: Lawson-----	0-9	10-27	1.20-1.55	0.60-2.00	0.22-0.24	Low	3.0-7.0	0.28	0.28	5	5	56
	9-27	10-30	1.20-1.55	0.60-2.00	0.18-0.22	Low	3.0-7.0	0.28	0.28			
	27-60	18-30	1.55-1.65	0.60-2.00	0.18-0.20	Moderate	1.0-4.0	0.43	0.43			
3603: Blackoar-----	0-15	18-27	1.35-1.45	0.60-2.00	0.20-0.24	Low	2.0-4.0	0.28	0.28	5	6	48
	15-44	18-27	1.35-1.45	0.60-2.00	0.20-0.22	Low	0.5-1.0	0.43	0.43			
	44-60	18-30	1.35-1.45	0.60-2.00	0.18-0.22	Low	0.5-1.0	0.43	0.43			
3776+: Comfrey-----	0-11	18-27	1.20-1.40	0.60-2.00	0.20-0.24	Low	4.0-10	0.28	0.28	5	6	48
	11-46	18-35	1.20-1.40	0.60-2.00	0.16-0.20	Moderate	6.0-10	0.28	0.28			
	46-60	18-35	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.5-4.0	0.28	0.28			
7109: Raccoon-----	0-7	20-27	1.30-1.50	0.20-0.60	0.22-0.24	Moderate	1.0-2.0	0.37	0.37	5	6	48
	7-25	18-25	1.35-1.50	0.20-0.60	0.20-0.22	Moderate	0.2-0.5	0.37	0.37			
	25-40	27-35	1.35-1.60	0.06-0.20	0.18-0.20	High	0.5-1.0	0.37	0.37			
	40-60	18-30	1.40-1.65	0.20-0.60	0.09-0.17	Moderate	0.5-1.0	0.37	0.37			
7134B: Camden-----	0-7	14-27	1.35-1.55	0.60-2.00	0.21-0.25	Low	1.0-2.0	0.37	0.37	5	6	48
	7-38	22-35	1.35-1.55	0.60-2.00	0.15-0.20	Moderate	0.0-1.0	0.37	0.37			
	38-60	5-20	1.55-1.75	0.60-6.00	0.11-0.22	Low	0.0-0.5	0.32	0.32			
7424: Shoals-----	0-8	18-27	1.30-1.50	0.60-2.00	0.22-0.24	Low	2.0-3.0	0.37	0.37	5	6	48
	8-60	18-33	1.35-1.55	0.60-2.00	0.17-0.22	Low	0.5-2.0	0.37	0.37			

Table 17.--Chemical Properties of the Soils

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
2: Cisne-----	0-9	15-27	11.0-22.0	4.5-7.8	---	---	---
	9-20	15-27	9.0-17.0	4.5-6.5	---	---	---
	20-54	35-45	21.0-28.0	4.5-7.3	---	---	---
	54-60	25-37	15.0-23.0	5.1-7.3	---	---	---
3A: Hoyleton-----	0-8	20-27	14.0-22.0	4.5-7.3	---	---	---
	8-12	15-27	9.0-17.0	4.5-6.5	---	---	---
	12-45	35-45	21.0-28.0	4.5-6.0	---	---	---
	45-60	15-33	9.0-21.0	5.1-7.3	---	---	0-5
3B: Hoyleton-----	0-9	20-27	14.0-22.0	4.5-7.3	---	---	---
	9-15	15-27	9.0-17.0	4.5-6.5	---	---	---
	15-45	35-45	21.0-28.0	4.5-6.0	---	---	---
	45-60	15-33	9.0-21.0	5.1-7.3	---	---	0-5
5B2: Blair-----	0-6	20-27	14.0-22.0	5.1-7.3	---	---	---
	6-30	25-35	15.0-23.0	4.5-6.0	---	---	---
	30-60	18-35	11.0-22.0	5.1-7.8	0-5	---	---
5B3: Blair-----	0-4	20-27	14.0-22.0	5.1-7.3	---	---	---
	4-34	25-35	15.0-23.0	4.5-6.0	---	---	---
	34-50	18-35	11.0-22.0	5.1-7.8	0-5	---	---
	50-60	20-27	12.0-17.0	5.6-7.8	0-20	---	0-3
5C2: Blair-----	0-8	20-27	14.0-22.0	5.1-7.3	---	---	---
	8-20	25-35	15.0-23.0	4.5-6.0	---	---	---
	20-52	18-35	11.0-22.0	5.1-7.8	0-5	---	---
	52-60	20-27	12.0-17.0	5.6-7.8	0-20	---	0-3
5C3: Blair-----	0-7	20-27	14.0-22.0	5.1-7.3	---	---	---
	7-28	25-35	15.0-23.0	4.5-6.0	---	---	---
	28-58	18-35	11.0-22.0	5.1-7.8	0-5	---	---
	58-60	20-27	12.0-17.0	5.6-7.8	0-20	---	0-3
6B2: Fishhook-----	0-5	20-27	14.0-22.0	5.1-7.3	---	---	---
	5-23	27-35	16.0-23.0	4.5-7.3	---	---	---
	23-60	35-45	21.0-29.0	4.5-7.8	0-25	---	---
7B2: Atlas-----	0-8	20-27	14.0-22.0	4.5-7.3	---	---	---
	8-30	35-45	21.0-29.0	4.5-7.3	---	---	---
	30-56	30-45	18.0-29.0	4.5-7.8	0-25	---	---
	56-60	20-30	12.0-20.0	6.1-7.8	0-25	---	---
7B3: Atlas-----	0-4	30-40	19.0-26.0	4.5-7.3	---	---	---
	4-9	35-45	21.0-29.0	4.5-7.3	---	---	---
	9-50	30-45	18.0-29.0	4.5-7.8	0-25	---	---
	50-60	20-30	12.0-20.0	6.1-7.8	0-25	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
7C2:							
Atlas-----	0-6	20-27	14.0-22.0	4.5-7.3	---	---	---
	6-16	35-45	21.0-29.0	4.5-7.3	---	---	---
	16-45	30-45	18.0-29.0	4.5-7.8	0-25	---	---
	45-60	20-30	12.0-20.0	6.1-7.8	0-25	---	---
7D2:							
Atlas-----	0-6	20-27	14.0-22.0	4.5-7.3	---	---	---
	6-11	35-45	21.0-29.0	4.5-7.3	---	---	---
	11-35	30-45	18.0-29.0	4.5-7.8	0-25	---	---
	35-60	20-30	12.0-20.0	6.1-7.8	0-25	---	---
7D3:							
Atlas-----	0-4	30-40	19.0-26.0	4.5-7.3	---	---	---
	4-11	35-45	21.0-29.0	4.5-7.3	---	---	---
	11-34	30-45	18.0-29.0	4.5-7.8	0-25	---	---
	34-60	20-30	12.0-20.0	6.1-7.8	0-25	---	---
8D2:							
Hickory-----	0-10	19-25	14.0-19.0	4.5-7.3	---	---	---
	10-49	27-35	16.0-22.0	4.5-6.0	---	---	---
	49-60	15-32	9.0-19.0	5.1-8.4	0-15	---	---
8D3:							
Hickory-----	0-3	27-35	17.0-23.0	4.5-7.3	---	---	---
	3-20	27-35	16.0-22.0	4.5-6.0	---	---	---
	20-60	15-32	9.0-19.0	5.1-8.4	0-15	---	---
8F:							
Hickory-----	0-10	19-25	14.0-19.0	4.5-7.3	---	---	---
	10-45	27-35	16.0-22.0	4.5-7.3	---	---	---
