

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (U.S. Dep. Agric., 1975). 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 19 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven 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 Aridisol.

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 Argid (*Arg*, meaning having an argillic horizon, plus *id*, from Aridisol).

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 Haplargid (*Hapl*, meaning minimal horizonation, plus *argid*, the suborder of the Aridisols that has an argillic horizon).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic 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.

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-loamy, mixed, Borollic Haplargids.

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. The Alcova series is an example of a fine-loamy, mixed, Borollic Haplargid.

Soil Series and Their Morphology

In this section, each soil series or soil family 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 (U.S. Dep. Agric., 1993). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (U.S. Dep. Agric., 1975). Unless otherwise stated, matrix colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Aberone Series

The Aberone series consists of very deep, well drained soils on dissected fan terraces. They formed in alluvium. Slope ranges from 0 to 15 percent. Elevation is 5,500 to 6,000 feet, average annual precipitation is 12 to 14 inches, and average annual air temperature is 45 to 49 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Aberone soil, in an area of Aberone gravelly sandy loam, 0 to 15 percent slopes,

500 feet west, 500 feet south of the northeast corner of sec. 31, T. 22 N., R. 70 W.

A—0 to 8 inches; brown (7.5YR 4/2) gravelly sandy loam, dark brown (7.5YR 3/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; common fine and very fine roots; 15 percent fine gravel; slightly alkaline; clear smooth boundary.

Bk1—8 to 15 inches; pinkish gray (7.5YR 6/2) very gravelly sandy loam, brown (7.5YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few fine pores; violently effervescent, calcium carbonate is disseminated and also occurs as thin pendants on rock fragments; 35 percent fine gravel; moderately alkaline; gradual wavy boundary.

Bk2—15 to 60 inches; very pale brown (10YR 7/3) extremely gravelly coarse sandy loam, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and nonplastic; violently effervescent, calcium carbonate is disseminated and also occurs as common thin pendants on rock fragments; 20 percent cobbles and 50 percent gravel; moderately alkaline.

The Bk horizon has a moderately alkaline or strongly alkaline reaction. The calcium carbonate equivalent in this horizon is 40 to 55 percent.

Abston Series

The Abston series consists of moderately deep, well drained soils on hillslopes and terrace escarpments. They formed in residuum and local alluvium derived from shale. Slope ranges from 5 to 25 percent. Elevation is 6,800 to 7,000 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Abston loam, in an area of Abston-Bullock complex, 5 to 25 percent slopes, 650 feet east, 900 feet south of the northwest corner of sec. 28, T. 19 N., R. 76 W.

A—0 to 2 inches; dark yellowish brown (10YR 4/4) loam, brown (10YR 4/3) moist; moderate very fine granular structure; soft, very friable, slightly sticky and plastic; many fine and common medium roots; common very fine constricted random vesicular pores; slightly alkaline; abrupt smooth boundary.

Btn1—2 to 3 inches; dark yellowish brown (10YR 4/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and very plastic; many fine and common medium roots; few very fine constricted irregular pores; few prominent clay films on faces of peds; slightly effervescent, calcium carbonate is

disseminated; strongly alkaline; abrupt smooth boundary.

Btn2—3 to 18 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong very coarse prismatic structure parting to strong coarse subangular blocky; very hard, firm, very sticky and very plastic; many fine and common medium roots; few very fine constricted irregular pores; common prominent clay films on faces of peds and in root channels; slightly effervescent, calcium carbonate is disseminated; very strongly alkaline; clear wavy boundary.

Bk—18 to 25 inches; yellowish brown (10YR 5/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; strong very coarse prismatic structure; very hard, firm, very sticky and very plastic; few very fine constricted irregular pores; slightly effervescent, calcium carbonate is disseminated; very strongly alkaline; gradual wavy boundary.

Cr—25 to 60 inches; weakly consolidated calcareous sodic shale.

The depth to bedrock ranges from 20 to 40 inches. Reaction is neutral or slightly alkaline in the A horizon, and strongly alkaline or very strongly alkaline in the B horizons. The B horizons have textures of clay loam, silty clay loam, or clay. Electrical conductivity in the B horizons is 2 to 8 millimhos per centimeter.

Alcova Series

The Alcova series consists of very deep, well drained soils on alluvial fans and terraces. They formed in alluvium. In some areas, the alluvium overlies residuum derived from redbed sandstone. Slope ranges from 0 to 10 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Alcova sandy loam, in an area of Alcova-Borollic Camborthids complex, 0 to 8 percent slopes, 700 feet east, 2,640 feet north of the southwest corner of sec. 35, T. 17 N., R. 74 W.

A—0 to 3 inches; pale brown (10YR 6/3) sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and common medium roots; moderately alkaline; abrupt smooth boundary.

Bt—3 to 15 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to strong medium subangular blocky; hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many faint and few prominent clay films on

faces of peds; moderately alkaline; clear smooth boundary.

Bk—15 to 37 inches; very pale brown (10YR 7/3) sandy clay loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, sticky and slightly plastic; few fine and medium roots; violently effervescent, calcium carbonate is disseminated; strongly alkaline; gradual wavy boundary.

2Bk—37 to 60 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and nonplastic; strongly effervescent, calcium carbonate is disseminated and also occurs as coatings on rock fragments; 40 percent gravel; strongly alkaline.

The surface is 0 to 40 percent covered with gravel. The A and Bt horizons have slightly alkaline or moderately alkaline reactions. The Bk and 2Bk horizons have moderately alkaline or strongly alkaline reactions.

The Bt horizon is 0 to 30 percent gravel. It has a texture of clay loam, sandy clay loam, or gravelly sandy clay loam. The Bk horizon has a texture of sandy clay loam or clay loam. This horizon is absent in some pedons. The 2Bk horizon has a texture of very gravelly sandy clay loam, very gravelly loam, very gravelly sandy loam, or extremely gravelly sandy loam. This horizon is 40 to 60 percent gravel and 0 to 10 percent cobbles. The depth to the 2Bk horizon ranges from 16 to 37 inches.

Alderon Series

The Alderon series consists of moderately deep, well drained soils on foothills and mountain slopes. They formed in colluvium and residuum derived dominantly from granite. Slope ranges from 5 to 50 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Alderon sandy loam, in an area of Rock outcrop-Cathedral-Alderon complex, 25 to 50 percent slopes, 600 feet north, 1,100 feet east of the southwest corner of sec. 14, T. 21 N., R. 71 W.

Oi— 2 inches to 1; undecomposed forest litter.

Oe— 1 inch to 0; decomposed needles, twigs, and bark.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) sandy loam, very dark brown (10YR 2/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common fine and medium, and few coarse roots; 10 percent gravel; neutral; abrupt wavy boundary.

E—2 to 7 inches; light brown (7.5YR 6/4) sandy clay loam, dark brown (7.5YR 4/4) moist; weak fine platy structure; soft, very friable, slightly sticky and slightly

plastic; common fine and medium, and few coarse roots; 10 percent gravel; neutral; abrupt smooth boundary.

Bt—7 to 26 inches; yellowish red (5YR 4/6) gravelly sandy clay loam, reddish brown (5YR 4/4) moist; strong coarse and medium subangular blocky structure; hard, firm, sticky and plastic; few medium and coarse roots; few prominent clay films on faces of peds; 30 percent gravel; neutral; clear wavy boundary.

C—26 to 39 inches; brown (7.5YR 4/4) very gravelly coarse sandy loam, dark brown (7.5YR 3/4) moist; single grain; loose, nonsticky and nonplastic; few coarse roots; 45 percent gravel; neutral; clear wavy boundary.

Cr—39 inches; weakly consolidated granite.

The depth to bedrock ranges from 20 to 40 inches. The hue is 7.5YR or 10YR in the E and C horizons, and 5YR through 10YR in the Bt horizon. The E horizon has a texture of sandy clay loam or gravelly sandy loam; it is 10 to 25 percent gravel. The Bt horizon is 20 to 35 percent gravel. The C horizon has a texture of very gravelly sandy loam or very gravelly coarse sandy loam; it is 40 to 50 percent gravel. Reaction in the C horizon is neutral or slightly alkaline.

Almy Series

The Almy series consists of very deep, well drained soils on alluvial fan aprons, foot slopes, and dip slopes. They formed in alluvium and residuum derived from reddish sandstone and shale. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Almy soil, in an area of Almy loam, 0 to 8 percent slopes, 300 feet east, 1,150 feet south of the northwest corner of sec. 3, T. 12 N., R. 75 W.

A—0 to 2 inches; reddish brown (5YR 4/4) loam, dark reddish brown (5YR 3/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and few medium roots; moderately alkaline; abrupt smooth boundary.

Bt—2 to 11 inches; reddish brown (5YR 4/4) loam, dark reddish brown (5YR 3/4) moist; moderate medium columnar structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many fine and few medium roots; common distinct clay films on faces of peds; slightly effervescent; moderately alkaline; clear smooth boundary.

Btk—11 to 22 inches; reddish yellow (5YR 6/6) loam, yellowish red (5YR 4/5) moist; weak medium columnar structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common distinct clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine irregular soft masses; strongly alkaline; clear smooth boundary.

Bk1—22 to 35 inches; yellowish red (5YR 5/5) sandy clay loam, reddish brown (5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as few fine irregular soft masses and as thin coatings and pendants on rock fragments; 5 percent cobbles; moderately alkaline; clear smooth boundary.

Bk2—35 to 60 inches; yellowish red (5YR 5/5) sandy loam, reddish brown (5YR 5/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as few fine irregular soft masses and concretions; 5 percent gravel and cobbles; strongly alkaline.

The A horizon has hue of 5YR or 7.5YR. Reaction in the A and Bt horizons is slightly alkaline or moderately alkaline. The Bt horizon commonly has a texture of loam, but in some pedons it is sandy clay loam. The Bk horizon has a texture of sandy clay loam, loam, very fine sandy loam, or sandy loam. It has a moderately alkaline or strongly alkaline reaction. The Bk horizon is 0 to 5 percent gravel and 0 to 5 percent cobbles.

Alogia Series

The Alogia consists of very deep, moderately well drained soils in drainageways and on alluvial fans and stream terraces. They formed in alluvium from reddish sandstone and shale. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Alogia soil, in an area of Alogia loam, 0 to 3 percent slopes, 2,600 feet north, 2,150 feet east of the southwest corner of sec. 32, T. 15 N., R. 73 W.

A—0 to 3 inches; brown (7.5YR 5/4) loam, dark brown (7.5YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

Bt—3 to 7 inches; brown (7.5YR 5/4) loam, dark brown (7.5YR 4/3) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common fine and medium roots; few prominent clay films in pores and root channels; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Btk1—7 to 15 inches; light reddish brown (5YR 6/3) clay loam, reddish brown (5YR 4/3) moist; moderate medium and fine subangular blocky structure; soft, friable, sticky and plastic; few fine roots; common faint clay films on faces of peds; violently effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 13 percent; few fine soft masses of gypsum; strongly alkaline; clear smooth boundary.

Btk2—15 to 21 inches; light reddish brown (5YR 6/4) clay loam, reddish brown (5YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, sticky and plastic; few fine roots; few faint clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 17 percent; few fine soft masses of gypsum; moderately alkaline; gradual smooth boundary.

Bky1—21 to 31 inches; pink (7.5YR 7/4) loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; violently effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 8 percent; many fine and medium soft masses of gypsum; moderately alkaline; gradual smooth boundary.

Bky2—31 to 41 inches; pink (5YR 7/3) loam, reddish brown (5YR 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; violently effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 15 percent; many fine and medium soft masses of gypsum; moderately alkaline; gradual smooth boundary.

2Cy—41 to 50 inches; reddish brown (2.5YR 5/4) clay loam, dark reddish brown (2.5YR 3/4) moist; massive; slightly hard, friable, sticky and plastic; strongly effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 5 percent; common fine soft masses of gypsum; moderately alkaline; gradual smooth boundary.

2C—50 to 60 inches; reddish yellow (5YR 6/6) clay loam, reddish brown (5YR 4/4) moist; massive; very hard, firm, sticky and plastic; strongly effervescent, calcium carbonate is disseminated; few fine soft masses of gypsum; slightly alkaline.

The depth to a seasonal high water table ranges from 3.0 to 5.0 feet from April through July. The hue is 5YR or

7.5YR in the A and B horizons, and 2.5YR or 5YR in the 2C horizon. Electrical conductivity is 2 to 8 millimhos per centimeter in the Bt horizon, and 4 to 8 millimhos per centimeter in the Bk and 2C horizons. Reaction is slightly alkaline or moderately alkaline in the A and 2C horizons, and moderately alkaline or strongly alkaline in the B horizons.

The Bt horizon commonly has a texture of clay loam, but in some pedons it is loam or silty clay loam. The Bk horizon has a texture of loam or silt loam. Calcium carbonate equivalent in this horizon is 15 to 20 percent. The Bk horizon is 10 to 20 percent gypsum. The 2C horizon has a texture of clay loam, loam, or silt loam. Calcium carbonate equivalent in this horizon is 5 to 20 percent. The C horizon is 10 to 20 percent gypsum.

Amesmont Series

The Amesmont series consists of moderately deep, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 3 to 20 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Amesmont fine sandy loam, in an area of Hapjack-Rogert-Amesmont complex, 3 to 25 percent slopes, 2,000 feet east, 90 feet north of the southwest corner of sec. 24, T. 14 N., R. 72 W.

- A—0 to 5 inches; brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium granular structure; soft, very friable, nonsticky and nonplastic; many fine roots; less than 5 percent gravel; neutral; abrupt smooth boundary.
- Bt1—5 to 14 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak medium prismatic structure parting to moderate coarse subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; many faint and few distinct clay films on faces of peds; 10 percent gravel; neutral; clear smooth boundary.
- Bt2—14 to 20 inches; brown (7.5YR 5/4) gravelly sandy clay loam, dark brown (7.5YR 3/4) moist; weak coarse and moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common distinct clay films on faces of peds; 20 percent gravel; neutral; gradual wavy boundary.
- C—20 to 33 inches; strong brown (7.5YR 4/6) very gravelly sandy clay loam, strong brown (7.5YR 4/6) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; 40 percent gravel; neutral; gradual wavy boundary.

Cr—33 inches; highly weathered granite saprolith.

The surface is 10 to 30 percent covered with fine gravel. The depth to bedrock ranges from 20 to 40 inches. The particle-size control section is 20 to 30 percent clay and 35 to 50 percent fine or coarser sand. Reaction is neutral or slightly alkaline throughout the profile.

The A horizon is 0 to 15 percent gravel. The Bt horizon has hue of 5YR or 7.5YR; it has a texture of sandy clay loam or gravelly sandy clay loam. The Bt horizon is 10 to 30 percent gravel. The C horizon has a texture of very gravelly sandy clay loam, very gravelly sandy loam, or very gravelly loamy sand; it is 35 to 60 percent gravel.

Anchutz Series

The Anchutz series consists of very deep, well drained soils on fan terraces. They formed in alluvium. Slope ranges from 1 to 8 percent. Elevation is 6,800 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Anchutz soil, in an area of Anchutz sandy loam, 1 to 8 percent slopes, 2,900 feet north, 35 feet west of the southeast corner of sec. 17, T. 19 N., R. 77 W.

- A—0 to 2 inches; brown (10YR 5/3) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and few medium roots; moderately alkaline; abrupt smooth boundary.
- Bt1—2 to 10 inches; dark yellowish brown (10YR 4/4) sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly plastic and sticky; common fine roots to a depth of 6 inches, few fine roots at a depth of 6 to 10 inches; common distinct clay films on faces of peds; moderately alkaline; clear smooth boundary.
- Bt2—10 to 15 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly plastic and sticky; few fine roots; common distinct clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual smooth boundary.
- Bk1—15 to 31 inches; very pale brown (10YR 7/3) clay loam, light yellowish brown (10YR 6/4) moist; weak fine subangular blocky structure; hard, firm, slightly plastic and sticky; few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as many medium soft masses, 20 percent

calcium carbonate equivalent by calcimeter method; strongly alkaline; gradual smooth boundary.

Bk2—31 to 39 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly plastic and sticky; few fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses, 9 percent calcium carbonate equivalent by calcimeter method; 5 percent gravel; strongly alkaline; gradual wavy boundary.

Bk3—39 to 60 inches; light yellowish brown (10YR 6/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; slightly effervescent, calcium carbonate is disseminated; strongly alkaline.

The particle-size control section is 20 to 30 percent clay. The A and Bt horizons have slightly alkaline or moderately alkaline reactions. The Bk horizon has a texture of sandy clay loam or clay loam in the upper part and sandy loam or sandy clay loam in the lower part. In some parts of this horizon above a depth of 40 inches, the calcium carbonate equivalent is 15 to 25 percent.

Ansel Series

The Ansel series consists of very deep, well drained soils on foothills and mountain alluvial fans. They formed in alluvium derived from igneous and metamorphic rock. Slope ranges from 6 to 45 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Ansel gravelly sandy loam, 6 percent slope, in a area of Ansel-Granite gravelly sandy loams, 6 to 45 percent slopes, 500 feet north, 600 feet west of the southeast corner of sec. 13, T. 14 N., R. 78 W.

Oi—2 inches to 0; pine needles and bark residue.

E—0 to 6 inches; light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak platy structure parting to moderate medium subangular blocky; soft, very friable, nonsticky and nonplastic; common medium and fine roots; 20 percent gravel; neutral; abrupt smooth boundary.

Bt1—6 to 18 inches; light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and fine roots; many distinct clay films on faces of peds; 25 percent gravel; neutral; abrupt wavy boundary.

Bt2—18 to 24 inches; light yellowish brown (10YR 6/4) gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; moderate medium angular blocky structure;

slightly hard, friable, slightly sticky and slightly plastic; common medium and fine roots; common faint clay films on faces of peds; 20 percent gravel; neutral; clear wavy boundary.

C—24 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; 40 percent gravel; neutral.

The Bt horizon is 25 to 35 percent clay and 15 to 30 percent gravel. The C horizon is 35 to 50 percent gravel.

Bateson Series

The Bateson series consists of very deep, well drained soils on knobs and breaks of the dissected pediments to the Laramie Range. They formed in alluvium overlying residuum derived dominantly from tuffaceous conglomerate. Slope ranges from 8 to 15 percent. Elevation is 7,200 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Bateson gravelly sandy clay loam, in an area of Bateson-Shirleybasin association, 1 to 15 percent slopes, 750 feet south, 625 feet west of the northeast corner of sec. 17, T. 27 N., R. 76 W.

A—0 to 2 inches; brown (10YR 5/3) gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium granular structure; soft, friable, sticky and plastic; many very fine roots; the surface is 25 percent covered with gravel; neutral; clear wavy boundary.

Bt1—2 to 10 inches; brown (7.5YR 5/4) gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; weak coarse prismatic structure parting to moderate coarse subangular blocky; hard, firm, sticky and plastic; many very fine roots; common faint clay films on faces of peds and on gravel; 25 percent fine gravel; slightly alkaline; clear wavy boundary.

Bt2—10 to 21 inches; dark brown (7.5YR 4/4) gravelly sandy clay loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine roots; few faint clay films on faces of peds; 30 percent fine gravel; slightly alkaline; clear wavy boundary.

Bk1—21 to 29 inches; red (2.5YR 5/6) very gravelly sandy loam, red (2.5YR 4/6) moist; massive; soft, friable, slightly sticky and nonplastic; few very fine roots; 60 percent fine gravel; strongly effervescent, calcium carbonate as common fine threads and as pendants on gravel; slightly alkaline; clear wavy boundary.

Bk2—29 to 60 inches; pink (5YR 7/3) very gravelly loamy sand, reddish brown (5YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; strongly

effervescent, calcium carbonate is disseminated and also occurs as many large irregular seams and as pendants on gravel; 60 percent fine gravel; strongly alkaline.

Reaction is slightly alkaline or moderately alkaline reaction in the Bk1 horizon, and moderately alkaline or strongly alkaline in the Bk2 horizon.

Blackhall Series

The Blackhall series consists of shallow, well drained soils on ridges and hillslopes. They formed in residuum and colluvium derived from sandstone. Slope ranges from 5 to 45 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Blackhall sandy loam, in an area of Blackhall-Satanka-Rock outcrop complex, 5 to 20 percent slopes, 1,900 feet west, 300 feet south of the northeast corner of sec. 1, T. 14 N., R. 74 W.

- A—0 to 2 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate coarse platy structure parting to moderate medium granular; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; the surface is 20 percent covered with channery fragments; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
- Bw—2 to 9 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine and medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
- C—9 to 16 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few medium roots; slightly effervescent, calcium carbonate is disseminated; 13 percent gravel; moderately alkaline.
- Cr—16 inches; weakly consolidated sandstone.

The surface is 20 to 40 percent covered with gravel, channers, stones, or flagstones. The depth to bedrock ranges from 10 to 20 inches. The particle-size control section is 5 to 15 percent clay and 0 to 15 percent rock fragments. The Bw horizon is not a cambic horizon, and it is absent in some pedons.

The A horizon is 0 to 45 percent gravel. It has a slightly alkaline or moderately alkaline reaction. The C horizon has a texture of fine sandy loam or sandy loam; it is 0 to

15 percent gravel. The C horizon is 0 to 40 percent soft sandstone fragments that break down when moistened and rubbed.

Blazon Series

The Blazon series consists of very shallow or shallow and well drained soils on hills, ridges, fan terraces, and escarpments. They formed in residuum and colluvium derived from shale, loamstone, and sandstone. Slope ranges from 1 to 45 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 17 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Blazon clay loam, in an area of Chaperton, moderately saline-Blazon complex, 8 to 20 percent slopes, 2,250 feet south, 100 feet east of the northwest corner of sec. 20, T. 21 N., R. 74 W.

- A—0 to 2 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; weak fine granular structure; slightly hard, friable, slightly sticky and plastic; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
- Bw—2 to 7 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and plastic; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
- C—7 to 16 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, sticky and plastic; strongly effervescent, carbonate disseminated and also occurs as common fine seams along weathering planes; common fine iron and sulphur oxide concentrations; moderately alkaline; clear smooth boundary.
- Cr1—16 to 22 inches; weakly consolidated shale with a few fine gypsum crystals.
- Cr2—22 inches; soft shale with 1/4-inch-thick layers of medium and fine gypsum crystals every 4 to 6 inches along bedding planes. The surface is 0 to 15 percent covered with quartzitic gravel and fine cobbles. The depth to bedrock ranges from 8 to 20 inches. The hue is 10YR to 5Y throughout the profile. Reaction is moderately alkaline or strongly alkaline throughout the profile. The Bw horizon is not a cambic horizon and is absent in some pedons.

Bonjea Series

The Bonjea series consists of shallow, well drained soils on foothills and mountain slopes. They formed in

residuum and colluvium derived from granite and gneiss. Slope ranges from 3 to 60 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Bonjea sandy loam, in an area of Bonjea-Chugcreek-Rock outcrop complex, 3 to 15 percent slopes, 1,500 feet south, 2,300 feet east of the northwest corner of sec. 10, T. 18 N., R. 71 W.

A—0 to 4 inches; brown (10YR 4/3) sandy loam, dark brown (10YR 3/3) moist; weak fine and medium granular structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; 5 percent gravel; neutral; abrupt smooth boundary.

Bt1—4 to 10 inches; brown (10YR 4/3) sandy clay loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many faint clay films on faces of peds; 5 percent fine gravel; neutral; clear smooth boundary.

Bt2—10 to 15 inches; yellowish brown (10YR 5/6) gravelly sandy clay loam, dark yellowish brown (10YR 4/6) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common medium roots; many distinct clay films on faces of peds; 20 percent gravel; neutral; abrupt broken boundary.

R—15 inches; hard granite.

The depth to bedrock ranges from 10 to 20 inches. The particle-size control section is 20 to 30 percent clay and 35 to 50 percent fine or coarser sand. The particle-size control section averages 10 to 35 percent gravel. Reaction is neutral or slightly alkaline throughout the profile. The hue is 7.5YR or 10YR in the A horizon, and 2.5Y to 7.5YR in the Bt horizon. The Bt horizon has a dominant texture of sandy clay loam or gravelly sandy clay loam, but the lower part in some pedons is very gravelly sandy clay loam.

Bosler Series

The Bosler series consists of very deep, moderately well drained or well drained soils on alluvial fans and terraces. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Bosler fine sandy loam, in an area of Bosler-Borollic Camborthids complex, 0 to 8 percent slopes, 1,660 feet south, 330 feet west of the northeast corner of sec. 12, T. 15 N., R. 74 W.

A—0 to 4 inches; grayish brown (10YR 5/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; 10 percent gravel; neutral; clear smooth boundary.

AB—4 to 7 inches; grayish brown (10YR 5/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine roots; 5 percent gravel; slightly alkaline; clear smooth boundary.

Bt—7 to 15 inches; brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common fine roots; common distinct clay films on faces of peds; 5 percent gravel; slightly alkaline; clear smooth boundary.

Btk—15 to 19 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; hard, friable, sticky and slightly plastic; few fine roots; few distinct clay films in pores and on faces of peds; violently effervescent, calcium carbonate as common fine and medium soft masses, as common fine filaments, and as coatings on gravel; 10 percent gravel; moderately alkaline; gradual wavy boundary.

Bk—19 to 30 inches; very pale brown (10YR 8/3) loam, pale brown (10YR 6/3) moist; massive; hard, very friable, slightly sticky and slightly plastic; violently effervescent, calcium carbonate as many fine, medium and large soft masses, and as thick coatings on gravel; 10 percent gravel; moderately alkaline; abrupt smooth boundary.

2C—30 to 60 inches; very pale brown (10YR 7/4) very gravelly sand, light yellowish brown (10YR 6/4) moist; single grain; loose; nonsticky and nonplastic; slightly effervescent in some strata, noneffervescent in others; 40 percent fine and medium granitic and quartzitic gravel; moderately alkaline.

The depth to secondary calcium carbonate ranges from 5 to 17 inches. The particle-size control section commonly is 20 to 30 percent clay, 35 to 50 percent fine or coarser sand, and 0 to 10 percent rock fragments. The depth to the 2C horizon ranges from 20 to 40 inches. In map units 119 and 121, a seasonal high water table is at a depth of 1.5 to 3.0 feet from April through September.

The A horizon is 0 to 10 percent gravel. It commonly has a neutral or slightly alkaline reaction. The Bt horizon commonly has a slightly alkaline or moderately alkaline reaction. In the wet phase, however, the A and Bt

horizons have moderately alkaline or strongly alkaline reactions. The Bt horizon is 0 to 10 percent gravel.

The Bk horizon has texture of loam or sandy clay loam and is 10 to 15 percent gravel. This horizon is absent in some pedons. The 2C and 2Bk horizons have textures of very gravelly sand or very gravelly loamy sand. They are 35 to 60 percent gravel. Reaction in the Bk, 2Bk, and 2C horizons is moderately alkaline or strongly alkaline. Calcium carbonate equivalent in the Bk and 2Bk horizons is 15 to 35 percent. The depth to the 2Bk or 2C horizon is 20 to 40 inches.

Bowen Series

The Bowen series consists of moderately deep, well drained soils on mountain slopes and mountain toe slopes. They formed in alluvium and colluvium derived from schist and gneiss. Slope ranges from 10 to 20 percent. Elevation is 7,600 to 8,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Bowen gravelly sandy loam, in an area of Poin-Bowen-Rock outcrop complex, 10 to 50 percent slopes, 1,690 feet south, 1,700 feet west of the northeast corner of sec. 25, T. 13 N., R. 77 W.

A—0 to 8 inches; brown (10YR 4/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine roots; the surface is 20 percent covered with gravel and cobbles; neutral; clear smooth boundary.

Bt1—8 to 16 inches; dark yellowish brown (10YR 4/4) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; weak fine subangular block structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few faint clay films on faces of peds and as bridging between sand grains; 45 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.

Bt2—16 to 22 inches; brown (10YR 5/3) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common fine roots; few faint clay films on faces of peds and as bridging between sand grains; 35 percent gravel and 10 percent cobbles; slightly alkaline; gradual wavy boundary.

C—22 to 31 inches; brown (10YR 5/3) very cobbly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; 20 percent gravel and 40 percent cobbles; slightly alkaline; clear wavy boundary.

R—31 inches; hard schist.

The depth to bedrock ranges from 20 to 40 inches. The particle-size control section averages 18 to 25 percent clay. The Bt horizon has a dominant texture of very gravelly sandy clay loam, but a thin layer of very gravelly sandy loam is present in some pedons. Reaction in the Bt horizon is neutral or slightly alkaline. The C horizon has a texture of very gravelly sandy loam or very cobbly sandy loam.

Boyle Series

The Boyle series consists of shallow, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 1 to 25 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Boyle gravelly sandy loam, in an area of Boyle-Lininger association, 1 to 15 percent slopes, 400 feet east, 500 feet south of the northwest corner of sec. 11, T. 13 N., R. 71 W.

A—0 to 3 inches; brown (10YR 4/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine and common medium roots; 20 percent gravel; neutral; clear smooth boundary.

Bt1—3 to 6 inches; brown (10YR 4/3) gravelly sandy clay loam, dark brown (7.5YR 3/2) moist; moderate medium subangular blocky structure parting to moderate medium granular; slightly hard, very friable, sticky and slightly plastic; common very fine, fine, and medium roots; many faint and few distinct clay films on faces of peds; 30 percent gravel; neutral; clear smooth boundary.

Bt2—6 to 12 inches; brown (7.5YR 4/4) very gravelly sandy clay loam, dark brown (7.5YR 3/2) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common fine and medium roots; many faint and few distinct clay films on faces of peds; 50 percent gravel; neutral; clear wavy boundary.

Cr—12 inches; weakly consolidated granite.

The surface is 30 to 70 percent covered with gravel and a few stones. The hue is 10YR or 7.5YR throughout the profile. The particle-size control section averages 20 to 28 percent clay. The depth to bedrock commonly is 10 to 20 inches. In the thin solum Boyle soil found in map unit 123, however, the bedrock is at a depth of 7 to 10

inches; this is outside the characteristics of the Boyle series.

The A horizon is 15 to 30 percent gravel. The Bt horizon commonly has a texture of very gravelly sandy clay loam, but a thin layer of gravelly sandy clay loam is present in some pedons. The content of gravel in the Bt horizon averages 35 to 50 percent. A C horizon is present in some pedons.

Browline Series

The Browline series consists of very deep, well drained soils on hillslopes and fan terraces. They formed in outwash and alluvium. Slope ranges from 0 to 45 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Browline soil, in an area of Browline very gravelly fine sandy loam, 0 to 8 percent slopes, 800 feet south, 2,600 feet east of the northwest corner of sec. 34, T. 18 N., R. 77 W.

A—0 to 3 inches; brown (10YR 5/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; irregular interstitial pores; strongly effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 7 percent; 45 percent gravel; the surface is 20 percent covered with fine gravel and a few cobbles; moderately alkaline; clear smooth boundary.

ABk—3 to 9 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; common fine pores; violently effervescent, calcium carbonate is disseminated and also occurs as common thin pendants on rock fragments and as few fine pendant fragments, calcium carbonate equivalent is 18 percent; 55 percent gravel; moderately alkaline; clear smooth boundary.

Bk1—9 to 14 inches; white (10YR 8/2) very gravelly sandy loam, very pale brown (10YR 7/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine pores; violently effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 37 percent; 45 percent gravel; moderately alkaline; gradual wavy boundary.