	45-60	15-32	9.0-19.0	5.1-8.4	0-15	---	---
8G:							
Hickory-----	0-16	19-25	14.0-19.0	4.5-7.3	---	---	---
	16-48	27-35	16.0-22.0	4.5-7.3	---	---	---
	48-60	15-32	9.0-19.0	5.1-8.4	0-15	---	---
12:							
Wynoose-----	0-8	15-25	10.0-19.0	4.5-7.8	---	---	---
	8-16	12-18	7.0-12.0	3.6-7.3	---	---	---
	16-52	35-42	21.0-26.0	3.6-6.0	---	---	---
	52-60	25-37	15.0-23.0	3.6-6.0	---	---	---
13A:							
Bluford-----	0-9	20-27	14.0-22.0	4.5-7.3	---	---	---
	9-16	15-25	9.0-17.0	3.6-6.0	---	---	---
	16-35	35-42	21.0-26.0	3.6-5.5	---	---	---
	35-60	22-35	13.0-22.0	3.6-6.5	---	---	---
13B:							
Bluford-----	0-8	20-27	14.0-22.0	4.5-7.3	---	---	---
	8-12	15-25	9.0-17.0	3.6-6.0	---	---	---
	12-36	35-42	21.0-26.0	3.6-5.5	---	---	---
	36-60	22-35	13.0-22.0	3.6-6.0	---	---	---
13B2:							
Bluford-----	0-3	20-27	14.0-22.0	4.5-7.3	---	---	---
	3-14	15-25	9.0-17.0	3.6-6.0	---	---	---
	14-50	35-42	21.0-26.0	3.6-5.5	---	---	---
	50-60	22-35	13.0-22.0	3.6-6.0	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
14B:							
Ava-----	0-11	20-27	13.0-20.0	4.5-7.3	---	---	---
	11-30	22-33	13.0-21.0	4.5-5.5	---	---	---
	30-60	20-30	12.0-19.0	4.5-5.5	---	---	---
14C2:							
Ava-----	0-7	20-27	13.0-20.0	4.5-7.3	---	---	---
	7-45	22-33	13.0-21.0	4.5-5.5	---	---	---
	45-60	20-30	12.0-19.0	4.5-5.5	---	---	---
27B2:							
Miami-----	0-7	11-22	5.0-20.0	5.6-7.3	---	---	---
	7-28	27-35	10.0-21.0	5.1-7.3	---	---	---
	28-38	20-27	8.0-17.0	6.6-7.8	10-20	---	---
	38-60	15-25	6.0-15.0	7.4-8.4	25-40	---	---
27C2:							
Miami-----	0-5	11-22	5.0-20.0	5.6-7.3	---	---	---
	5-26	27-35	10.0-21.0	5.1-7.3	---	---	---
	26-60	15-25	6.0-15.0	7.4-8.4	25-40	---	---
27C3:							
Miami-----	0-5	11-22	5.0-20.0	5.6-7.3	---	---	---
	5-24	27-35	10.0-21.0	5.1-7.3	---	---	---
	24-36	20-27	8.0-17.0	6.6-7.8	10-20	---	---
	36-60	15-25	6.0-15.0	7.4-8.4	25-40	---	---
27D2:							
Miami-----	0-8	11-22	5.0-20.0	5.6-7.3	---	---	---
	8-35	27-35	10.0-21.0	5.1-7.3	---	---	---
	35-60	15-25	6.0-15.0	7.4-8.4	25-40	---	---
27E:							
Miami-----	0-9	11-22	5.0-20.0	5.6-7.3	---	---	---
	9-31	27-35	10.0-21.0	5.1-7.3	---	---	---
	31-60	15-25	6.0-15.0	7.4-8.4	25-40	---	---
27G:							
Miami-----	0-6	11-22	5.0-20.0	5.6-7.3	---	---	---
	6-24	27-35	10.0-21.0	5.1-7.3	---	---	---
	24-34	20-27	8.0-17.0	6.6-7.8	10-20	---	---
	34-60	15-25	6.0-15.0	7.4-8.4	25-40	---	---
48:							
Ebbert-----	0-12	20-27	16.0-22.0	5.1-7.3	---	---	---
	12-18	18-25	11.0-16.0	5.1-6.0	---	---	---
	18-52	24-35	13.0-23.0	4.5-7.3	---	---	---
	52-60	22-33	13.0-21.0	5.6-7.3	---	---	---
50:							
Virden-----	0-11	25-27	23.0-28.0	5.6-7.8	---	---	---
	11-57	35-42	21.0-27.0	5.6-7.8	---	---	---
	57-60	25-33	15.0-20.0	6.1-8.4	0-25	---	---
109:							
Raccoon-----	0-8	18-27	13.0-20.0	4.5-7.3	---	---	---
	8-26	18-27	11.0-17.0	4.5-7.3	---	---	---
	26-42	27-40	17.0-26.0	4.5-6.0	---	---	---
	42-51	27-35	17.0-22.0	4.5-6.5	---	---	---
	51-60	18-35	12.0-22.0	4.5-6.5	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
120: Huey-----	0-9	15-27	11.0-22.0	5.1-7.8	---	0-2	0-20
	9-12	11-25	6.0-10.0	5.1-7.8	---	0-2	0-20
	12-42	25-35	15.0-21.0	7.4-9.0	0-25	0-2	15-40
	42-60	18-35	11.0-21.0	6.6-8.4	0-30	0-2	10-40
132A: Starks-----	0-11	18-27	13.0-22.0	5.1-7.3	---	---	---
	11-29	27-35	13.0-22.0	5.1-6.5	---	---	---
	29-46	18-30	11.0-18.0	5.1-7.8	0-5	---	---
	46-60	5-20	3.0-12.0	5.1-7.8	0-5	---	---
132B: Starks-----	0-14	18-27	13.0-22.0	5.1-7.3	---	---	---
	14-32	27-35	13.0-22.0	5.1-6.5	---	---	---
	32-60	18-30	11.0-18.0	5.1-7.8	0-5	---	---
134A: Camden-----	0-8	14-27	10.0-20.0	5.1-7.3	---	---	---
	8-35	22-35	13.0-22.0	5.1-7.3	---	---	---
	35-46	18-30	10.0-19.0	5.1-7.3	---	---	---
	46-60	5-20	3.0-12.0	5.6-8.4	0-5	---	---
134B: Camden-----	0-10	14-27	10.0-20.0	5.1-7.3	---	---	---
	10-30	22-35	13.0-22.0	5.1-7.3	---	---	---
	30-50	18-30	10.0-19.0	5.1-7.3	---	---	---
	50-60	5-20	3.0-12.0	5.6-8.4	0-5	---	---
136: Brooklyn-----	0-9	20-27	18.0-24.0	5.6-7.3	---	---	---
	9-17	14-22	9.0-14.0	4.5-6.5	---	---	---
	17-45	35-45	21.0-28.0	4.5-7.8	0-5	---	---
	45-60	10-30	6.0-19.0	5.1-7.8	0-20	---	---
138: Shiloh-----	0-18	35-40	29.0-34.0	6.1-7.3	---	---	---
	18-43	35-45	22.0-31.0	6.1-7.8	---	---	---
	43-60	25-45	15.0-28.0	6.1-8.4	0-10	---	---
152: Drummer-----	0-20	20-27	22.0-30.0	5.6-7.8	---	---	---