Bk2—14 to 31 inches; white (10YR 8/2) extremely gravelly loam, very pale brown (10YR 7/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine pores; violently effervescent, calcium carbonate is disseminated and the calcium carbonate equivalent is 36 percent;

75 percent gravel; strongly alkaline; clear wavy boundary.

C—31 to 60 inches; brownish yellow (10YR 6/6) extremely gravelly coarse sandy loam, yellowish brown (10YR 5/6) moist; massive; slightly hard, very friable, nonsticky and nonplastic; strongly effervescent, calcium carbonate is disseminated and few fine pendants of calcium carbonate are on rock fragments, few fine pendant fragments, calcium carbonate equivalent is 7 percent; 80 percent gravel; moderately alkaline.

The surface is 10 to 50 percent covered with gravel, cobbles, and a few stones. The particle-size control section averages 8 to 15 percent noncarbonate clay. It is 40 to 70 percent fine or coarser sand and 35 to 75 percent rock fragments. In some pedons a 2Bk or 2C horizon is present below the Bk horizon. The hue is 10YR or 2.5Y in the A, 2Bk, and 2C horizons and 7.5YR to 2.5Y in the Bk horizon. The A horizon has a slightly alkaline or moderately alkaline reaction. The reaction in the Bk and C horizons is moderately alkaline or strongly alkaline. Calcium carbonate equivalent is less than 10 percent in the A horizon and 15 to 40 percent in the Bk horizon.

Rock fragments in the A horizon consist of 10 to 50 percent gravel, 0 to 50 percent cobbles, and less than 5 percent stones. The Bk and C horizons have fine-earth textures of coarse sandy loam, sandy loam, or loam. They are very gravelly, extremely gravelly, very cobbly, or extremely cobbly. The rock fragments in the Bk and C horizons consist of 25 to 75 percent gravel and 0 to 50 percent cobbles. In some pedons the Bk horizon is not present above a depth of 60 inches. The texture of the 2Bk and 2C horizons is gravelly clay loam or extremely gravelly sandy clay loam.

Bruja Series

The Bruja series consists of moderately deep, well drained soils on canyon sides and escarpments. They formed in residuum and colluvium derived from interbedded sandstone and limestone. Slope ranges from 20 to 60 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Bruja very cobbly very fine sandy loam, in an area of Bruja-Canwall-Telecan association, 3 to 60 percent slopes, 1,900 feet west, 2,400 feet south of the northeast corner of sec. 12, T. 16 N., R. 73 W.

A—0 to 5 inches; yellowish brown (10YR 5/4) very cobbly very fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very

friable, nonsticky and nonplastic; many very fine and fine roots; slightly effervescent, calcium carbonate is disseminated; 20 percent coarse gravel and 15 percent 3- to 5-inch diameter cobbles; the surface is 90 percent covered with gravel and cobbles; moderately alkaline; clear smooth boundary.

Bk1—5 to 15 inches; light yellowish brown (10YR 6/4) very cobbly very fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, and fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as many thin coatings and pendants on the undersides of rock fragments; 30 percent gravel and 20 percent cobbles; moderately alkaline; gradual wavy boundary.

Bk2—15 to 23 inches; pale brown (10YR 6/3) extremely cobbly very fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as many thick pendants on the undersides of rock fragments, 25 percent calcium carbonate equivalent; 25 percent coarse gravel and 40 percent cobbles; moderately alkaline; abrupt irregular boundary.

Cr—23 inches; fractured interbedded sandstone and limestone.

The surface is 70 to 90 percent covered with gravel and cobbles. The depth to bedrock ranges from 20 to 40 inches. The particle-size control section is 6 to 17 percent clay, 15 to 35 percent fine or coarser sand, and 50 to 65 percent rock fragments.

The A horizon is 15 to 25 percent gravel and 15 to 25 percent cobbles. It has a slightly alkaline or moderately alkaline reaction. The Bk horizon has a fine-earth texture of very fine sandy loam or fine sandy loam; it is very cobbly or extremely cobbly. Rock fragments in the Bk horizon consist of 20 to 30 percent gravel, 20 to 40 percent cobbles, and 0 to 10 percent flagstones. Calcium carbonate equivalent in the Bk horizon is 15 to 25 percent.

Bucklon Series

The Bucklon series consists of shallow, well drained soils on foothills, ridges, and escarpments. They formed in residuum and colluvium derived from sedimentary rock. Slope ranges from 15 to 60 percent. Elevation is 7,600 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Bucklon sandy loam, in an area of Buffork-Bucklon sandy loams, 15 to 60 percent slopes, 650 feet north, 1,750 feet west of the southeast corner of sec. 29, T. 17 N., R. 77 W.

A—0 to 6 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; 10 percent fine igneous gravel; the surface is 10 percent covered with gravel and a few cobbles; neutral; clear smooth boundary.

AC—6 to 12 inches; 60 percent light brownish gray (2.5Y 6/2) and 40 percent brownish yellow (10YR 6/6) loam, grayish brown (2.5Y 5/2) and yellowish brown (10YR 5/6) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; 30 percent soft shale chips; neutral; clear smooth boundary.

C—12 to 16 inches; light yellowish brown (2.5Y 6/4) loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; 30 percent soft shale chips; neutral; abrupt smooth boundary.

Cr—16 inches; weakly consolidated sandstone.

The depth to bedrock ranges from 10 to 20 inches. The mollic epipedon is 7 to 8 inches thick. The particle-size control section averages 18 to 25 percent clay and is 0 to 15 percent rock fragments.

Buffork Series

The Buffork series consists of moderately deep, well drained soils on foothills, ridges, and escarpments. They formed in colluvium and residuum derived from sedimentary rock. Slope ranges from 15 to 60 percent. Elevation is 7,600 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Buffork sandy loam, in an area of Buffork-Bucklon Variant sandy loams, 15 to 60 percent slopes, 1,900 feet south, 2,100 feet east of the northwest corner of sec. 34, T. 17 N., R. 77 W.

A—0 to 1 inch; dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; 10 percent fine gravel; the surface is 5 percent covered with gravel and 5 percent covered with cobbles; neutral; abrupt smooth boundary.

AB—1 to 7 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; 5 percent fine gravel; neutral; clear smooth boundary.

Bt1—7 to 11 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak medium angular

blocky structure; soft, friable, nonsticky and nonplastic; common fine roots; many faint clay films on faces of peds; 5 percent fine gravel; neutral; clear smooth boundary.

Bt2—11 to 17 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate fine prismatic and angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; many faint clay films on faces of peds; 5 percent fine gravel and few soft shale chips; neutral; clear smooth boundary.

2C—17 to 26 inches; light yellowish brown (10YR 6/4) coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; 10 percent fine gravel; 35 percent fine soft shale chips; neutral.

2Cr—26 to 60 inches; weakly consolidated, coarse-grained sandstone and fine-grained conglomerate.

The surface is 10 to 15 percent covered with gravel and cobbles. The depth to bedrock ranges from 20 to 40 inches. The mollic epipedon is 7 to 8 inches thick. The 2C horizon is 5 to 10 percent clay and 10 to 15 percent rock fragments.

Bullock Series

The Bullock series consists of moderately deep, well drained soils on hillslopes and terrace escarpments. They formed in residuum and local alluvium derived dominantly from shale interbedded with sandstone. Slope ranges from 5 to 25 percent. Elevation is 6,000 to 7,000 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Bullock sandy loam, in an area of Abston-Bullock complex, 5 to 25 percent slopes, 1,300 feet east, 1,900 feet south of the northwest corner of sec. 25, T. 19 N., R. 76 W.

A—0 to 2 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; strong very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and few medium roots; common very fine discontinuous irregular vesicular pores; the surface is 25 percent covered with gravel; slightly alkaline; abrupt smooth boundary.

Btn—2 to 8 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; strong coarse prismatic structure parting to strong fine and medium subangular blocky; very hard, very firm, sticky and plastic; many fine and few medium roots; common very fine constricted irregular pores; many prominent clay films on faces of peds; strongly alkaline; clear wavy boundary.

Btnk—8 to 16 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 4/3) moist; strong coarse prismatic structure parting to strong medium and coarse subangular blocky; very hard, very firm, sticky and plastic; many fine and few medium roots; common very fine constricted irregular pores; many prominent clay films on faces of peds; violently effervescent, calcium carbonate is disseminated and also occurs as many medium and large soft masses and coatings on peds; very strongly alkaline; clear wavy boundary.

Bkn—16 to 24 inches; light gray (10YR 7/2) loam, light brownish gray (10YR 6/2) moist; strong coarse prismatic structure; hard, firm, slightly sticky and slightly plastic; many fine and few medium roots; few very fine constricted irregular pores; violently effervescent, calcium carbonate is disseminated and also occurs as many fine soft masses and streaks; very strongly alkaline; gradual wavy boundary.

Cr—24 to 60 inches; weakly consolidated sandstone interbedded with weakly consolidated sodic shale.

The depth to bedrock ranges from 20 to 40 inches. Reaction is neutral or slightly alkaline in the A horizon, and strongly alkaline or very strongly alkaline in the Bt and Bk horizons. The Bt horizon has a texture of loam, sandy clay loam, or clay loam. The Bk horizon has a texture of loam or sandy clay loam.

Byrnie Series

The Byrnie series consists of shallow, well drained soils on hillslopes and escarpments. They formed in residuum and colluvium derived from limestone, sandstone, and shale. Slope ranges from 10 to 70 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Byrnie sandy loam, in an area of Rock Outcrop-Bruja-Byrnie complex, 30 to 70 percent slopes, 1,000 feet east, 1,900 feet south of the northeast corner of sec. 6, T. 14 N., R. 72 W.

A—0 to 2 inches; strong brown (7.5YR 5/6) gravelly fine sandy loam, strong brown (7.5YR 4/6) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; strongly effervescent, calcium carbonate is disseminated; 15 percent fine gravel; moderately alkaline; clear smooth boundary.

Bk1—2 to 9 inches; strong brown (7.5YR 4/6) gravelly fine sandy loam, brown (7.5YR 4/4) moist; single grain; loose, slightly sticky and slightly plastic; many

fine and few medium and coarse roots; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses; 30 percent gravel; moderately alkaline; clear wavy boundary.

Bk2—9 to 12 inches; light brown (7.5YR 6/4) gravelly fine sandy loam, strong brown (7.5YR 5/6) moist; single grain; loose, slightly sticky and nonplastic; few medium and coarse roots; violently effervescent, calcium carbonate is disseminated; 30 percent gravel; moderately alkaline; abrupt wavy boundary.

Cr—12 inches; weakly consolidated, interbedded sandstone, limestone, and shale.

The surface is 20 to 30 percent covered with gravel, cobbles, and flagstones. The depth to bedrock ranges from 10 to 20 inches. The particle-size control section is 9 to 15 percent clay and 20 to 35 percent rock fragments. The hue is 5YR or 7.5YR throughout the profile. The A horizon has a texture of sandy loam or gravelly fine sandy loam; it is 10 to 20 percent gravel. The Bk horizon has a texture of gravelly sandy loam or gravelly fine sandy loam.

Canburn Series

The Canburn series consists of very deep, poorly drained soils on flood plains and stream terraces. They formed in alluvium. Slope ranges from 1 to 4 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Canburn soil, in an area of Canburn loam, 1 to 4 percent slopes, 1,500 feet south, 2,500 feet east of the northwest corner of sec. 22, T. 13 N., R. 73 W.

A1—0 to 6 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; few fine distinct strong brown (7.5YR 5/8) mottles; strong medium granular structure; slightly hard, friable, slightly sticky and plastic; many very fine, fine, and medium roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt wavy boundary.

A2—6 to 12 inches; brown (7.5YR 5/4) loam, dark brown (7.5YR 3/2) moist; few fine distinct strong brown (7.5YR 5/8) mottles; moderate medium granular structure; slightly hard, very friable, sticky and slightly plastic; common fine and medium roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt irregular boundary.

A3—12 to 23 inches; brown (7.5YR 4/4) loam, dark brown (7.5YR 3/2) moist; common medium distinct strong brown (7.5YR 5/8) mottles; massive; slightly hard, very friable, sticky and slightly plastic; few

medium roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

AC—23 to 50 inches; brown (10YR 5/3) loam, dark brown (7.5YR 3/2) moist; common medium distinct strong brown (7.5YR 5/8) and dark gray (5YR 4/1) mottles; massive; very hard, friable, slightly sticky and slightly plastic; few medium roots to 30 inches; slightly effervescent, calcium carbonate is disseminated; 10 percent gravel; moderately alkaline; gradual wavy boundary.

2C—50 to 60 inches; light brown (7.5YR 6/4) coarse sandy loam, brown (7.5YR 5/4) moist; many medium and large distinct gray (5YR 6/1) bands of mottles; massive; very hard, friable, nonsticky and nonplastic; slightly effervescent, calcium carbonate is disseminated; 10 percent gravel; moderately alkaline.

The depth to a seasonal high water table ranges from 0.5 to 2 feet from April through July. The particle-size control section is 18 to 27 percent clay, 15 to 35 percent fine or coarser sand, and 0 to 10 percent rock fragments. The hue is 7.5YR or 10YR throughout the profile. Reaction is slightly alkaline or moderately alkaline throughout the profile. The C horizon has a dominant texture of loam, but a few thin layers of coarse sandy loam occur in some pedons. The C horizon is 0 to 10 percent gravel.

Cantle Series

The Cantle series consists of very deep, somewhat poorly drained soils on flood plains and stream terraces. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Cantle soil, in an area of Cantle loam, 0 to 3 percent slopes, 2,200 feet north, 500 feet west of the southeast corner of sec. 3, T. 15 N., R. 73 W.

A—0 to 5 inches; brown (7.5YR 4/2) loam, dark brown (7.5YR 3/2) moist; strong medium granular structure; slightly hard, firm, slightly sticky and slightly plastic; many very fine, fine, and medium roots; slightly effervescent, calcium carbonate is disseminated; few fine seams of soluble salts, electrical conductivity of 2.6 millimhos per centimeter; moderately alkaline; clear smooth boundary.

AC—5 to 27 inches; brown (7.5YR 4/3) loam, dark brown (7.5YR 3/2) moist; common fine distinct strong brown (7.5YR 5/8) mottles; strong medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; violently

effervescent, calcium carbonate is disseminated; common fine seams of soluble salts, electrical conductivity of 4.5 millimhos per centimeter; moderately alkaline; clear smooth boundary.

Cg1—27 to 49 inches; brown (7.5YR 5/4) silty clay loam, dark brown (7.5YR 3/4) moist; common fine distinct strong brown (7.5YR 5/8) and gray (5Y 5/1) mottles; massive; hard, firm, sticky and plastic; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

Cg2—49 to 60 inches; reddish brown (5YR 5/4) silty clay loam, dark reddish brown (5YR 3/4) moist; common fine distinct seams of gray (5Y 5/1) mottles; massive; extremely hard, very firm, very sticky and plastic; strongly effervescent, calcium carbonate is disseminated; moderately alkaline.

The depth to a seasonal high water table ranges from 0.5 to 2 feet from May through July. The hue is 10YR or 7.5YR in the A horizon and 5YR or 7.5YR in the C horizon. Reaction is moderately alkaline or strongly alkaline throughout the profile. Electrical conductivity ranges from 2 to 8 millimhos per centimeter in the A horizon, and from 4 to 8 millimhos per centimeter in the C horizon. The A horizon is 0 to 5 percent gravel. The C horizon has a texture of loam or silty clay loam.

Canwall Series

The Canwall series consists of moderately deep, well drained soils on cuesta dip slopes and canyon sides. They formed in eolian deposits and colluvium derived from limestone and sandstone overlying residuum derived from limestone. Slope ranges from 3 to 30 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Canwall fine sandy loam, in an area of Pilotpeak-Canwall complex, 3 to 20 percent slopes, 300 feet south, 800 feet west of the northeast corner of sec. 18, T. 15 N., R. 72 W.

A—0 to 3 inches; yellowish brown (10YR 5/4) fine sandy loam, dark brown (10YR 3/3) moist; weak fine and medium granular structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, fine, and medium roots; slightly effervescent, calcium carbonate is disseminated; 5 percent coarse gravel and cobbles; moderately alkaline; abrupt smooth boundary.

Bt—3 to 12 inches; brown (7.5YR 5/4) very fine sandy loam, dark brown (7.5YR 3/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly

sticky and slightly plastic; common fine and medium roots; many faint and distinct clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated; 5 percent coarse gravel and 5 percent angular cobbles; moderately alkaline; clear smooth boundary.

2Btk—12 to 16 inches; brown (7.5YR 5/4) very cobbly very fine sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few medium roots; many faint clay films on faces of peds; strongly effervescent, calcium carbonate as common fine concretions and moderately thick pendants on the undersides of rock fragments; 15 percent coarse gravel and 25 percent angular cobbles; moderately alkaline; clear wavy boundary.

2Bk—16 to 24 inches; very pale brown (10YR 7/4) very cobbly very fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; violently effervescent, calcium carbonate is disseminated and also occurs as common fine concretions, thin seams, and thick pendants on the undersides of rock fragments, calcium carbonate equivalent is 18 percent; 15 percent coarse gravel and 45 percent angular cobbles; moderately alkaline; abrupt irregular boundary.

R—24 inches; hard limestone.

The surface is 0 to 25 percent covered with gravel and cobbles. The depth to bedrock ranges from 20 to 40 inches. The hue is 7.5YR or 10YR throughout the profile. Reaction is slightly alkaline or moderately alkaline in the A and Bt horizons. The A horizon is 5 to 20 percent gravel and 0 to 5 percent cobbles. The Bt horizon is 5 to 25 percent gravel and 0 to 5 percent cobbles. The Bt horizon has a texture of very fine sandy loam, fine sandy loam, gravelly fine sandy loam, or gravelly very fine sandy loam.

The 2Bk horizon is 10 to 20 percent gravel, 30 to 45 percent cobbles, and 0 to 15 percent flagstones. It has a texture of very cobbly fine sandy loam or very cobbly very fine sandy loam. Calcium carbonate equivalent in the 2Bk horizon is 17 to 32 percent.

Carbol Series

The Carbol series consists of shallow, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 5 to 50 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Carbol sandy loam, in an area of Kezar-Carbol-Rock outcrop, 5 to 25 percent slopes, 1,300 feet north, 600 feet east of the southwest corner of sec. 31, T. 17 N., R. 71 W.

A—0 to 4 inches; brown (10YR 4/3) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots; 10 percent cobbles; the surface is 25 percent covered with gravel; neutral; abrupt smooth boundary.

Bt—4 to 13 inches; dark yellowish brown (10YR 4/4) cobbly sandy clay loam, dark brown (10YR 3/3) moist; strong coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; many faint clay films on faces of peds; 15 percent cobbles and 10 percent gravel; neutral; clear wavy boundary.

C—13 to 19 inches; yellowish brown (10YR 5/4) extremely cobbly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and medium roots; 10 percent gravel, 40 percent cobbles, and 20 percent stones; neutral; abrupt irregular boundary.

R—19 inches; hard granite.

The depth to bedrock ranges from 10 to 20 inches. The A horizon is 0 to 10 percent gravel and 0 to 10 percent cobbles. The Bt horizon has a texture of sandy clay loam or cobbly sandy clay loam; it is 20 to 28 percent clay, 35 to 50 percent fine or coarser sand, and 0 to 25 percent rock fragments. Rock fragments in the Bt horizon consist of 0 to 10 percent gravel and 0 to 15 percent cobbles.

The C horizon has a texture of very cobbly sandy clay loam or extremely cobbly sandy clay loam; it is 45 to 70 percent rock fragments. Rock fragments in the C horizon consist of 15 to 25 percent gravel, 25 to 45 percent cobbles, and 0 to 20 percent stones. Reaction in this horizon is neutral or slightly alkaline.

Carmody Series

The Carmody series consists of moderately deep, well drained soils on hills, ridges, and escarpments. They formed in residuum and local alluvium derived from sandstone. Slope ranges from 6 to 45 percent. Elevation is 6,500 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Carmody fine sandy loam, in an area of Carmody-Ryan Park fine sandy loams, 6 to 15 percent slopes, 50 feet west, 1,100 feet north of the southeast corner of sec. 17, T. 20 N., R. 75 W.

A1—0 to 1 inch; brown (10YR 4/3) fine sandy loam, brown (10YR 4/3) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and few fine roots; common very fine and few fine continuous irregular pores; moderately alkaline; abrupt smooth boundary.

A2—1 to 5 inches; dark yellowish brown (10YR 4/4) fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and few fine roots; common very fine and few fine continuous irregular pores; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

C—5 to 29 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; many very fine and few fine roots to 18 inches, few very fine and fine roots 18 to 29 inches; common very fine and few fine continuous irregular pores; strongly effervescent, calcium carbonate as discontinuous filaments and seams; moderately alkaline; gradual wavy boundary.

Cr—29 inches; weakly consolidated sandstone.

The surface is 0 to 30 percent covered with gravel and cobbles. The depth to bedrock ranges from 20 to 40 inches. The particle-size control section is 12 to 16 percent clay. The C horizon commonly has a texture of fine sandy loam, but in some pedons it is very fine sandy loam.

Cathedral Series

The Cathedral series consists of shallow, well drained soils on foothills and mountains. They formed in residuum and colluvium derived from granite. Slope ranges from 5 to 40 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 12 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Cathedral very stony coarse sandy loam, in an area of Rock outcrop-Cathedral complex, 20 to 40 percent slopes, 1,200 feet north, 3,000 feet west of the southeast corner of sec. 21, T. 12 N., R. 71 W.

A—0 to 2 inches; very dark grayish brown (10YR 4/2) very stony coarse sandy loam, very dark brown (10YR 2/2) moist; moderate medium and fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; 25 percent gravel and cobbles, 25 percent stones; the surface is 70 percent covered with rock fragments consisting of mostly stones and boulders and some gravel and cobbles; neutral; abrupt smooth boundary.

AC—2 to 13 inches; dark brown (7.5YR 4/4) very gravelly coarse sandy loam, very dark brown (10YR 2/2) moist; single grain; loose, nonsticky and nonplastic; common fine and medium roots; 55 percent fine gravel; neutral; abrupt smooth boundary.

R—13 inches; hard granite.

The surface is 45 to 70 percent covered with gravel, cobbles, stones, and boulders. The depth to bedrock ranges from 10 to 20 inches. The particle-size control section is 5 to 18 percent clay and 35 to 80 percent rock fragments.

The A horizon is 20 to 35 percent gravel, 0 to 20 percent cobbles, and 0 to 25 percent stones. The AC and C horizons have hue of 7.5YR or 10YR. The AC and C horizons commonly have textures of very gravelly coarse sandy loam, but in some pedons they are very gravelly sandy loam or very cobbly sandy loam. The AC and C horizons are 30 to 60 percent fine gravel, 0 to 20 percent cobbles, and 0 to 5 percent stones.

Center Creek Series

The Center Creek series consists of very deep, somewhat poorly drained soils on low stream terraces. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Center Creek soil, in an area of Center Creek loam, 0 to 3 percent slopes, 900 feet south, 325 feet east of the northwest corner of sec. 1, T. 13 N., R. 76 W.

A—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and nonplastic; many fine roots; common very fine pores; neutral; clear smooth boundary.

Bt1—3 to 14 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, sticky and slightly plastic; common fine roots; few very fine pores; common distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bt2—14 to 23 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, sticky and slightly plastic; common fine roots; few very fine discontinuous random pores; common faint clay films on faces of

peds; strongly effervescent, calcium carbonate as common medium irregular soft masses; slightly alkaline; clear smooth boundary.

Bt3—23 to 30 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; few fine distinct yellowish brown (10YR 5/6) mottles; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, sticky and slightly plastic; common fine roots; few very fine discontinuous random pores; few faint clay films on faces of peds; neutral; clear smooth boundary.

BC—30 to 37 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; common fine distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; neutral; abrupt smooth boundary.

2C—37 to 60 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; common fine distinct yellowish brown (10YR 5/6) mottles; single grain; loose, nonsticky and nonplastic; 40 percent gravel; neutral.

The depth to a seasonal high water table ranges from 2 to 4 feet from April through August. The mollic epipedon is 18 to 30 inches thick. The particle-size control section is 28 to 35 percent clay and 15 to 35 percent fine sand and coarser sand. The A horizon is 0 to 10 percent gravel. The A and Bt horizons have neutral or slightly alkaline reactions. The 2C horizon commonly has a texture of very gravelly sandy loam, but in some pedons it is very gravelly loamy sand. This horizon is 35 to 50 percent medium and fine granitic gravel.

Chalkhill Series

The Chalkhill series consists of shallow, well drained soils on cuesta dip slopes. They formed in alluvium overlying residuum derived dominantly from sandstone. Slope ranges from 1 to 15 percent. Elevation is 7,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Chalkhill sandy loam, in an area of Renvers-Chalkhill complex, 1 to 15 percent slopes, 1,600 feet south, 2,000 feet east of the northwest corner of sec. 36, T. 27 N., R. 77 W.

A—0 to 2 inches; light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; weak thin platy structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; 10 percent channery fragments; the surface is 30 percent covered with

sandstone channery fragments; neutral; abrupt wavy boundary.

Bt1—2 to 11 inches; brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 4/4) moist; moderate medium prismatic structure parting to strong medium subangular blocky; hard, firm, sticky and plastic; common very fine and fine and few medium roots; many faint clay films on faces of peds; 10 percent channery fragments; neutral; clear wavy boundary.

Bt2—11 to 14 inches; brown (7.5YR 5/4) extremely channery sandy clay loam, dark brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine, and medium roots; many faint clay films on faces of peds and on channery fragments; 75 percent channery fragments; slightly alkaline; abrupt wavy boundary.

R—14 inches; hard sandstone.

The depth to bedrock is 10 to 20 inches. The particle-size control section is 20 to 35 percent clay and 35 to 50 percent fine or coarser sand. The content of rock fragments in the particle-size control section averages 5 to 30 percent. Hue throughout the profile is 10YR or 7.5YR. Reaction is neutral or slightly alkaline throughout the profile.

The Bt1 has a texture of sandy clay loam or clay loam; it is 5 to 15 percent channery fragments. The Bt2 horizon has a fine-earth texture of sandy clay loam or clay loam; it is 60 to 85 percent rock fragments. The rock fragments are dominantly channery fragments with a few flagstones. The Bt2 horizon is absent in some pedons.

Chalkville Series

The Chalkville series consist of very shallow or shallow and well drained soils on ridges and pediments. They formed in alluvium and residuum derived dominantly from tuff. Slope ranges from 0 to 15 percent. Elevation is 6,600 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Chalkville loam, in an area of Tule-Chalkville loams, 0 to 15 percent slopes, 2,550 feet south, 1,400 feet west of the northeast corner of sec. 15, T. 27 N., R. 77 W.

A—0 to 2 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots; 10 percent gravel; neutral; clear wavy boundary.

Bt1—2 to 7 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate coarse subangular blocky; hard, firm, sticky and plastic;

common very fine and few medium roots; common faint clay films on faces of peds; less than 5 percent angular gravel; neutral; clear wavy boundary.

Bt2—7 to 12 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to moderate coarse subangular blocky; hard, firm, sticky and plastic; common very fine and few medium roots; common faint clay films on faces of peds; 5 percent gravel; slightly alkaline; clear wavy boundary.

2C—12 to 15 inches; yellowish brown (10YR 5/4) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, sticky and slightly plastic; few very fine, fine, and medium roots; 80 percent gravel; moderately alkaline; abrupt wavy boundary.

R—15 inches; hard tuff.

The hue is 2.5Y or 10YR throughout the profile. The depth to bedrock ranges from 9 to 20 inches. The A and Bt horizons have neutral or slightly alkaline reactions. The Bt horizon has a texture of clay loam, sandy clay loam, or gravelly clay loam; it is 5 to 20 percent gravel. The 2C horizon has a fine-earth texture of sandy loam or sandy clay loam; it is 40 to 80 percent rock fragments. The rock fragments are dominantly gravel. Reaction in the 2C horizon is neutral to moderately alkaline.

Chaperton Series

The Chaperton series consists of moderately deep, well drained soils on ridges, escarpments, and hills. They formed in residuum and alluvium derived from sandstone, loamstone, and shale. Slope ranges from 3 to 30 percent. Elevation is 6,500 to 7,800 feet, average annual precipitation is 10 to 17 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Chaperton loam, in an area of Chaperton, moderately saline-Blazon complex, 8 to 20 percent slopes, 800 feet west, 50 feet south of the northeast corner of sec. 26, T. 21 N., R. 75 W.

A—0 to 4 inches; yellowish brown (10YR 5/4) loam, dark brown (10YR 4/3) moist; weak fine and medium granular structure; soft, friable, sticky and plastic; many fine and few medium roots; the surface is 20 percent covered with gravel and 5 percent covered with cobbles; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bw—4 to 16 inches; yellowish brown (10YR 5/4) loam, dark brown (10YR 4/3) moist; weak medium prismatic structure parting to weak fine and medium subangular blocky; slightly hard, friable, sticky and plastic;

common fine and few medium roots; few distinct clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bk—16 to 20 inches; yellowish brown (10YR 5/4) loam, yellowish brown (10YR 5/4) moist; weak medium and coarse prismatic structure parting to weak fine and medium subangular blocky; hard, friable, sticky and plastic; common fine and few medium roots to 18 inches, few fine and medium roots below; strongly effervescent, calcium carbonate is disseminated and has a 10 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

C—20 to 35 inches; yellowish brown (10YR 5/4) loam, light olive brown (2.5Y 5/4) moist; platy rock structure; hard, friable, sticky and plastic; few fine and medium roots to 30 inches; strongly effervescent, calcium carbonate is disseminated and has an 8 percent calcium carbonate equivalent; strongly alkaline; gradual wavy boundary.

Cr—35 inches; weakly consolidated shale.

The surface is 20 to 35 percent covered with gravel and cobbles. The depth to the base of the cambic horizon ranges from 10 to 16 inches. The depth to bedrock ranges from 20 to 40 inches. The particle-size control section is 0 to 10 percent rock fragments. The A and Bw horizons commonly have a slightly alkaline reaction; but in areas of the saline phase, the reaction is moderately alkaline. The B and C horizons have hue of 10YR or 2.5Y. The Bk and C horizons have textures of loam or clay loam. Reaction is moderately alkaline or strongly alkaline in the Bk and C horizons.

Cheadle Series

The Cheadle series consists of shallow, well drained soils on ridges, canyon sides, cuestas, and escarpments. They formed in residuum and colluvium derived from sandstone and limestone. Slope ranges from 5 to 45 percent. Elevation is 7,600 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Cheadle fine sandy loam, in an area of Miracle-Cheadle association, 5 to 20 percent slopes, 300 feet north, 600 feet west of the southeast corner of sec. 34, T. 15 N., R. 72 W.

A—0 to 4 inches; brown (7.5YR 4/4) fine sandy loam, dark brown (7.5YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many fine and medium roots; 14 percent cobbles; the surface is 35 percent covered with cobbles; neutral; abrupt smooth boundary.

Bw—4 to 9 inches; brown (7.5YR 4/4) channery fine sandy loam, dark brown (7.5YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; 15 percent channery fragments; slightly alkaline; gradual wavy boundary.

C—9 to 16 inches; yellowish red (5YR 4/6) very channery fine sandy loam, dark reddish brown (5YR 3/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and medium roots; slightly effervescent, calcium carbonate is disseminated; 20 percent gravel and 25 percent channery fragments; slightly alkaline; clear smooth boundary.

R—16 inches; hard sandstone.