	20-50	20-35	12.0-23.0	5.6-7.8	---	---	---
	50-60	15-32	9.0-19.0	6.6-8.4	0-40	---	---
208: Sexton-----	0-21	18-27	13.0-22.0	5.6-7.3	---	---	---
	21-44	35-42	21.0-26.0	5.1-7.3	---	---	---
	44-60	20-35	12.0-22.0	6.1-7.8	0-5	---	---
212B: Thebes-----	0-11	18-27	13.0-20.0	5.6-6.5	---	---	---
	11-27	25-35	16.0-23.0	4.5-6.5	---	---	---
	27-33	15-30	10.0-20.0	4.5-6.5	---	---	---
	33-60	3-10	1.0-7.0	5.1-6.5	---	---	---
218: Newberry-----	0-9	20-27	16.0-22.0	5.6-7.3	---	---	---
	9-20	18-25	11.0-16.0	4.5-6.0	---	---	---
	20-55	27-35	16.0-22.0	4.5-7.3	---	---	---
	55-60	22-33	13.0-21.0	4.5-7.3	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
219A:							
Millbrook-----	0-8	18-27	15.0-24.0	5.1-7.8	---	---	---
	8-14	15-27	10.0-18.0	5.1-7.3	---	---	---
	14-32	25-35	16.0-23.0	5.1-7.3	---	---	---
	32-52	18-35	11.0-22.0	5.1-7.3	---	---	---
	52-60	10-25	6.0-15.0	5.6-8.4	0-20	---	---
234A:							
Sunbury-----	0-15	20-27	16.0-24.0	5.6-7.3	---	---	---
	15-41	35-45	21.0-29.0	5.6-7.8	0-20	---	---
	41-60	20-30	12.0-20.0	6.6-8.4	0-25	---	---
236A:							
Sabina-----	0-12	20-27	14.0-22.0	5.1-7.3	---	---	---
	12-54	35-42	21.0-27.0	5.6-7.3	---	---	---
	54-60	20-35	12.0-23.0	6.6-7.8	0-20	---	---
291B:							
Xenia-----	0-12	11-22	6.0-20.0	5.6-7.3	---	---	---
	12-32	27-35	10.0-23.0	5.1-7.3	---	---	---
	32-45	24-35	9.0-23.0	5.6-7.8	0-20	---	---
	45-60	12-20	4.0-13.0	7.4-8.4	15-50	---	---
322C2:							
Russell-----	0-6	11-25	5.0-19.0	5.1-7.3	---	---	---
	6-30	25-33	11.0-22.0	4.5-6.5	---	---	---
	30-60	23-33	9.0-22.0	5.1-7.3	---	---	---
327B2:							
Fox-----	0-7	5-15	3.0-20.0	5.1-7.3	---	---	---
	7-32	18-35	4.0-30.0	5.1-8.4	0-45	---	---
	32-60	0-2	0.0-3.0	7.4-8.4	5-45	---	---
327C2:							
Fox-----	0-6	5-15	3.0-20.0	5.1-7.3	---	---	---
	6-37	18-35	4.0-30.0	5.1-8.4	0-45	---	---
	37-60	0-2	0.0-3.0	7.4-8.4	5-45	---	---
330:							
Peotone-----	0-15	33-40	30.0-38.0	5.6-7.8	---	---	---
	15-40	35-45	22.0-33.0	6.1-7.8	---	---	---
	40-60	25-42	15.0-26.0	6.6-8.4	0-20	---	---
353A:							
Toronto-----	0-8	18-27	17.0-26.0	5.1-6.5	---	---	---
	8-37	27-35	15.0-23.0	4.5-7.3	---	---	---
	37-60	18-27	12.0-17.0	6.6-8.4	0-25	---	---
408:							
Aquents-----	0-60	---	---	---	---	---	---
496A:							
Fincastle-----	0-11	11-22	6.0-20.0	5.1-7.3	---	---	---
	11-32	23-35	9.0-23.0	4.5-6.5	---	---	---
	32-50	24-32	10.0-20.0	5.1-7.8	0-25	---	---
	50-60	20-26	8.0-16.0	7.4-8.4	15-35	---	---
570C2:							
Martinsville----	0-8	12-20	5.0-16.0	5.1-7.3	---	---	---
	8-28	20-33	8.0-21.0	5.1-6.5	---	---	---
	28-60	15-25	6.0-15.0	5.1-6.5	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
581B2:							
Tamalco-----	0-9	20-27	16.0-22.0	4.5-7.8	---	0-2	0-5
	9-23	35-45	21.0-29.0	4.5-7.3	---	0-2	10-25
	23-47	20-35	12.0-23.0	5.1-8.4	0-5	0-2	10-25
	47-60	20-30	12.0-20.0	7.4-9.0	0-5	0-2	10-15
620A:							
Darmstadt-----	0-15	10-27	7.0-20.0	5.1-7.3	---	0-2	0-5
	15-26	27-35	16.0-23.0	4.5-7.8	---	0-2	10-20
	26-53	27-35	16.0-23.0	6.6-9.0	0-5	0-2	10-25
	53-60	15-30	9.0-20.0	7.4-9.0	0-5	0-2	5-20
621B2:							
Coulterville----	0-8	15-27	9.0-18.0	5.6-7.8	---	---	0-5
	8-24	27-35	16.0-22.0	4.5-7.8	---	---	5-15
	24-55	18-35	11.0-22.0	6.6-8.4	0-10	---	5-15
	55-60	15-30	9.0-19.0	6.6-8.4	0-20	---	5-15
631B2:							
Princeton-----	0-5	12-20	5.0-16.0	5.6-7.3	---	---	---
	5-52	18-25	7.0-17.0	5.1-6.5	---	---	---
	52-60	4-10	2.0-7.0	6.1-8.4	0-30	---	---
631C2:							
Princeton-----	0-7	12-20	5.0-16.0	5.6-7.3	---	---	---
	7-58	18-25	7.0-17.0	5.1-6.5	---	---	---
	58-71	4-10	2.0-7.0	5.6-8.4	0-30	---	---
631D2:							
Princeton-----	0-7	12-20	5.0-16.0	5.6-7.3	---	---	---
	7-42	18-25	7.0-17.0	5.1-6.5	---	---	---
	42-60	4-10	2.0-7.0	6.1-8.4	0-30	---	---
802B:							
Orthents-----	0-2	22-30	---	5.6-7.3	---	---	---
	2-60	22-30	---	5.6-7.3	---	---	---
802E:							
Orthents-----	0-1	22-30	---	5.6-7.3	---	---	---
	1-60	22-30	---	5.6-7.3	---	---	---
844B2:							
Ava-----	0-5	20-27	13.0-20.0	4.5-7.3	---	---	---
	5-12	22-33	13.0-21.0	4.5-5.5	---	---	---
	12-30	24-35	14.0-22.0	4.5-5.5	---	---	---
	30-53	20-30	12.0-19.0	4.5-5.5	---	---	---
	53-60	20-30	12.0-19.0	4.5-6.0	---	---	---
Blair-----	0-8	20-27	14.0-22.0	5.1-7.3	---	---	---
	8-20	25-35	15.0-23.0	4.5-6.0	---	---	---
	20-38	18-35	11.0-22.0	5.1-7.8	0-5	---	---
	38-60	20-27	12.0-17.0	5.6-7.8	0-20	---	0-3
865:							
Pits, gravel.							
889A:							
Bluford-----	0-9	20-27	14.0-22.0	4.5-7.3	---	---	---
	9-15	15-25	9.0-17.0	3.6-6.0	---	---	---
	15-33	35-42	21.0-26.0	3.6-5.5	---	---	---
	33-60	22-35	13.0-22.0	3.6-6.0	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
889A:							
Darmstadt-----	0-13	10-27	7.0-20.0	5.1-7.3	---	0-2	0-5
	13-18	27-35	16.0-23.0	4.5-7.8	---	0-2	10-20
	18-40	27-35	16.0-23.0	6.6-9.0	0-5	0-2	10-25
	40-60	15-30	9.0-20.0	7.4-9.0	0-5	0-2	5-20
890C2:							
Ursa-----	0-5	15-27	11.0-22.0	4.5-7.3	---	---	---
	5-35	35-45	21.0-27.0	4.5-7.3	---	---	---
	35-60	25-45	15.0-27.0	5.6-7.8	0-5	---	---
Atlas-----	0-7	20-27	14.0-22.0	4.5-7.3	---	---	---
	7-22	35-45	21.0-29.0	4.5-7.3	---	---	---
	22-60	30-45	18.0-29.0	4.5-7.8	0-25	---	---
890C3:							
Ursa-----	0-3	15-27	11.0-22.0	4.5-7.3	---	---	---
	3-38	35-45	21.0-27.0	4.5-7.3	---	---	---
	38-60	25-45	15.0-27.0	5.6-7.8	0-5	---	---
Atlas-----	0-3	30-40	19.0-26.0	4.5-7.3	---	---	---
	3-37	35-45	21.0-29.0	4.5-7.3	---	---	---
	37-47	30-45	18.0-29.0	4.5-7.8	0-25	---	---
	47-60	20-30	12.0-20.0	6.1-7.8	0-25	---	---
890D2:							
Ursa-----	0-5	15-27	11.0-22.0	4.5-7.3	---	---	---
	5-38	35-45	21.0-27.0	4.5-7.3	---	---	---
	38-60	25-45	15.0-27.0	5.6-7.8	0-5	---	---
Atlas-----	0-7	20-27	14.0-22.0	4.5-7.3	---	---	---
	7-37	35-45	21.0-29.0	4.5-7.3	---	---	---
	37-60	30-45	18.0-29.0	4.5-7.8	0-25	---	---
891:							
Cisne-----	0-8	15-27	11.0-22.0	4.5-7.8	---	---	---
	8-19	15-27	9.0-17.0	4.5-6.0	---	---	---
	19-43	35-45	21.0-28.0	4.5-6.0	---	---	---
	43-60	25-37	15.0-23.0	5.1-6.5	---	---	---
Piassa-----	0-9	18-27	11.0-16.0	5.1-7.8	---	0-2	---
	9-18	18-27	11.0-16.0	5.6-7.8	---	0-2	---
	18-45	35-43	21.0-26.0	6.1-9.0	---	8-16	---
	45-60	20-35	12.0-21.0	7.4-9.0	---	2-16	---
896:							
Wynoose-----	0-9	15-25	10.0-19.0	4.5-7.8	---	---	---
	9-17	12-18	7.0-12.0	3.6-7.3	---	---	---
	17-55	35-42	21.0-26.0	3.6-6.0	---	---	---
	55-60	20-35	12.0-22.0	4.5-7.3	---	---	---
Huey-----	0-7	15-27	11.0-22.0	5.1-7.8	---	0-2	0-20
	7-14	11-25	6.0-10.0	5.1-7.8	---	0-2	0-20
	14-39	25-35	15.0-21.0	7.4-9.0	0-25	0-2	15-40
	39-60	18-35	11.0-21.0	6.6-8.4	0-30	0-2	10-40
913F:							
Hickory-----	0-5	19-25	14.0-19.0	4.5-7.3	---	---	---
	5-30	27-35	16.0-22.0	4.5-7.3	---	---	---
	30-60	15-32	9.0-19.0	5.1-8.4	0-15	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
913F:							
Marseilles-----	0-13	20-27	14.0-22.0	5.1-6.5	---	---	---
	13-32	27-42	16.0-27.0	4.5-6.5	---	---	---
	32-60	---	---	---	---	---	---
913G:							
Hickory-----	0-12	19-25	14.0-19.0	4.5-7.3	---	---	---
	12-52	27-35	16.0-22.0	4.5-7.3	---	---	---
	52-60	15-32	9.0-19.0	5.1-8.4	0-15	---	---
Marseilles-----	0-4	20-27	14.0-22.0	5.1-6.5	---	---	---
	4-32	27-42	16.0-27.0	4.5-6.5	---	---	---
	32-60	---	---	---	---	---	---
927C2:							
Blair-----	0-7	20-27	14.0-22.0	5.1-7.3	---	---	---
	7-30	25-35	15.0-23.0	4.5-6.0	---	---	---
	30-50	18-35	11.0-22.0	5.1-7.8	0-5	---	---
	50-60	20-27	12.0-17.0	5.6-7.8	0-20	---	0-3
Atlas-----	0-7	20-27	14.0-22.0	4.5-7.3	---	---	---
	7-16	35-45	21.0-29.0	4.5-7.3	---	---	---
	16-41	30-45	18.0-29.0	4.5-7.8	0-25	---	---
	41-60	20-30	12.0-20.0	6.1-7.8	0-25	---	---
967G:							
Hickory-----	0-7	19-25	14.0-19.0	4.5-7.3	---	---	---
	7-50	27-35	16.0-22.0	4.5-7.3	---	---	---
	50-60	15-32	9.0-19.0	5.1-8.4	0-15	---	---
Gosport-----	0-6	18-27	15.0-20.0	5.1-6.5	---	---	---
	6-26	36-60	30.0-50.0	3.6-5.5	---	---	---
	26-60	---	---	---	---	---	---
3074:							
Radford-----	0-15	18-27	15.0-24.0	5.6-7.8	---	---	---
	15-36	18-27	11.0-20.0	6.1-7.8	---	---	---
	36-60	24-35	14.0-23.0	6.6-7.8	---	---	---
3092B:							
Sarpy-----	0-4	2-5	2.0-8.0	6.6-8.4	0-15	---	---
	4-72	2-5	2.0-8.0	7.4-8.4	5-15	---	---
3225:							
Holton-----	0-7	5-18	4.0-17.0	5.6-7.3	---	---	---
	7-32	5-18	3.0-13.0	5.6-7.3	---	---	---
	32-60	5-20	2.0-14.0	5.6-7.8	---	---	---
3226:							
Wirt-----	0-15	10-18	5.0-17.0	5.6-7.3	---	---	---
	15-43	10-18	4.0-13.0	5.6-7.3	---	---	---
	43-60	8-18	4.0-13.0	5.6-7.3	---	---	---
3284A:							
Tice-----	0-10	27-35	20.0-27.0	6.1-7.8	---	---	---
	10-54	24-35	16.0-23.0	5.6-7.8	---	---	---
	54-60	15-30	9.0-20.0	5.6-7.8	0-20	---	---
3288:							
Petrolia-----	0-10	27-35	20.0-25.0	5.6-8.4	---	---	---
	10-60	27-35	15.0-20.0	6.1-7.3	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
3304A: Landes-----	0-14	10-22	8.0-17.0	5.6-8.4	---	---	---
	14-33	5-18	3.0-13.0	5.6-8.4	0-10	---	---
	33-60	5-18	3.0-13.0	5.6-8.4	0-20	---	---
3328: Holly-----	0-9	15-27	10.0-24.0	5.6-7.3	---	---	---
	9-44	18-30	10.0-18.0	5.1-7.3	---	---	---
	44-60	10-27	5.0-14.0	5.6-7.8	---	---	---
3331A: Haymond-----	0-7	10-20	10.0-17.0	5.6-7.8	---	---	---