The surface is 0 to 35 percent covered with channery fragments or flagstones. The depth to bedrock ranges from 10 to 20 inches. The mollic epipedon is 7 to 9 inches thick. The particle-size control section averages 7 to 18 percent clay and 35 to 60 percent rock fragments. The hue is 10YR or 7.5YR in the A and Bw horizons and 10YR to 5YR in the Bk and C horizons.

The Bw horizon has a texture of channery fine sandy loam or very cobbly very fine sandy loam. This horizon is absent in some pedons. The Bk and C horizons have dominant fine-earth textures of sandy loam, fine sandy loam, or very fine sandy loam. In some pedons however, a thin layer with a fine-earth texture of loamy fine sand is immediately above the bedrock. The Bk and C horizons are very channery or very cobbly. Reaction is slightly alkaline or moderately alkaline in the Bk and C horizons.

The Cheadle soil found in map units 142, 189, and 223 is outside the characteristics of the series. It does not have a horizon containing an accumulation of calcium carbonate.

Chugcreek Series

The Chugcreek series consists of moderately deep, well drained soils on foothills and mountain slopes. They formed in colluvium and alluvium derived dominantly from granite and gneiss. Slope ranges from 3 to 40 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Chugcreek sandy loam, in an area of Bonjea-Chugcreek-Rock outcrop, 3 to 15 percent slopes, 2,100 feet north, 200 feet east of the southwest corner of sec. 11, T. 18 N., R. 71 W.

A—0 to 4 inches; brown (10YR 4/3) sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very

fine and fine and common medium roots; 10 percent gravel; neutral; abrupt wavy boundary.

Bt1—4 to 19 inches; dark yellowish brown (10YR 3/4) sandy loam; very dark grayish brown (10YR 3/2) moist; moderate coarse prismatic structure parting to strong coarse subangular blocky; hard, friable, slightly sticky and slightly plastic; common fine and medium roots; few faint clay films on faces of peds; 5 percent gravel; neutral; gradual wavy boundary.

Bt2—19 to 29 inches; dark yellowish brown (10YR 4/4) sandy clay loam, dark brown (10YR 3/3) moist; strong coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few medium roots; few distinct clay films on faces of peds; 10 percent gravel; slightly alkaline; gradual wavy boundary.

BC—29 to 38 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; 20 percent gravel; slightly alkaline; abrupt broken boundary.

R—38 inches; hard granite.

The depth to bedrock ranges from 20 to 40 inches. The A horizon is 0 to 10 percent gravel. The Bt horizon has a texture of sandy loam, sandy clay loam, or clay loam; it is 0 to 10 percent gravel and 18 to 35 percent clay. The Bt horizon has a texture of sandy loam, sandy clay loam, or clay loam. A C horizon is present in some pedons. The BC and C horizons have fine-earth textures of sandy clay loam or clay loam. They are 0 to 20 percent gravel. Hue of the BC and C horizons is 10YR or 2.5Y. Reaction is neutral or slightly alkaline in the Bt, BC, and C horizons.

Cushool Series

The Cushool series consists of moderately deep, well drained soils on hills, ridges, and pediments. They formed in alluvium and residuum derived from sedimentary rocks. Slope ranges from 0 to 15 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Cushool fine sandy loam, in an area of Cushool-Diamondville fine sandy loams, 0 to 3 percent slopes, 2,300 feet east, 1,650 feet north of the southwest corner of sec. 4, T. 22 N., R. 73 W.

A—0 to 2 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few medium and fine roots; few fine and medium continuous irregular pores; neutral; abrupt smooth boundary.

BAt—2 to 4 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak fine subangular blocky and moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine continuous irregular pores; few faint clay films on faces of peds; neutral; clear smooth boundary.

Bt—4 to 13 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate fine prismatic structure parting to moderate fine subangular blocky; very hard, firm, sticky and plastic; many distinct clay films on faces of peds and bridging sand grains; 10 percent medium and fine gravel; slightly alkaline; gradual smooth boundary.

Btk—13 to 16 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; strongly effervescent, calcium carbonate as common fine and medium soft masses and seams; 10 percent fine gravel; moderately alkaline; gradual smooth boundary.

Bk—16 to 32 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; strongly effervescent, calcium carbonate coatings on faces of peds along vertical cracks; 10 percent gravel; moderately alkaline; gradual smooth boundary.

Cr—32 inches; weakly consolidated calcareous sandstone.

The depth to horizons containing secondary calcium carbonate ranges from 11 to 16 inches. The depth to bedrock ranges from 20 to 40 inches. The A horizon is 0 to 10 percent gravel. It has a neutral or slightly alkaline reaction. The Bt horizon has hue of 7.5YR or 10YR; it is 22 to 30 percent clay, 35 to 55 percent fine or coarser sand, and 0 to 10 percent gravel. Reaction in the Bt horizon is neutral to moderately alkaline. The Bk horizon has a texture of sandy loam, fine sandy loam, or gravelly sandy loam. It has a moderately alkaline or strongly alkaline reaction.

Cutback Series

The Cutback series consists of moderately deep, well drained soils on pediments to the Laramie Range. They formed in alluvium and residuum derived from conglomerate and tuff. Slope ranges from 1 to 25 percent. Elevation is 6,800 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Cutback fine sandy loam, in an area of Cushool-Cutback complex, 2 to 10 percent slopes, 100

feet north, 1,200 feet west of the southeast corner of sec. 12, T. 24 N., R. 75 W.

A—0 to 1 inch; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine vesicular pores; 10 percent gravel; moderately alkaline; abrupt wavy boundary.

Bt—1 to 7 inches; yellowish brown (10YR 5/4) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and slightly plastic; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 5 percent gravel; slightly alkaline; clear wavy boundary.

Btk—7 to 17 inches; very pale brown (10YR 7/3) clay loam, pale brown (10YR 6/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; hard, friable, sticky and plastic; few faint pale brown (10YR 6/3) clay films on faces of peds; violently effervescent, calcium carbonate is disseminated; strongly alkaline; 10 percent gravel; clear wavy boundary.

2Bk1—17 to 25 inches; yellowish brown (10YR 5/4) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, sticky and plastic; violently effervescent, calcium carbonate as few medium and fine seams and soft masses; 80 percent gravel; moderately alkaline; clear wavy boundary.

2Bk2—25 to 31 inches; light olive brown (2.5Y 5/4) very gravelly sandy loam, olive brown (2.5Y 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; strongly effervescent, calcium carbonate as few medium and fine seams and soft masses; 50 percent gravel; strongly alkaline; abrupt wavy boundary.

3Cr—31 inches; weakly consolidated sandstone.

The depth to the base of the argillic horizon and to the 2Bk horizon ranges from 10 to 17 inches. The depth to bedrock ranges from 20 to 40 inches. The A horizon has a neutral to moderately alkaline reaction. The Bt horizon has a slightly alkaline or moderately alkaline reaction. The Bt horizon has a texture of loam, sandy clay loam, or clay loam. The 2Bk horizon has a fine-earth texture of sandy clay loam, sandy loam, or loamy sand; it is 45 to 70 percent rock fragments. The 2Bk horizon has a moderately alkaline or strongly alkaline reaction. Calcium carbonate equivalent in the 2Bk horizon is 15 to 30 percent.

Dahlquist Series

The Dahlquist series consists of very deep, well drained soils on fan terraces. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,800 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Dahlquist very gravelly sandy loam, in an area of Dahlquist-Rawlins-Browline complex, moist, 3 to 15 percent slopes, 300 feet east, 300 feet south of the northwest corner of sec. 33, T. 18 N, R. 77 W.

A—0 to 2 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; many fine roots and pores; 40 percent gravel and 10 percent cobbles; the surface is 20 percent covered with coarse gravel and fine cobbles; neutral; abrupt smooth boundary.

BA—2 to 5 inches; brown (10YR 5/3) very cobbly sandy clay loam, brown (10YR 4/3) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots and pores; 25 percent gravel and 25 percent cobbles; neutral; clear smooth boundary.

Bt1—5 to 15 inches; yellowish brown (10YR 5/4) very cobbly sandy clay loam, brown (10YR 4/3) moist; moderate medium angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots and pores; many faint clay films on faces of peds; 30 percent gravel and 15 percent cobbles; slightly alkaline; clear smooth boundary.

Bt2—15 to 20 inches; brownish yellow (10YR 6/6) very gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few fine roots and pores; few faint clay films on faces of peds; 30 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.

Bk2—20 to 60 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; strongly effervescent, calcium carbonate as few thin pendants on rock fragments; 45 percent gravel and 10 percent cobbles; moderately alkaline.

The surface is 15 to 50 percent covered with coarse gravel and fine cobbles. The Bt horizon has a texture of very cobbly sandy clay loam, very gravelly sandy clay loam, or extremely gravelly sandy clay loam; it is 20 to 28 percent clay, 35 to 50 percent fine or coarser sand, and 40 to 75 percent rock fragments. The Bt horizon has hue

of 7.5YR or 10YR. The reaction in this horizon is neutral or slightly alkaline. The Bk horizon has texture of very gravelly sandy loam or extremely gravelly sandy loam. It has a moderately alkaline or strongly alkaline reaction.

Dalecreek Series

The Dalecreek series consists of very deep, moderately well drained soils on flood plains and in valleys of mountainous areas. They formed in alluvium derived dominantly from granite. Slope ranges from 0 to 9 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Dalecreek sandy loam, in an area of Dalecreek-Kovich complex, 0 to 9 percent slopes, 1,200 feet west, 1,700 feet north of the southeast corner of sec. 36, T. 19 N., R. 73 W.

- A—0 to 2 inches; dark grayish brown (10YR 4/2) sandy loam, very dark gray (10YR 3/1) moist; weak fine platy structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many fine and few medium roots; neutral; abrupt smooth boundary.
- AB—2 to 8 inches; dark grayish brown (10YR 4/2) sandy loam, very dark gray (10YR 3/1) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, very friable, nonsticky and nonplastic; many fine and few medium roots; slightly effervescent, calcium carbonate is disseminated; slightly alkaline; clear smooth boundary.
- Bw1—8 to 21 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; slightly effervescent, calcium carbonate is disseminated; 5 percent fine gravel; slightly alkaline; gradual smooth boundary.
- Bw2—21 to 32 inches; gray (10YR 5/1) loam, very dark gray (10YR 3/1) moist; few fine distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few fine roots; slightly alkaline; abrupt smooth boundary.
- Cg—32 to 60 inches; gray (10YR 5/1) sandy clay loam stratified with thin lenses of loamy coarse sand, gray (10YR 5/1) moist; common medium distinct greenish gray (5GY 5/1), few fine faint olive (5Y 4/3), and few distinct very dark gray (5Y 3/1) mottles; massive; slightly hard, firm, slightly sticky and slightly plastic; few fine roots; slightly alkaline.

The depth to a seasonal high water table ranges from 2.5 to 4 feet from April through July. Reaction is neutral or moderately alkaline throughout the profile. The particle-size control section averages 18 to 35 percent clay. The Bw horizon has a texture of loam or sandy clay loam. The C horizon has a dominant texture of sandy clay loam or loam; but thin layers of loamy coarse sand, loamy sand, or sandy loam are present in most pedons.

Delphill Series

The Delphill series consists of moderately deep, well drained soils on hills, ridges, and escarpments. They formed in residuum and alluvium derived from shale and sandstone. Slope ranges from 3 to 45 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Delphill loam, in an area of Delphill-Blazon complex, 3 to 20 percent slopes, 2,000 feet east, 2,450 feet south of the northwest corner of sec. 19, T. 15 N., R. 75 W.

- A—0 to 1 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate medium and fine platy structure; soft, friable, slightly sticky and slightly plastic; few fine roots; common very fine vesicular pores; violently effervescent, calcium carbonate is disseminated; 10 percent gravel; moderately alkaline; abrupt smooth boundary.
- AC—1 to 6 inches; yellowish brown (10YR 5/4) clay loam, yellowish brown (10YR 5/4) moist; weak medium granular structure; soft, friable, slightly sticky and plastic; few fine roots; common very fine continuous irregular pores; violently effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
- C—6 to 21 inches; very pale brown (10YR 7/4) clay loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and plastic; few fine roots to 10 inches, few very fine roots below; common very fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.
- Cr—21 inches; weakly consolidated shale interbedded with sandstone.

The surface is 0 to 10 percent covered with gravel and cobbles. The depth to bedrock ranges from 20 to 40 inches. The particle-size control section is 20 to 35 percent clay. The A horizon is 0 to 10 percent gravel. The C horizon has a texture of clay loam or loam.

Diamondville Series

The Diamondville series consists of moderately deep, well drained soils on hills and ridges. They formed in residuum and alluvium derived dominantly from sandstone and shale. Slope ranges from 0 to 15 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Diamondville fine sandy loam, in an area of Diamondville-Cushool complex, 3 to 15 percent slopes, 2,100 feet west, 2,500 feet north of the southeast corner of sec. 11, T. 16 N., R. 74 W.

A—0 to 3 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; moderate medium and weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and common medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

AB—3 to 6 inches; pale brown (10YR 6/3) fine sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common fine and medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bt—6 to 18 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak coarse prismatic structure parting to strong medium subangular blocky; hard, firm, sticky and slightly plastic; common fine and medium roots; few faint clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bk1—18 to 22 inches; very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, friable, sticky and slightly plastic; few fine and medium roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

Bk2—22 to 35 inches; very pale brown (10YR 8/3) fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; hard, friable, slightly sticky and nonplastic; violently effervescent, calcium carbonate is disseminated; strongly alkaline; gradual wavy boundary.

Cr—35 to 60 inches; weakly consolidated interbedded sandstone and shale.

The depth to bedrock is 20 to 40 inches. Reaction is slightly alkaline or moderately alkaline in the A and Bt horizons. The A horizon is 0 to 5 percent gravel. The Bt

horizon has a texture of loam or clay loam; it is 20 to 35 percent clay and 15 to 35 percent fine or coarser sand. The Bk horizon has a texture of loam or fine sandy loam. It has hue of 2.5Y or 10YR. Reaction in the Bk horizon is moderately alkaline or strongly alkaline.

Diamonkit Series

The Diamonkit series consists of moderately deep, well drained soils on hillslopes. They formed in residuum and alluvium derived dominantly from gypsiferous sandstone and shale. Slope ranges from 1 to 15 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Diamonkit sandy loam, in an area of Diamonkit-Stylite sandy loams, 3 to 15 percent slopes, 1,250 feet south, 725 feet east of the northwest corner of sec. 12, T. 18 N., R. 74 W.

A—0 to 1 inch; light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine roots; slightly alkaline; abrupt smooth boundary.

Bt—1 to 3 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak thin platy structure parting to weak fine granular; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; few very fine pores; few faint clay films on faces of peds; moderately alkaline; clear smooth boundary.

Btk—3 to 11 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; strong medium and coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; common fine pores; many distinct clay films on faces of peds; violently effervescent, calcium carbonate is disseminated and also occurs as common medium threads and soft masses, 10 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.

Bky1—11 to 19 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few fine roots, common very fine pores; few faint clay films on faces of peds; violently effervescent, calcium carbonate is disseminated and also occurs as common medium threads and soft masses, 7 percent calcium carbonate equivalent; common soft masses of gypsum; electrical conductivity is 0.4 millimhos per

centimeter; moderately alkaline; gradual wavy boundary.

2Bky2—19 to 33 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, firm, sticky and plastic; few fine roots; few very fine pores; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine threads, 7 percent calcium carbonate equivalent; common medium threads and soft masses of gypsum; electrical conductivity is 4.6 millimhos per centimeter; moderately alkaline; gradual wavy boundary.

2Cr—33 to 60 inches; weakly consolidated interbedded sandstone and shale.