	7-48	10-22	10.0-15.0	5.6-7.8	---	---	---
	48-60	5-26	7.0-15.0	6.1-7.8	---	---	---
3331B: Haymond-----	0-12	10-20	10.0-17.0	5.6-7.8	---	---	---
	12-60	10-22	10.0-15.0	5.6-7.8	---	---	---
3333: Wakeland-----	0-6	10-17	6.0-17.0	5.6-7.3	---	---	---
	6-60	10-17	4.0-13.0	5.6-7.8	---	---	---
3334: Birds-----	0-6	15-25	11.0-21.0	5.6-7.8	---	---	---
	6-60	18-27	11.0-20.0	5.1-7.8	---	---	---
3404: Titus-----	0-13	35-40	25.0-32.0	6.1-7.3	---	---	---
	13-60	35-45	21.0-29.0	6.1-7.8	---	---	---
3415: Orion-----	0-8	10-18	7.0-20.0	5.6-7.8	---	---	---
	8-24	10-18	7.0-20.0	5.6-7.8	---	---	---
	24-60	10-18	5.0-15.0	5.6-7.8	---	---	---
3424: Shoals-----	0-11	18-27	12.0-27.0	6.1-7.8	0-5	---	---
	11-60	12-25	5.0-17.0	6.1-8.4	0-25	---	---
3430A: Raddle-----	0-12	18-24	11.0-22.0	5.6-7.3	---	---	---
	12-42	18-24	12.0-18.0	5.6-7.3	---	---	---
	42-60	22-35	15.0-23.0	5.6-7.8	0-5	---	---
3451: Lawson-----	0-9	10-27	11.0-28.0	6.1-7.8	---	---	---
	9-27	10-30	11.0-29.0	6.1-7.8	---	---	---
	27-60	18-30	11.0-23.0	6.1-7.8	---	---	---
3603: Blackoar-----	0-15	18-27	25.0-30.0	5.6-7.3	---	---	---
	15-44	18-27	20.0-25.0	5.6-7.3	---	---	---
	44-60	18-30	25.0-30.0	5.6-7.3	---	---	---
3776+: Comfrey-----	0-11	18-27	18.0-36.0	6.1-7.8	---	---	---
	11-46	18-35	22.0-41.0	6.1-7.8	---	---	---
	46-60	18-35	12.0-29.0	6.6-8.4	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
7109: Raccoon-----	0-7	20-27	14.0-20.0	4.5-7.3	---	---	---
	7-25	18-25	11.0-16.0	4.5-7.3	---	---	---
	25-40	27-35	17.0-23.0	4.5-5.5	---	---	---
	40-60	18-30	10.0-20.0	5.6-7.3	---	---	---
7134B: Camden-----	0-7	14-27	10.0-20.0	5.1-7.3	---	---	---
	7-38	22-35	14.0-23.0	5.1-7.3	---	---	---
	38-60	5-20	3.0-13.0	5.6-8.4	0-20	---	---
7424: Shoals-----	0-8	18-27	12.0-27.0	6.1-7.8	0-5	---	---
	8-60	18-33	8.0-24.0	6.1-7.8	0-10	---	---

Table 18.--Soil Features

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
2: Cisne-----	>60	---	High	High	Moderate
3A: Hoyleton-----	>60	---	High	High	High
3B: Hoyleton-----	>60	---	High	High	High
5B2: Blair-----	>60	---	High	High	High
5B3: Blair-----	>60	---	High	High	High
5C2: Blair-----	>60	---	High	High	High
5C3: Blair-----	>60	---	High	High	High
6B2: Fishhook-----	>60	---	High	High	High
7B2: Atlas-----	>60	---	High	High	Moderate
7B3: Atlas-----	>60	---	High	High	Moderate
7C2: Atlas-----	>60	---	High	High	Moderate
7D2: Atlas-----	>60	---	High	High	Moderate
7D3: Atlas-----	>60	---	High	High	Moderate
8D2: Hickory-----	>60	---	Moderate	Moderate	Moderate
8D3: Hickory-----	>60	---	Moderate	Moderate	Moderate
8F: Hickory-----	>60	---	Moderate	Moderate	Moderate
8G: Hickory-----	>60	---	Moderate	Moderate	Moderate
12: Wynoose-----	>60	---	High	High	High
13A: Bluford-----	>60	---	High	High	High
13B: Bluford-----	>60	---	High	High	High

Table 18.--Soil Features--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
13B2: Bluford-----	>60	---	High	High	High
14B: Ava-----	>60	---	High	Moderate	High
14C2: Ava-----	>60	---	High	Moderate	High
27B2: Miami-----	>60	---	Moderate	Moderate	Moderate
27C2: Miami-----	>60	---	Moderate	Moderate	Moderate
27C3: Miami-----	>60	---	Moderate	Moderate	Moderate
27D2: Miami-----	>60	---	Moderate	Moderate	Moderate
27E: Miami-----	>60	---	Moderate	Moderate	Moderate
27G: Miami-----	>60	---	Moderate	Moderate	Moderate
48: Ebbert-----	>60	---	High	High	Moderate
50: Virden-----	>60	---	High	High	Moderate
109: Raccoon-----	>60	---	High	High	High
120: Huey-----	>60	---	High	High	Low
132A: Starks-----	>60	---	High	High	Moderate
132B: Starks-----	>60	---	High	High	Moderate
134A: Camden-----	>60	---	High	Low	Moderate
134B: Camden-----	>60	---	High	Low	Moderate
136: Brooklyn-----	>60	---	High	High	Moderate
138: Shiloh-----	>60	---	High	High	Low
152: Drummer-----	>60	---	High	High	Moderate

Table 18.--Soil Features--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
208: Sexton-----	>60	---	High	High	Moderate
212B: Thebes-----	>60	---	High	Moderate	High
218: Newberry-----	>60	---	High	High	High
219A: Millbrook-----	>60	---	High	High	Moderate
234A: Sunbury-----	>60	---	High	High	Moderate
236A: Sabina-----	>60	---	High	High	Moderate
291B: Xenia-----	>60	---	High	High	Moderate
322C2: Russell-----	>60	---	High	Moderate	Moderate
327B2: Fox-----	>60	---	Moderate	Low	Moderate
327C2: Fox-----	>60	---	Moderate	Low	Moderate
330: Peotone-----	>60	---	High	High	Moderate
353A: Toronto-----	>60	---	High	High	High
408: Aquents-----	>60	---	---	---	---
496A: Fincastle-----	>60	---	High	High	Moderate
570C2: Martinsville----	>60	---	Moderate	Moderate	Moderate