The depth to horizons with an accumulation of gypsum ranges from 11 to 22 inches. The depth to bedrock ranges from 20 to 40 inches. The A horizon has a slightly alkaline or moderately alkaline reaction. The Bt horizon has a texture of loam or sandy clay loam. It has a moderately alkaline or strongly alkaline reaction. The Bky horizon has a texture of loam or clay loam. It has hue of 10YR or 2.5Y. The Bky horizon has a moderately alkaline or strongly alkaline reaction, and an electrical conductivity of less than 8 millimhos per centimeter; it is 5 to 15 percent gypsum.

Edlin Series

The Edlin series consists of very deep, well drained soils on foot slopes and back slopes of ridges and escarpments. They formed in alluvium derived from sandstone. Slope ranges from 15 to 45 percent. Elevation is 6,500 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Edlin fine sandy loam, in an area of Carmody-Edlin sandy loams, 15 to 45 percent slopes, 1,000 feet south, 15 feet west of the northeast corner of sec. 32, T. 16 N., R. 76 W.

A—0 to 3 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; common very fine and few fine continuous irregular pores; neutral; abrupt smooth boundary.

BA—3 to 10 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots to 8 inches, few fine roots 8 to 10 inches; common very fine and few fine continuous irregular pores; neutral; clear smooth boundary.

Bw1—10 to 16 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; soft, very

friable, nonsticky and nonplastic; few fine roots; common very fine and few fine continuous irregular pores; neutral; clear smooth boundary.

Bw2—16 to 23 inches; light yellowish brown (2.5Y 6/4) fine sandy loam, light olive brown (10YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; few fine roots; common very fine and few fine continuous irregular pores; slightly alkaline; clear smooth boundary.

Bk1—23 to 40 inches; pale yellow (2.5Y 7/4) fine sandy loam, light yellowish brown (2.5Y 6/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots to a depth of 36 inches; common very fine and few fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated and also occurs as a few thin (1 millimeter) pendants on gravel; 3 percent gravel; moderately alkaline; gradual smooth boundary.

Bk2—40 to 60 inches; light yellowish brown (10YR 6/4) sandy loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses; less than 5 percent gravel; moderately alkaline.

The particle-size control section is 10 to 18 percent clay and 40 to 60 percent fine or coarser sand. The B horizons are 0 to 10 percent gravel. The Bw horizon has a neutral or slightly alkaline reaction. The Bk horizon has a texture of sandy loam or fine sandy loam. The calcium carbonate equivalent in the Bk horizon is 8 to 20 percent.

Elkol Series

The Elkol series consists of very deep, well drained soils on stream terraces and on hillslopes adjacent to playas. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Elkol silty clay loam, in an area of Elkol-Gerdrum Family complex, 1 to 8 percent slopes, 2,100 feet north, 600 feet west of the southeast corner of sec. 35, T. 15 N., R. 74 W.

A—0 to 2 inches; yellowish brown (10YR 5/4) silty clay loam, brown (10YR 4/3) moist; moderate medium granular structure; soft, very friable, sticky and plastic; many fine and medium roots; strongly alkaline; abrupt smooth boundary.

C1—2 to 9 inches; light olive brown (2.5Y 5/4) silty clay loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, firm, sticky and plastic; few fine and medium roots; strongly effervescent, calcium carbonate is disseminated; 10 percent soft shale platelets; strongly alkaline; gradual wavy boundary.

C2—9 to 18 inches; light olive brown (2.5Y 5/4) silty clay loam, olive brown (2.5Y 4/4) moist; massive; hard, firm, sticky and plastic; few fine and medium roots; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine seams and soft masses; 10 percent soft shale fragments; strongly alkaline; gradual wavy boundary.

C3—18 to 30 inches; yellowish brown (10YR 5/4) silty clay loam, olive brown (2.5Y 4/4) moist; massive; slightly hard, friable, sticky and plastic; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine seams and soft masses; 10 percent soft shale fragments; strongly alkaline; clear wavy boundary.

2C4—30 to 60 inches; light yellowish brown (10YR 6/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; 5 percent fine gravel; moderately alkaline.

Electrical conductivity ranges from 2 to 8 millimhos per centimeter throughout the profile. Reaction is moderately alkaline or strongly alkaline throughout the profile. Hue throughout the profile is 10YR or 2.5Y. Some pedons have a Bky horizon. The Bky and C horizons have textures of clay loam, silty clay loam, silty clay, or clay. Some pedons have a 2C horizon below a depth of 30 inches; this horizon has a texture of sandy clay loam.

Evanston Series

The Evanston series consists of very deep, well drained soils on foothills, mountain slopes, alluvial fans, and fan terraces. They formed in eolian deposits and alluvium. Slope ranges from 0 to 30 percent. Elevation is 6,300 to 7,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Evanston soil, in an area of Evanston fine sandy loam, 0 to 6 percent slopes, 2,400 feet south, 2,600 feet east of the northwest corner of sec. 18, T. 18 N., R. 70 W.

A—0 to 4 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; medium fine granular structure; soft, very friable, nonsticky and nonplastic; few fine and very fine pores; 5 percent fine gravel; neutral; abrupt smooth boundary.

Bt1—4 to 8 inches; dark yellowish brown (10YR 4/4) sandy clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few very fine pores; many faint clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bt2—8 to 14 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to strong medium and fine angular blocky; very hard, firm, slightly sticky and plastic; few fine and very fine roots; few very fine pores; many faint clay films on faces of peds; slightly alkaline; clear wavy boundary.

Btk—14 to 20 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate coarse and medium angular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine and very fine pores; few very fine pores; common faint clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear wavy boundary.

Bk1—20 to 36 inches; very pale brown (10YR 7/3) loam, pale brown (10YR 6/3) moist; moderate medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine pores to 30 inches; violently effervescent, calcium carbonate is disseminated and also occurs as soft masses; 10 percent fine gravel; moderately alkaline; clear wavy boundary.

Bk2—36 to 60 inches; very pale brown (10YR 7/3) loam, pale brown (10YR 6/3) moist; massive; hard, friable, slightly sticky and slightly plastic; violently effervescent, calcium carbonate is disseminated and also occurs as soft masses; 14 percent fine gravel; strongly alkaline.

The mollic epipedon is 7 to 10 inches thick. The Bt horizon has a texture of loam, sandy clay loam, or clay loam. The Bk horizon has a texture of loam or clay loam. The Bk horizon has a moderately alkaline or strongly alkaline reaction.

Fiveoh Series

The Fiveoh series consists of very deep, well drained soils on alluvial fans and terraces. They formed in alluvium. Slope ranges from 1 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Fiveoh sandy loam, in an area of Fiveoh-Fiveoh, cobbly substratum-Ryan Park complex, 1 to 8 percent slopes, 250 feet east, 200 feet north of the southwest corner of sec. 25, T. 16 N., R. 73 W.

A—0 to 2 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and common medium roots; slightly effervescent, calcium carbonate is disseminated; slightly alkaline; abrupt smooth boundary.

AB—2 to 6 inches; brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, fine, and common medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bw—6 to 16 inches; brown (7.5YR 5/4) fine sandy loam, dark brown (7.5YR 4/4) moist; strong coarse prismatic structure parting to strong coarse subangular blocky; hard, friable, nonsticky and nonplastic; common very fine, fine, and medium roots; strongly effervescent, calcium carbonate is disseminated; 5 percent gravel 2 to 3 inches in diameter; moderately alkaline; clear wavy boundary.

Bk1—16 to 27 inches; light brown (7.5YR 6/4) fine sandy loam, dark brown (7.5YR 4/4) moist; strong coarse prismatic structure parting to strong coarse subangular blocky; hard, firm, slightly sticky and nonplastic; few medium and coarse roots; violently effervescent, calcium carbonate is disseminated and also occurs as pendants on rock fragments; 10 percent coarse gravel; moderately alkaline; gradual wavy boundary.

Bk2—27 to 37 inches; light brown (7.5YR 6/4) fine sandy loam, dark brown (7.5YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; violently effervescent, calcium carbonate is disseminated and also occurs as pendants on rock fragments; 10 percent coarse gravel; moderately alkaline; gradual wavy boundary.

Bk3—37 to 60 inches; strong brown (7.5YR 5/6) fine sandy loam, strong brown (7.5YR 4/6) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; strongly effervescent, calcium carbonate is disseminated; moderately alkaline.

The particle-size control section is 5 to 18 percent clay. The control section averages 0 to 25 percent rock fragments. The A horizon has hue of 10YR or 7.5YR. The Bw horizon has a texture of sandy loam or fine sandy loam and is 0 to 10 percent gravel.

In areas of the cobbly substratum phase, the Bk horizon has a texture of cobbly sandy loam, gravelly fine sandy loam, or fine sandy loam and is 0 to 20 percent cobbles and 10 to 15 percent gravel. In other areas, the Bk horizon has a texture of sandy loam or fine sandy loam and is 0 to 15 percent gravel. In areas of the cobbly

substratum phase, a 2Bk horizon is present below a depth of 30 inches; this horizon has a texture of very cobbly sandy loam.

Calcium carbonate equivalent in the Bk horizon is 15 to 40 percent. Calcium carbonate equivalent in the 2Bk horizon is 10 to 20 percent. Reaction in the Bk and 2Bk horizons is moderately alkaline or strongly alkaline.

Folavar Series

The Folavar series consists of very deep, somewhat poorly drained soils on stream terraces. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Folavar very gravelly sandy loam, in an area of Folavar-Borollic Camborthids complex, 0 to 3 percent slopes, 2,500 feet east, 50 feet north of the southwest corner of sec. 27, T. 14 N., R. 76 W.

Oi—2 inches to 0; dense mat of roots and decaying organic materials.

A—0 to 5 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and few medium roots; many very fine and few fine continuous irregular pores; 40 percent gravel; neutral; clear smooth boundary.

Bw—5 to 12 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; many medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine roots; many very fine and few fine continuous irregular pores; 30 percent gravel; neutral; gradual smooth boundary.

2C1—12 to 20 inches; yellowish brown (10YR 5/4) very gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; few fine roots; many very fine and common fine continuous irregular pores; 60 percent gravel; neutral; gradual wavy boundary.

2C2—20 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; few fine roots; many very fine and common fine continuous irregular pores; 70 percent gravel; slightly alkaline.

The surface is 0 to 25 percent covered with gravel. The depth to the base of the cambic horizon is 11 to 12 inches. The depth to a seasonal high water table ranges from 0 to 2 feet from April through August. The rock

fragments throughout the profile are dominantly gravel with a few cobbles.

The A horizon is 35 to 45 percent rock fragments. The Bw horizon has a texture of gravelly sandy loam or very gravelly sandy loam; this horizon is 30 to 40 percent rock fragments. The C horizon commonly has a texture of very gravelly loamy sand or extremely gravelly loamy sand, but in some pedons it is extremely gravelly sand. The C horizon is 55 to 70 percent rock fragments. Reaction in the Bw and C horizons is neutral or slightly alkaline.

Forelle Series

The Forelle series consists of very deep, well drained soils on terraces, hills, and fan aprons. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Forelle fine sandy loam, in an area of Forelle-Diamondville association, 3 to 15 percent slopes, 800 feet east, 50 feet south of the northwest corner of sec. 1, T. 15 N., R. 74 W.

A—0 to 4 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; strong fine granular structure; soft, very friable, nonsticky and nonplastic; 5 percent gravel; slightly alkaline; clear smooth boundary.

Bt1—4 to 7 inches; brown (10YR 5/3) loam, dark brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, very friable, slightly sticky and slightly plastic; few distinct clay films on faces of peds; 5 percent gravel; slightly alkaline; clear smooth boundary.

Bt2—7 to 15 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, friable, slightly sticky and slightly plastic; many faint clay films on faces of peds and filling pores; 5 percent gravel; slightly alkaline; clear wavy boundary.

Btk—15 to 20 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; very hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds and along root channels; strongly effervescent, calcium carbonate is disseminated and also occurs as soft masses and seams; 5 percent gravel; moderately alkaline; gradual smooth boundary.

Bk—20 to 60 inches; light yellowish brown (2.5Y 6/3) loam, light olive brown (2.5Y 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; strongly effervescent, calcium carbonate is

disseminated and also occurs as soft masses, calcium carbonate decreases with increasing depth; 10 percent gravel; moderately alkaline.

The A and Bt horizons are 0 to 5 percent gravel. The Bt horizon commonly has a texture of clay loam, but in some pedons it is loam. The Bk horizon has a texture of sandy loam, fine sandy loam, sandy clay loam, or loam. It has hue of 2.5Y through 10YR. The Bk horizon is 0 to 10 percent gravel; it has a moderately alkaline or strongly alkaline reaction.

Gerdrum Family

The Gerdrum family consists of very deep, well drained or moderately well drained soils on hillslopes, fan terraces, and stream terraces. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Gerdrum Family loam, in an area of Tisworth-Gerdrum Family loams, 1 to 8 percent slopes, 850 feet east, 700 feet south of the northwest corner of sec. 21, T. 19 N., R. 73 W.

E—0 to 1 inch; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak fine platy structure parting to weak fine granular; soft, friable, slightly sticky and slightly plastic; common fine and few medium roots; many very fine and few fine continuous irregular pores; slightly alkaline; abrupt smooth boundary.

Btn1—1 to 4 inches; yellowish brown (10YR 4/4) clay loam, dark brown (10YR 4/3) moist; strong medium prismatic structure parting to strong medium angular blocky; hard, firm, sticky and plastic; common fine and few medium roots; common very fine and few fine continuous irregular pores; many distinct clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated; strongly alkaline; clear smooth boundary.

Btn2—4 to 16 inches; yellowish brown (10YR 5/4) clay loam, yellowish brown (10YR 5/4) moist; strong medium prismatic structure parting to moderate medium subangular blocky; hard, firm, sticky and plastic; common fine and few medium roots; common very fine and few fine continuous irregular pores; common distinct clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated; strongly alkaline; clear smooth boundary.

Bkyz1—16 to 36 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 4/3) moist; moderate medium prismatic structure parting to weak medium subangular blocky; slightly hard, firm, sticky and plastic; few fine roots; common very fine and few fine

continuous irregular pores; strongly effervescent, calcium carbonate is disseminated and also occurs as many large seams and soft masses; common (10 percent) medium soft masses of gypsum and other more soluble salts; moderately alkaline; clear smooth boundary.

Bkyz2—36 to 60 inches; brown (10YR 5/3) clay, dark yellowish brown (10YR 4/4) moist; many fine and medium distinct gray (10YR 5/1) lithochromic mottles; massive; hard, firm, sticky and plastic; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses; common (5 percent) fine and medium soft masses of gypsum and other more soluble salts; moderately alkaline.

The E horizon has a neutral to moderately alkaline reaction. The Btn horizon has a texture of clay loam, silty clay loam, silty clay, or clay; it is 35 to 45 percent clay. The Btn horizon has hue of 10YR or 2.5Y. It has a strongly alkaline or very strongly alkaline reaction.

The Bkyz horizon has a texture of clay loam, silty clay loam, or clay. It has hue of 10YR or 2.5Y. This horizon is 1 to 5 percent gypsum. It has a moderately alkaline to very strongly alkaline reaction, and an electrical conductivity of more than 8 millimhos per centimeter.

In map unit 155, this soil has a seasonal high water table at a depth of 4 to 6 feet.

Gerrard Series

The Gerrard series consists of very deep, poorly drained soils on low terraces and flood plains. They formed in alluvium. Slope ranges from 0 to 2 percent. Elevation is 6,000 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Gerrard loam, in an area of Grenoble-Gerrard complex, 0 to 3 percent slopes, 2,150 feet south, 2,100 feet east of the northwest corner of sec. 29, T. 14 N., R. 75 W.

A1—0 to 6 inches; dark gray (10YR 4/1) loam, very dark gray (10YR 3/1) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; neutral; clear smooth boundary.

A2—6 to 12 inches; grayish brown (10YR 5/2) loam, very dark gray (10YR 3/1) moist; common fine distinct strong brown (7.5YR 5/6 and 5/8) moist mottles; weak fine granular structure and some horizontal bedding planes; hard, friable, slightly sticky and slightly plastic; few fine roots; neutral; clear smooth boundary.