581B2: Tamalco-----	>60	---	High	High	Low
620A: Darmstadt-----	>60	---	High	High	High
621B2: Coulterville----	>60	---	High	High	High
631B2: Princeton-----	>60	---	Moderate	Moderate	Moderate
631C2: Princeton-----	>60	---	Moderate	Moderate	Moderate

Table 18.--Soil Features--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
631D2: Princeton-----	>60	---	Moderate	Moderate	Moderate
802B: Orthents-----	>60	---	Moderate	Moderate	Moderate
802E: Orthents-----	>60	---	Moderate	Moderate	Moderate
844B2: Ava-----	>60	---	High	Moderate	High
Blair-----	>60	---	High	High	High
865: Pits, gravel.					
889A: Bluford-----	>60	---	High	High	High
Darmstadt-----	>60	---	High	High	High
890C2: Ursa-----	>60	---	Moderate	High	Moderate
Atlas-----	>60	---	High	High	Moderate
890C3: Ursa-----	>60	---	Moderate	High	Moderate
Atlas-----	>60	---	High	High	Moderate
890D2: Ursa-----	>60	---	Moderate	High	Moderate
Atlas-----	>60	---	High	High	Moderate
891: Cisne-----	>60	---	High	High	Moderate
Piasa-----	>60	---	High	High	Low
896: Wynoose-----	>60	---	High	High	High
Huey-----	>60	---	High	High	Low
913F: Hickory-----	>60	---	Moderate	Moderate	Moderate
Marseilles-----	20-40	Soft	High	High	Moderate
913G: Hickory-----	>60	---	Moderate	Moderate	Moderate
Marseilles-----	20-40	Soft	High	High	Moderate
927C2: Blair-----	>60	---	High	High	High
Atlas-----	>60	---	High	High	Moderate

Table 18.--Soil Features--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
967G: Hickory-----	>60	---	Moderate	Moderate	Moderate
Gosport-----	20-40	Soft	Moderate	High	High
3074: Radford-----	>60	---	High	High	Low
3092B: Sarpy-----	>60	---	Low	Low	Low
3225: Holton-----	>60	---	High	Moderate	High
3226: Wirt-----	>60	---	Moderate	Low	Moderate
3284A: Tice-----	>60	---	High	High	Low
3288: Petrolia-----	>60	---	High	High	Low
3304A: Landes-----	>60	---	Moderate	Low	Low
3328: Holly-----	>60	---	High	High	Moderate
3331A: Haymond-----	>60	---	High	Low	Low
3331B: Haymond-----	>60	---	High	Low	Low
3333: Wakeland-----	>60	---	High	High	Low
3334: Birds-----	>60	---	High	High	Moderate
3404: Titus-----	>60	---	High	High	Low
3415: Orion-----	>60	---	High	High	Low
3424: Shoals-----	>60	---	High	High	Low
3430A: Raddle-----	>60	---	High	Moderate	Moderate
3451: Lawson-----	>60	---	High	Moderate	Low
3603: Blackoar-----	>60	---	High	High	Low
3776+: Comfrey-----	>60	---	High	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
7109: Raccoon-----	>60	---	High	High	High
7134B: Camden-----	>60	---	High	Low	Moderate
7424: Shoals-----	>60	---	High	High	Low

Table 19.--Water Features

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
2: Cisne-----	D	None	---	---	0.0-1.0	Perched	Feb-Jun	---	---
3A: Hoyleton-----	C	None	---	---	1.0-3.0	Apparent	Mar-Jun	---	---
3B: Hoyleton-----	C	None	---	---	1.0-3.0	Apparent	Mar-Jun	---	---
5B2: Blair-----	C	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---
5B3: Blair-----	C	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---
5C2: Blair-----	C	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---
5C3: Blair-----	C	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---
6B2: Fishhook-----	D	None	---	---	1.5-3.0	Perched	Mar-Jun	---	---
7B2: Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
7B3: Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
7C2: Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
7D2: Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
7D3: Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
8D2: Hickory-----	C	None	---	---	>6.0	---	---	---	---
8D3: Hickory-----	C	None	---	---	>6.0	---	---	---	---
8F: Hickory-----	C	None	---	---	>6.0	---	---	---	---
8G: Hickory-----	C	None	---	---	>6.0	---	---	---	---
12: Wynoose-----	D	None	---	---	0.0-1.0	Perched	Mar-Jun	---	---
13A: Bluford-----	C	None	---	---	1.0-3.0	Perched	Mar-Jun	---	---
13B: Bluford-----	C	None	---	---	1.0-3.0	Perched	Mar-Jun	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
13B2: Bluford-----	C	None	---	---	1.0-3.0	Perched	Mar-Jun	---	---
14B: Ava-----	C	None	---	---	1.5-3.5	Perched	Mar-Jun	---	---
14C2: Ava-----	C	None	---	---	1.5-3.5	Perched	Mar-Jun	---	---
27B2: Miami-----	B	None	---	---	>6.0	---	---	---	---
27C2: Miami-----	B	None	---	---	>6.0	---	---	---	---
27C3: Miami-----	B	None	---	---	>6.0	---	---	---	---
27D2: Miami-----	B	None	---	---	>6.0	---	---	---	---
27E: Miami-----	B	None	---	---	>6.0	---	---	---	---
27G: Miami-----	B	None	---	---	>6.0	---	---	---	---
48: Ebbert-----	C/D	None	---	---	+0.5-1.0	Apparent	Apr-Jul	Brief	0.5
50: Virden-----	B/D	None	---	---	+0.5-1.0	Apparent	Mar-Jun	Brief	0.5