2C—12 to 24 inches; light brownish gray (2.5Y 6/2) very gravelly loamy sand, very dark grayish brown (2.5Y 3/2) moist; single grain; loose, nonsticky and nonplastic; 60 percent gravel; neutral; gradual smooth boundary.

2Cg—24 to 60 inches; light gray (10YR 7/2) very gravelly sand, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and nonplastic; 60 percent gravel; slightly alkaline.

The depth to the 2C horizon ranges from 12 to 18 inches. Reaction is neutral or slightly alkaline throughout the profile. The depth to a seasonal high water table ranges from 0 to 1.5 feet from March through June. The A horizon has hue of 10YR through 5Y; it is 0 to 10 percent gravel. The 2C horizon has hue of 10YR or 2.5Y. It has a fine-earth texture of loamy sand, loamy fine sand, or sand. The 2C horizon commonly is 35 to 60 percent gravel, but in some pedons it is less than 35 percent gravel or as much as 75 percent gravel.

Glendive Series

The Glendive series consists of very deep, moderately well drained soils on flood plains and low terraces. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Glendive loam, in an area of Glendive-Redrob-Grenoble, 0 to 3 percent slopes, 1,800 feet east, 2,850 feet north of the southwest corner of sec. 34, T. 21 N., R. 74 W.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and few medium roots; moderately alkaline; abrupt smooth boundary.

A2—2 to 6 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many fine and few medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

AC—6 to 12 inches; yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; 50 percent weak medium subangular blocky structure and 50 percent horizontal bedding planes; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; slightly alkaline; gradual smooth boundary.

C1—12 to 30 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very

friable, nonsticky and nonplastic; few fine and medium roots; slightly alkaline; abrupt smooth boundary.

C2—30 to 36 inches; dark grayish brown (2.5Y 4/2) sandy loam, very dark grayish brown (2.5Y 3/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; slightly alkaline; abrupt smooth boundary.

C3—36 to 60 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; few fine distinct brownish yellow (10YR 6/6) moist, mottles; massive; slightly hard, very friable, nonsticky and nonplastic; slightly alkaline.

Reaction is slightly alkaline or moderately alkaline throughout the profile. The particle-size control section averages 10 to 18 percent clay. The depth to a seasonal high water table ranges from 3 to 5 feet in April through August. The C horizon has a dominant texture of sandy loam or fine sandy loam, but thin layers of loam or loamy sand are commonly present.

Granile Series

The Granile series consists of very deep, well drained soils on fan terrace escarpments, foothills, and mountain alluvial fans. They formed in alluvium derived from igneous and metamorphic rock. Slope ranges from 6 to 45 percent. Elevation is 7,600 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Granile gravelly sandy loam, in an area of Ansel-Granile gravelly sandy loams, 6 to 45 percent slopes, 1,000 feet north, 500 feet west of the southeast corner of sec. 13, T. 14 N., R. 78 W.

Oe—1 inch to 0; partially decomposed pine needles.

A—0 to 2 inches; light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; slightly hard, very friable, nonsticky and nonplastic; common medium and fine roots; 20 percent fine gravel, 5 percent cobbles; neutral; clear smooth boundary.

E—2 to 10 inches; light gray (10YR 7/2) very gravelly sandy loam, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium and fine roots; 45 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.

EB—10 to 15 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; moderate medium and fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few medium and fine roots, 40 percent gravel, 10 percent cobbles; neutral; clear wavy boundary.

Bt—15 to 24 inches; light yellowish brown (10YR 6/4) very gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; weak medium prismatic structure parting to moderate medium angular blocky; hard, friable, slightly sticky and slightly plastic; few medium and fine roots; common distinct brown (7.5YR 4/4) clay films on faces of pedis; 40 percent gravel, 10 percent cobbles; neutral; gradual smooth boundary.

C—24 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; 40 percent gravel; neutral.

The surface is covered with 0 to 15 percent gravel and 0 to 5 percent cobbles. The E horizon has hue of 10YR or 7.5YR. This horizon is 10 to 50 percent rock fragments. The Bt horizon has a texture of very gravelly sandy clay loam, very gravelly clay loam, or very cobbly clay loam. It is 25 to 35 percent clay, 30 to 50 percent fine or coarser sand, and 40 to 60 percent rock fragments. Hue of the Bt horizon is 10YR or 7.5YR. The C horizon has a texture of very gravelly sandy loam or very cobbly sandy loam.

Grenoble Series

The Grenoble series consists of very deep, somewhat poorly drained soils on flood plains and low stream terraces. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Grenoble gravelly loamy sand, in an area of Grenoble-Gerrard complex, 0 to 3 percent slopes, 200 feet west, 150 feet south of the northeast corner of sec. 25, T. 14 N., R. 76 W.

A—0 to 9 inches; brown (10YR 4/3) gravelly loamy sand, dark brown (7.5YR 3/2) moist; moderate medium granular structure; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; about 20 percent medium and fine igneous gravel; slightly acid; clear smooth boundary.

C—9 to 60 inches; yellowish brown (10YR 5/4) very gravelly sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; about 55 percent gravel and 5 percent igneous cobble; slightly acid.

The surface is 0 to 40 percent covered with igneous gravel. Reaction is slightly acid to slightly alkaline throughout the profile. The depth to a seasonal high water table ranges from 2 to 3.5 feet from March through

August. The C horizon has a texture of very gravelly loamy sand or very gravelly sand.

Greyback Series

The Greyback series consists of very deep, somewhat excessively drained soils on outwash alluvial fans. They formed in glacial outwash derived from various sources. Slope ranges from 1 to 6 percent. Elevation is 7,800 to 8,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Greyback very cobbly sandy loam, in an area of Greyback very cobbly sandy loam, 1 to 6 percent slopes, 250 feet east, 50 feet south of the northwest corner of sec. 12, T. 15 N., R. 78 W.

- A—0 to 3 inches; grayish brown (10YR 5/2) very cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; common very fine continuous pores; 10 percent gravel, 30 percent cobbles; the surface is covered with 20 percent cobbles and 10 percent stones; slightly alkaline; abrupt smooth boundary.
- AB—3 to 9 inches; brown (10YR 5/3) very cobbly sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; few very fine continuous pores; 10 percent gravel, 40 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.
- Bw—9 to 16 inches; pale brown (10YR 6/3) very cobbly sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots to 10 inches, few very fine below; 20 percent gravel, 25 percent cobbles, and 10 percent stones; slightly alkaline; clear wavy boundary.
- Bk1—16 to 30 inches; brown (10YR 5/3) very cobbly coarse sandy loam, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; strongly effervescent; common thin (1-3 mm) pendants of calcium carbonate on rock fragments; 20 percent gravel and 40 percent cobbles; moderately alkaline; clear wavy boundary.
- Bk2—30 to 36 inches; brown (10YR 5/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; strongly effervescent; many thin (1-3 mm) pendants of calcium carbonate on rock fragments; 40 percent gravel and 10 percent cobbles; moderately alkaline; clear wavy boundary.
- Bk3—36 to 60 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 5/3) moist;

single grain; loose, nonsticky and nonplastic; strongly effervescent; few thin (1-3 mm) pendants of calcium carbonate on rock fragments; 40 percent gravel and 5 percent cobbles; moderately alkaline.

The surface is 20 to 30 percent covered with gravel, cobbles, and stones. The mollic epipedon is 7 to 9 inches thick. The A horizon is 10 to 20 percent gravel and 20 to 30 percent cobbles. It has a neutral or slightly alkaline reaction. The Bw horizon has a texture of very cobbly sandy loam or very gravelly sandy loam. This horizon is 20 to 40 percent gravel, 20 to 25 percent cobbles, and 0 to 10 percent stones. The Bw horizon has a neutral or slightly alkaline reaction.

The Bk horizon has a dominant fine-earth texture of coarse sandy loam, but thin layers of loamy coarse sand or loamy sand occur in some pedons. This horizon is very gravelly, extremely gravelly, or very cobbly. It is 20 to 45 percent gravel, 5 to 40 percent cobbles, and 0 to 5 percent stones.

Gypla Series

The Gypla series consists of very deep, somewhat poorly drained soils on flood plains and in swales and sloughs. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Gypla soil, in an area of Gypla loam, 0 to 3 percent slopes, 1,175 feet west and 2,340 feet north of the southeast corner of sec. 34, T. 14 N., R. 73 W.

- A—0 to 5 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine roots; slightly effervescent; electrical conductivity of 21 millimhos per centimeter; 5 percent gravel; moderately alkaline; clear smooth boundary.
- By1—5 to 36 inches; white (10YR 8/2) silt loam, very pale brown (10YR 8/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; slightly effervescent; calcium carbonate is disseminated and also occurs as few small masses; many fine irregular small masses of gypsum; electrical conductivity of 14 millimhos per centimeter; 5 percent gravel; slightly alkaline; gradual wavy boundary.
- By2—36 to 60 inches; very pale brown (10YR 7/3) gravelly silt loam, brownish yellow (10YR 6/6) moist with few fine distinct light olive brown (2.5Y 5/8) and many fine and medium distinct very pale brown (10YR 8/3) mottles; massive; soft, very friable, slightly sticky

and slightly plastic; slightly effervescent; calcium carbonate is disseminated and also occurs as fine small masses; many fine irregular small masses of gypsum; electrical conductivity of 18 millimhos per centimeter; 16 percent gravel; slightly alkaline.

The depth to a seasonal high water table ranges from 1.5 to 3.5 feet from April through July. The hue is 7.5YR through 10YR throughout the profile. Electrical conductivity is greater than 12 millimhos per centimeter throughout the profile. Reaction throughout the profile is slightly alkaline or moderately alkaline.

The By horizon has a fine-earth texture of loam or silt loam with 10 to 18 percent clay. The part of the By horizon above a depth of 35 inches is 0 to 5 percent gravel. The part of the By horizon below a depth of 35 inches is 10 to 20 percent gravel. Calcium carbonate equivalent in the By horizon ranges from 1 to 14 percent. This horizon is 40 to 60 percent gypsum.

Hanson Series

The Hanson series consists of very deep, well drained soils on fan terraces. They formed in glacial outwash or glacial outwash overlying glacial till. Slope ranges from 3 to 15 percent. Elevation is 7,800 to 8,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Hanson gravelly sandy loam, in an area of Hanson-Quander complex, 3 to 15 percent slopes, 2,000 feet north, 350 feet west of the southeast corner of sec. 8, T. 17 N., R. 77 W.

A—0 to 3 inches; brown (10YR 4/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common medium and fine roots; common fine pores; few fine soft masses of calcium carbonate, strongly effervescent; 25 percent medium and coarse gravel and few cobbles; the surface is covered with 20 percent gravel, 5 percent cobbles, and a few stones; slightly alkaline; clear smooth boundary.

ABk—3 to 8 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; few fine and very fine roots; common very fine pores; common fine soft masses of calcium carbonate, violently effervescent, calcium carbonate equivalent is 27 percent; 20 percent medium and coarse gravel, 10 percent cobbles; slightly alkaline; clear wavy boundary.

Bk1—8 to 12 inches; pinkish white (7.5YR 8/2) very cobbly loam, pinkish gray (7.5YR 7/2) moist; weak fine subangular blocky structure; soft, friable, slightly

sticky and slightly plastic, few fine and very fine roots; common very fine pores; calcium carbonate is disseminated and also occurs as pendants on under sides of rock fragments, violently effervescent, calcium carbonate equivalent is 42 percent; 15 percent medium and coarse gravel, 30 percent cobbles, and 5 percent stones; moderately alkaline; clear wavy boundary.

Bk2—12 to 25 inches; pink (7.5YR 8/4) very cobbly loam, pink (7.5YR 7/4) moist; massive, slightly hard, friable, slightly sticky and slightly plastic; few very fine pores; calcium carbonate is disseminated and also occurs as pendants on undersides and sides of rock fragments, violently effervescent, calcium carbonate equivalent is 41 percent; 20 percent medium and coarse gravel, 35 percent cobbles, and 5 percent stones; strongly alkaline; clear smooth boundary.

2Bk3—25 to 60 inches; reddish yellow (7.5YR 6/6) very cobbly clay loam, strong brown (7.5YR 5/6) moist; massive; hard, friable, sticky and plastic; common fine and very fine pores; common fine carbonate filaments and thin pendants on rock fragments; slightly effervescent, calcium carbonate equivalent is 2 percent; 30 percent medium and coarse gravel, 30 percent fine cobbles, and a few stones in upper part; moderately alkaline.

The surface is 25 to 45 percent covered with gravel, cobbles, and a few stones. The mollic epipedon is 8 to 12 inches thick. The particle-size control section averages 20 to 30 percent clay, 35 to 50 percent fine or coarser sand, and 45 to 60 percent rock fragments.

The A horizon is 15 to 25 percent gravel and 10 percent cobbles. It has a slightly alkaline or moderately alkaline reaction. The Bk horizon commonly has a texture of very cobbly loam or very cobbly clay loam, but in some pedons it is very gravelly loam. It has hue of 7.5YR or 10YR. The Bk horizon is 15 to 45 percent gravel, 10 to 40 percent cobbles, and 0 to 10 percent stones. It has a moderately alkaline or strongly alkaline reaction. Calcium carbonate equivalent in the Bk horizon is 40 to 50 percent. The 2Bk horizon is absent in some pedons.

This Hanson soil is outside the characteristics of the Hanson series. The mollic epipedon of this soil has a higher color value and chroma and it is thinner.

Hapjack Series

The Hapjack series consists of shallow, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 5 to 25 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Hapjack gravelly sandy loam, in an area of Hapjack-Rogert-Amesmont complex, 3 to 25 percent slopes, 1,800 feet east, 40 feet north of the southwest corner of sec. 24, T. 14 N., R. 72 W.

A—0 to 3 inches; brown (7.5YR 5/2) gravelly sandy loam, dark brown (7.5YR 3/2) moist; moderate medium and fine granular structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine and few medium roots; 20 percent gravel; the surface is 40 percent covered with gravel; neutral; abrupt smooth boundary.

Bt—3 to 10 inches; brown (7.5YR 5/4) gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; strong coarse and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; many faint clay films on faces of peds; 33 percent gravel; neutral; clear smooth boundary.

C—10 to 19 inches; brown (7.5YR 5/4) extremely gravelly sandy loam, brown (7.5YR 4/4) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; 62 percent gravel; neutral; abrupt irregular boundary.

R—19 inches; granite.

The depth to bedrock ranges from 10 to 20 inches. The control section, which includes the Bt and C horizons, averages 15 to 24 percent clay and 35 to 60 percent rock fragments. Reaction is neutral or slightly alkaline throughout the profile. The hue is 7.5YR or 10YR in the A horizon, 5YR to 10YR in the Bt horizon, and 5YR or 7.5YR in the C horizon.

The A horizon is 15 to 35 percent gravel. The Bt horizon has a texture of gravelly sandy clay loam, gravelly sandy loam, very gravelly sandy loam, or very gravelly sandy clay loam. The C horizon has a texture of extremely gravelly sandy loam, extremely gravelly loamy sand, or very gravelly sandy loam. This horizon is 40 to 80 percent gravel.

Hilltoppe Series

The Hilltoppe series consists of shallow, well drained soils on fan terraces. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 7,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Hilltoppe very gravelly sandy loam, in an area of Browtine-Hilltoppe very gravelly sandy loams, 0 to 8 percent slopes, 2,080 feet north, 25 feet east of the southwest corner of sec. 33, T. 16 N., R. 76 W.

A—0 to 3 inches; brown (10YR 5/3) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak fine

granular structure; soft, very friable, nonsticky and nonplastic; many fine roots and pores; strongly effervescent, calcium carbonate disseminated and as pendant fragments, calcium carbonate equivalent is 15 percent; 40 percent medium and fine quartzite gravel; the surface is 30 percent covered with gravel; moderately alkaline; clear smooth boundary.