109: Raccoon-----	C/D	None	---	---	+0.5-1.0	Apparent	Mar-Jun	Brief	0.5
120: Huey-----	D	None	---	---	+0.5-1.0	Perched	Mar-Jun	Brief	0.5
132A: Starks-----	C	None	---	---	1.0-3.0	Apparent	Mar-Jun	---	---
132B: Starks-----	C	None	---	---	1.0-3.0	Apparent	Mar-Jun	---	---
134A: Camden-----	B	None	---	---	>6.0	---	---	---	---
134B: Camden-----	B	None	---	---	>6.0	---	---	---	---
136: Brooklyn-----	C/D	None	---	---	+0.5-1.0	Apparent	Mar-Jun	Brief	0.5
138: Shiloh-----	B/D	None	---	---	+1.0-1.0	Apparent	Mar-Jun	Brief	1.0
152: Drummer-----	B/D	None	---	---	+0.5-1.0	Apparent	Mar-Jun	Brief	0.5

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
208: Sexton-----	C/D	None	---	---	0.0-1.0	Apparent	Jan-Jun	---	---
212B: Thebes-----	B	None	---	---	>6.0	---	---	---	---
218: Newberry-----	C	None	---	---	0.0-1.0	Apparent	Mar-Jun	---	---
219A: Millbrook-----	B	None	---	---	1.0-3.0	Apparent	Mar-Jun	---	---
234A: Sunbury-----	B	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---
236A: Sabina-----	C	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---
291B: Xenia-----	B	None	---	---	2.0-3.5	Apparent	Dec-Apr	---	---
322C2: Russell-----	B	None	---	---	>6.0	---	---	---	---
327B2: Fox-----	B	None	---	---	>6.0	---	---	---	---
327C2: Fox-----	B	None	---	---	>6.0	---	---	---	---
330: Peotone-----	B/D	None	---	---	+0.5-1.0	Apparent	Feb-Jul	Brief	0.5
353A: Toronto-----	C	None	---	---	1.0-3.0	Apparent	Jan-Apr	---	---
408: Aquents-----		None	---	---	+0.5-2.0	Apparent	Jan-Dec	Very long	0.5
496A: Fincastle-----	C	None	---	---	1.0-3.0	Apparent	Jan-Apr	---	---
570C2: Martinsville----	B	None	---	---	>6.0	---	---	---	---
581B2: Tamalco-----	D	None	---	---	2.5-5.0	Apparent	Feb-May	---	---
620A: Darmstadt-----	D	None	---	---	1.0-3.0	Perched	Feb-May	---	---
621B2: Coulterville----	D	None	---	---	1.0-3.0	Perched	Feb-Jun	---	---
631B2: Princeton-----	B	None	---	---	>6.0	---	---	---	---
631C2: Princeton-----	B	None	---	---	>6.0	---	---	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
631D2: Princeton-----	B	None	---	---	>6.0	---	---	---	---
802B: Orthents-----	B	None	---	---	4.0-6.0	Apparent	Mar-May	---	---
802E: Orthents-----	B	None	---	---	4.0-6.0	Apparent	Mar-May	---	---
844B2: Ava-----	C	None	---	---	1.5-3.5	Perched	Mar-Jun	---	---
Blair-----	C	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---
865: Pits, gravel.									
889A: Bluford-----	C	None	---	---	1.0-3.0	Perched	Mar-Jun	---	---
Darmstadt-----	D	None	---	---	1.0-3.0	Perched	Feb-May	---	---
890C2: Ursa-----	C	None	---	---	>6.0	---	---	---	---
Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
890C3: Ursa-----	C	None	---	---	>6.0	---	---	---	---
Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
890D2: Ursa-----	C	None	---	---	>6.0	---	---	---	---
Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
891: Cisne-----	D	None	---	---	0.0-1.0	Perched	Feb-Jun	---	---
Piasa-----	D	None	---	---	+0.5-1.0	Perched	Feb-May	Brief	0.5
896: Wynoose-----	D	None	---	---	0.0-1.0	Perched	Mar-Jun	---	---
Huey-----	D	None	---	---	+0.5-1.0	Perched	Mar-Jun	Brief	0.5
913F: Hickory-----	C	None	---	---	>6.0	---	---	---	---
Marseilles-----	B	None	---	---	>6.0	---	---	---	---
913G: Hickory-----	C	None	---	---	>6.0	---	---	---	---
Marseilles-----	B	None	---	---	>6.0	---	---	---	---
927C2: Blair-----	C	None	---	---	1.5-3.5	Apparent	Mar-Jun	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
927C2: Atlas-----	D	None	---	---	1.0-2.0	Perched	Apr-Jun	---	---
967G: Hickory-----	C	None	---	---	>6.0	---	---	---	---
Gosport-----	C	None	---	---	1.5-3.0	Perched	Jan-Apr	---	---
3074: Radford-----	B	Frequent	Brief	Nov-Jun	1.0-3.0	Apparent	Mar-Jun	---	---
3092B: Sarpy-----	A	Frequent	Brief	Nov-Jun	>6.0	---	---	---	---
3225: Holton-----	C	Frequent	Brief	Nov-Jun	1.0-3.0	Apparent	Nov-Jun	---	---
3226: Wirt-----	B	Frequent	Brief	Nov-Jun	>6.0	---	---	---	---
3284A: Tice-----	B	Frequent	Brief	Nov-Jun	1.5-3.0	Apparent	Mar-Jun	---	---
3288: Petrolia-----	C/D	Frequent	Long	Nov-Jun	+0.5-1.0	Apparent	Apr-Jun	Brief	0.5
3304A: Landes-----	B	Frequent	Brief	Nov-Jun	>6.0	---	---	---	---
3328: Holly-----	B/D	Frequent	Brief	Nov-Jun	+0.5-1.0	Apparent	Dec-May	Brief	0.5
3331A: Haymond-----	B	Frequent	Brief	Nov-Jun	>6.0	---	---	---	---
3331B: Haymond-----	B	Frequent	Brief	Nov-Jun	>6.0	---	---	---	---
3333: Wakeland-----	C	Frequent	Brief	Nov-Jun	1.0-3.0	Apparent	Jan-Apr	---	---
3334: Birds-----	C/D	Frequent	Brief	Nov-Jun	+0.5-1.0	Apparent	Mar-Jun	Brief	0.5
3404: Titus-----	B/D	Frequent	Brief	Nov-Jun	+0.5-1.0	Apparent	Mar-Jun	Brief	0.5
3415: Orion-----	C	Frequent	Brief	Nov-Jun	1.0-3.0	Apparent	Nov-May	---	---
3424: Shoals-----	C	Frequent	Brief	Nov-Jun	0.5-1.5	Apparent	Jan-Apr	---	---
3430A: Raddle-----	B	Frequent	Brief	Nov-Jun	>6.0	---	---	---	---
3451: Lawson-----	C	Frequent	Long	Nov-Jun	1.0-3.0	Apparent	Nov-May	---	---

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
3603: Blackoar-----	B/D	Frequent	Brief	Nov-Jun	0.0-1.0	Apparent	Nov-May	---	---
3776+: Comfrey-----	B/D	Frequent	Brief	Nov-Jun	0.5-1.5	Apparent	Apr-Jul	---	---
7109: Raccoon-----	C/D	Rare	---	---	0.0-1.0	Apparent	Mar-Jun	---	---
7134B: Camden-----	B	Rare	---	---	>6.0	---	---	---	---
7424: Shoals-----	C	Rare	---	---	0.5-1.5	Apparent	Jan-Apr	---	---

Table 20.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of the characteristics of the soils that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Aquents-----	Aquents
Atlas-----	Aeric Ochraqualfs, fine, montmorillonitic, mesic, sloping
Ava-----	Typic Fragiudalfts, fine-silty, mixed, mesic
Birds-----	Typic Fluvaquents, fine-silty, mixed, nonacid, mesic
Blackoar-----	Fluvaquentic Haplaquolls, fine-silty, mixed, mesic
*Blair-----	Aquic Hapludalfts, fine-silty, mixed, mesic
Bluford-----	Aeric Ochraqualfs, fine, montmorillonitic, mesic
Brooklyn-----	Mollic Albaqualfs, fine, montmorillonitic, mesic
Camden-----	Typic Hapludalfts, fine-silty, mixed, mesic
Cisne-----	Mollic Albaqualfs, fine, montmorillonitic, mesic
Comfrey-----	Cumulic Haplaquolls, fine-loamy, mixed, mesic
Coulterville-----	Aeric Ochraqualfs, fine-silty, mixed, mesic
Darmstadt-----	Albic Natraqualfs, fine-silty, mixed, mesic
Drummer-----	Typic Haplaquolls, fine-silty, mixed, mesic
Ebbert-----	Argiaquic Argialbolls, fine-silty, mixed, mesic
Fincastle-----	Aeric Ochraqualfs, fine-silty, mixed, mesic
Fishhook-----	Aquic Hapludalfts, fine-silty, mixed, mesic
*Fox-----	Typic Hapludalfts, fine-loamy over sandy or sandy-skeletal, mixed, mesic
Gosport-----	Typic Dystrochrepts, fine, illitic, mesic
Haymond-----	Typic Udifluvents, coarse-silty, mixed, nonacid, mesic
Hickory-----	Typic Hapludalfts, fine-loamy, mixed, mesic
Holly-----	Typic Fluvaquents, fine-loamy, mixed, nonacid, mesic
Holton-----	Aeric Fluvaquents, coarse-loamy, mixed, nonacid, mesic
Hoyleton-----	Aquollic Hapludalfts, fine, montmorillonitic, mesic
Huey-----	Typic Natraqualfs, fine-silty, mixed, mesic
Landes-----	Fluventic Hapludolls, coarse-loamy, mixed, mesic
Lawson-----	Cumulic Hapludolls, fine-silty, mixed, mesic
Marseilles-----	Typic Hapludalfts, fine-silty, mixed, mesic
Martinsville-----	Typic Hapludalfts, fine-loamy, mixed, mesic
Miami-----	Typic Hapludalfts, fine-loamy, mixed, mesic
Millbrook-----	Udollic Ochraqualfs, fine-silty, mixed, mesic
Newberry-----	Mollic Ochraqualfs, fine-silty, mixed, mesic
Orion-----	Aquic Udifluvents, coarse-silty, mixed, nonacid, mesic
Orthents-----	Typic Udorthents, fine-loamy, mixed, nonacid, mesic
Peotone-----	Vertic Haplaquolls, fine, montmorillonitic, mesic
Petrolia-----	Typic Fluvaquents, fine-silty, mixed, nonacid, mesic
Piassa-----	Mollic Natraqualfs, fine, montmorillonitic, mesic
Princeton-----	Typic Hapludalfts, fine-loamy, mixed, mesic
Raccoon-----	Typic Ochraqualfs, fine-silty, mixed, mesic
Raddle-----	Typic Hapludolls, fine-silty, mixed, mesic
Radford-----	Fluvaquentic Hapludolls, fine-silty, mixed, mesic
Russell-----	Typic Hapludalfts, fine-silty, mixed, mesic
Sabina-----	Aeric Ochraqualfs, fine, montmorillonitic, mesic
Sarpy-----	Typic Udipsamments, mixed, mesic
Sexton-----	Typic Ochraqualfs, fine, montmorillonitic, mesic
Shiloh-----	Cumulic Haplaquolls, fine, montmorillonitic, mesic
Shoals-----	Aeric Fluvaquents, fine-loamy, mixed, nonacid, mesic
Starks-----	Aeric Ochraqualfs, fine-silty, mixed, mesic
Sunbury-----	Aquollic Hapludalfts, fine, montmorillonitic, mesic
Tamalco-----	Typic Natrudalfts, fine, montmorillonitic, mesic
*Thebes-----	Typic Hapludalfts, fine-silty over sandy or sandy-skeletal, mixed, mesic
Tice-----	Fluvaquentic Hapludolls, fine-silty, mixed, mesic
Titus-----	Fluvaquentic Haplaquolls, fine, montmorillonitic, mesic
Toronto-----	Udollic Ochraqualfs, fine-silty, mixed, mesic
Ursa-----	Typic Hapludalfts, fine, montmorillonitic, mesic
Virden-----	Typic Argiaquolls, fine, montmorillonitic, mesic
Wakeland-----	Aeric Fluvaquents, coarse-silty, mixed, nonacid, mesic
Wirt-----	Typic Udifluvents, coarse-loamy, mixed, nonacid, mesic
Wynoose-----	Typic Albaqualfs, fine, montmorillonitic, mesic
Xenia-----	Aquic Hapludalfts, fine-silty, mixed, mesic

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