Bk1—3 to 8 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; very weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots and pores; violently effervescent, calcium carbonate disseminated and also as many pendants on rock fragments and pendant fragments, calcium carbonate equivalent is 42 percent; 50 percent medium quartzite gravel; moderately alkaline; clear smooth boundary.

Bk2—8 to 14 inches; very pale brown (10YR 7/3) extremely gravelly sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and slightly plastic; few fine roots and pores; violently effervescent, calcium carbonate disseminated and also occurs as and many pendants on rock fragments and pendant fragments, calcium carbonate equivalent is 51 percent; 75 percent medium and coarse quartzite gravel and few cobbles; moderately alkaline; abrupt smooth boundary.

Bkm—14 to 33 inches; petrocalcic horizon consisting of 40 percent quartzite gravel and 30 percent quartzite cobbles in an indurated, laminated calcium carbonate matrix; abrupt smooth boundary.

Ck—33 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; strongly effervescent, calcium carbonate disseminated, calcium carbonate equivalent is 25 percent; 50 percent quartzite gravel and 20 percent fine quartzite cobbles; moderately alkaline.

The surface is 0 to 30 percent covered with gravel and a few cobbles. The depth to the petrocalcic horizon ranges from 10 to 20 inches. The particle-size control section is 8 to 18 percent clay and 35 to 85 percent rock fragments. The hue is 7.5YR through 2.5Y throughout the profile.

The A horizon has a slightly alkaline or moderately alkaline reaction. The Bk horizon has a fine-earth texture of sandy loam or fine sandy loam and it is very gravelly or extremely gravelly. This horizon is 50 to 80 percent rock fragments. The rock fragments consist of 50 to 75 percent gravel and 0 to 20 percent cobbles. The Bk horizon has a moderately alkaline or strongly alkaline reaction. Calcium carbonate equivalent in this horizon is 40 to 60 percent.

The Bkm horizon is 15 to 40 percent gravel and 30 to 45 percent cobbles. The Ck horizon has a calcium

carbonate equivalent of 10 to 30 percent and a moderately alkaline or strongly alkaline reaction.

Ipson Series

The Ipson series consists of very deep, well drained soils on dissected alluvial fans and fan terraces. They formed in gravelly alluvium. Slope ranges from 6 to 30 percent. Elevation is 6,500 to 7,200 feet, average annual precipitation is 15 to 17 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Ipson gravelly sandy loam, in an area of Ipson-Evanston complex, 6 to 30 percent slopes, 2,600 feet east, 1,650 feet south of the northwest corner of sec. 18, T. 18 N., R. 70 W.

A—0 to 2 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and very fine roots; 15 percent fine gravel; neutral; clear smooth boundary.

AB—2 to 8 inches; brown (10YR 4/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few fine and very fine roots; few fine pores; 20 percent fine gravel; slightly alkaline; clear smooth boundary.

Bt—8 to 14 inches; brown (10YR 5/3) very gravelly sandy clay loam, brown (10YR 4/3) moist; moderate medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few fine pores; many distinct clay films on faces of peds; 40 percent fine gravel; slightly alkaline; gradual smooth boundary.

C1—14 to 24 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; 50 percent medium and fine gravel; slightly alkaline; gradual smooth boundary.

C2—24 to 60 inches; very pale brown (10YR 7/3) very gravelly coarse sandy loam, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and nonplastic; 50 percent medium and fine gravel; slightly alkaline.

The mollic epipedon is 8 to 10 inches thick. The A horizon has a neutral or slightly alkaline reaction. The Bt horizon is 20 to 30 percent clay and 35 to 50 percent fine or coarser sand.

This soil is outside the characteristics of the Ipson series because it is noneffervescent in the C horizons.

Joemre Series

The Joemre series consists of very deep, well drained soils on alluvial fans, fan aprons, and terraces. They formed in alluvium. Slope ranges from 2 to 15 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Joemre soil, in an area of Joemre fine sandy loam, 3 to 6 percent slopes, 2,000 feet west, 2,700 feet north of the southeast corner of sec. 14, T. 16 N., R. 73 W.

A—0 to 2 inches; yellowish red (5YR 5/6) fine sandy loam, yellowish red (5YR 4/6) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; common fine and few medium roots; strongly effervescent, calcium carbonate is disseminated; less than 5 percent gravel; slightly alkaline; abrupt smooth boundary.

Bt—2 to 5 inches; yellowish red (5YR 5/6) fine sandy loam, yellowish red (5YR 4/6) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and few medium roots to 4 inches, few fine and medium roots below; few faint clay films lining pores and bridging sand grains; strongly effervescent, calcium carbonate is disseminated and has a 7 percent calcium carbonate equivalent; less than 5 percent gravel; moderately alkaline; clear wavy boundary.

Btk—5 to 13 inches; yellowish red (5YR 4/6) loam, red (2.5YR 4/6) moist; strong coarse prismatic structure parting to strong coarse subangular blocky; hard, firm, slightly sticky and slightly plastic; few fine and medium roots; common distinct clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses, 9 percent calcium carbonate equivalent; less than 5 percent gravel; moderately alkaline; clear wavy boundary.

Bk—13 to 60 inches; yellowish red (5YR 5/8) fine sandy loam, yellowish red (5YR 5/6) moist; massive; slightly hard, friable, sticky and nonplastic; few fine and medium roots; violently effervescent, calcium carbonate is disseminated and also occurs as thin pendants on the undersides of gravel, 13 percent calcium carbonate equivalent; 10 percent gravel; moderately alkaline.

The hue is 2.5YR to 7.5YR in the A horizon and 5YR or 2.5YR in the Bt horizon. The A horizon has a slightly alkaline or moderately alkaline reaction. The Bt and Bk

horizons have textures of fine sandy loam, very fine sandy loam, or loam. The Bt horizon is 10 to 17 percent clay and 0 to 5 percent rock fragments. The Bk horizon is 0 to 10 percent gravel. Calcium carbonate equivalent in the Bk horizon is 9 to 20 percent. The Bk horizon has a moderately alkaline or strongly alkaline reaction.

Kemmerer Series

The Kemmerer series consists of moderately deep, well drained soils on escarpments. They formed in residuum and alluvium derived from shale. Slope ranges from 3 to 20 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Kemmerer clay loam, in an area of Moyerson-Kemmerer complex, 3 to 20 percent slopes, 2,150 feet south, 100 feet west of the northeast corner of sec. 26, T. 25 N., R. 76 W.

- A—0 to 2 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate medium granular structure; slightly hard, friable, sticky and plastic; few fine roots; neutral; abrupt smooth boundary.
- Bw1—2 to 8 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; 20 percent soft shale platelets that break down when wetted; slightly alkaline; clear smooth boundary.
- Bw2—8 to 15 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate medium angular blocky structure; very hard, very firm, sticky and plastic; few fine roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual smooth boundary.
- Bk1—15 to 25 inches; gray (5Y 5/1) silty clay loam, dark gray (5Y 4/1) moist; many fine distinct dark grayish brown (2.5Y 4/2), moist, lithochromic mottles; massive; hard, firm, sticky and plastic; few fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine filaments or threads; moderately alkaline; gradual smooth boundary.
- Bk2—25 to 34 inches; olive gray (5Y 5/2) silty clay, olive gray (5Y 4/2) moist; massive; hard, firm, sticky and plastic; few fine roots; slightly effervescent, calcium carbonate as few fine filaments or threads; 75 percent soft shale platelets that break down when moistened and rubbed; moderately alkaline; gradual smooth boundary.
- Cr—34 to 60 inches; weakly consolidated shale bedrock with few fine salt accumulations in fractures.

The depth to bedrock ranges from 20 to 40 inches. The A horizon has a neutral or slightly alkaline reaction. The Bw horizon has a slightly alkaline or moderately alkaline reaction. The B horizons have textures of clay loam, silty clay loam, or silty clay.

Kezar Series

The Kezar series consists of moderately deep, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 5 to 25 percent. Elevation is 7,800 to 9,000 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Kezar sandy loam, in an area of Kezar-Carbol-Rock outcrop complex, 5 to 25 percent slopes, 1,270 feet north, 570 feet east of the southwest corner of sec. 31, T. 17 N., R. 71 W.

- A—0 to 4 inches; brown (10YR 4/3) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine, and common medium roots; neutral; abrupt wavy boundary.
- AB—4 to 10 inches; dark yellowish brown (10YR 4/4) sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure parting to moderate medium granular; soft, very friable, nonsticky and nonplastic; common very fine and few medium roots; very few faint clay films on faces of ped; neutral; abrupt wavy boundary.
- Bt1—10 to 20 inches; brown (7.5YR 4/4) sandy clay loam, dark brown (7.5YR 3/4) moist; weak; coarse prismatic structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; few fine and medium roots; few thin and distinct clay films on faces of ped; 5 percent gravel and 5 percent cobbles; neutral; clear wavy boundary.
- 2Bt2—20 to 31 inches; light olive brown (2.5Y 5/4) very cobbly sandy clay loam, dark grayish brown (2.5Y 4/2) moist; weak medium and fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few fine and medium roots; few faint clay films on faces of ped; 25 percent cobbles and 20 percent gravel; neutral; clear wavy boundary.
- R—31 inches; anorthositic granite.

The depth to hard bedrock ranges from 20 to 40 inches. The mollic epipedon is 7 to 11 inches thick. The particle-size control section averages 5 to 15 percent rock fragments. The Bt1 horizon has hue of 10YR or 7.5YR. This horizon is 0 to 15 percent gravel and 0 to 5 percent cobbles. The 2Bt2 horizon is absent in some pedons.

Kildor Series

The Kildor series consists of moderately deep, well drained soils on mountain slopes and mountain toe slopes. They formed in residuum and alluvium derived from shale. Slope ranges from 5 to 50 percent. Elevation is 7,800 to 8,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Kildor gravelly loam, in an area of Kildor-Rock outcrop association, 5 to 50 percent slopes, 3,300 feet north, 2,400 feet east of the southwest corner of sec. 12, T. 16 N., R. 78 W.

A—0 to 10 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; many very fine pores; 15 percent gravel and 5 percent cobbles; the surface is 30 percent covered with gravel and cobbles; neutral; abrupt wavy boundary.

Bw1—10 to 15 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; abrupt wavy boundary.

Bw2—15 to 22 inches; light olive brown (2.5Y 5/4) clay loam, olive brown (2.5Y 4/4) moist; moderate medium and fine angular blocky structure; hard, firm, sticky and plastic; few fine roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt wavy boundary.

Bk—22 to 38 inches; light gray (2.5Y 7/2) clay, light brownish gray (2.5Y 6/2) moist; moderate massive; very hard, firm, sticky and plastic; violently effervescent, calcium carbonate is disseminated and also occurs as many medium soft masses; moderately alkaline; abrupt wavy boundary.

Cr—38 inches; light gray (10YR 7/1) weakly consolidated brittle shale.

The surface is 0 to 30 percent covered with igneous gravel and small cobbles. The depth to bedrock ranges from 20 to 40 inches. The mollic epipedon is 10 to 12 inches thick. The particle-size control section is 35 to 45 percent clay and 15 to 35 percent fine or coarser sand. The A horizon is 10 to 20 percent gravel and 0 to 5 percent cobbles. The Bw and Bk horizons have textures of clay loam or clay. The Bw horizon has a neutral to moderately alkaline reaction. The Bk horizon has hue of 10YR or 2.5Y.

Kiltabar Series

The Kiltabar series consists of very deep, somewhat poorly drained soils on stream terraces, in drainageways, and in areas adjacent to playas and intermittent lakes. They formed in alluvium. Slope ranges from 0 to 3 percent, with hummocky microrelief common. Elevation is 6,800 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Kiltabar silty clay loam, in an area of Kiltabar-Tismid complex, 0 to 3 percent slopes, 550 feet east, 250 feet south of the northwest corner of sec. 29, T. 19 N., R. 74 W.

Azy—0 to 1 inch; yellowish brown (10YR 5/4) silty clay loam; dark yellowish brown (10YR 4/4) moist; strong very thick platy structure; hard, very friable, very sticky and very plastic; common very fine continuous irregular pores; slightly effervescent, calcium carbonate is disseminated; common (5 percent) soft masses of gypsum; electrical conductivity of 30 millimhos per centimeter; strongly alkaline; abrupt smooth boundary.

Bzy1—1 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; massive; extremely hard, friable, very sticky and very plastic; common very fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated; common (5 percent) fine crystals of gypsum and other salts; electrical conductivity of 29 millimhos per centimeter; moderately alkaline; clear smooth boundary.

Bzy2—16 to 40 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; massive; extremely hard, friable, very sticky and very plastic; common very fine continuous irregular pores; slightly effervescent, calcium carbonate is disseminated; many (25 percent) medium and coarse crystals of gypsum and other salts; electrical conductivity of 28 millimhos per centimeter; moderately alkaline; gradual wavy boundary.

C—40 to 60 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; massive; extremely hard, friable, very sticky and very plastic; common very fine continuous irregular pores; slightly effervescent, calcium carbonate is disseminated; electrical conductivity of 8 millimhos per centimeter; strongly alkaline.

The depth to a seasonal high water table ranges from 2 to 4 feet from March through September. The hue is 10YR or 2.5Y throughout the profile. Reaction is

moderately alkaline or strongly alkaline throughout the profile. The B_{zy} horizon has a texture of silty clay loam, clay loam, or loam. The C horizon has a texture of clay loam or silty clay loam. Electrical conductivity in the C horizon is more than 8 millimhos per centimeter.

Kovich Series

The Kovich series consists of very deep, poorly drained soils on flood plains and in valleys of mountainous areas. They formed in alluvium derived dominantly from granite. Slope ranges from 0 to 3 percent slopes. Elevation is 6,000 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Kovich loam, in an area of Dalecreek-Kovich complex, 0 to 9 percent slopes, 850 feet south and 2,400 feet east of the northwest corner of sec. 9, T. 18 N., R. 71 W.

A—0 to 8 inches; dark brown (10YR 3/3) loam, very dark brown (10YR 2/2) moist; common fine prominent strong brown (7.5YR 5/8) mottles; strong coarse granular structure; slightly hard, very friable, nonsticky and nonplastic; many fine and common medium roots; 5 percent gravel; neutral; clear smooth boundary.

A₂—8 to 31 inches; black (10YR 2/1) loam, very dark grayish brown (10YR 3/2) moist; many medium prominent strong brown (7.5YR 5/8) mottles; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine and few medium roots; 5 percent gravel; slightly alkaline; gradual wavy boundary.

C_g—31 to 60 inches; grayish brown (10YR 5/2) gravelly sandy clay loam stratified with sandy loam, loam, and gravelly sand, very dark gray (10YR 3/1) moist; many medium prominent strong brown (7.5YR 5/8) and many large prominent gray (5Y 5/1) mottles; massive; very hard, firm, slightly sticky and slightly plastic; few fine roots; 15 percent gravel; mildly alkaline.

The depth to a seasonal high water table ranges from 0 to 2.5 feet from April through August. The mollic epipedon is 28 to 41 inches thick. The particle-size control section averages 18 to 30 percent clay and 5 to 20 percent gravel. Reaction is neutral or slightly alkaline throughout the profile. The A₂ horizon has a fine-earth texture of loam, sandy clay loam, or clay loam; it is 5 to 20 percent gravel. The C horizon has hue of 10YR, 5Y, or 5GY. It has a dominant texture of gravelly sandy clay

loam, but is stratified with layers of loam, sandy loam, loamy sand, or gravelly sand. The C horizon averages 15 to 30 percent gravel.

Lahtida Series

The Lahtida series consists of moderately deep, well drained soils on the back slopes and foot slopes of the interfluvial ridges and on breaks of the dissected pediments to the Laramie Range. They formed in alluvium and residuum derived dominantly from tuffaceous claystone. Slope ranges from 2 to 12 percent. Elevation is 7,000 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Lahtida loam, in an area of Shirley Basin-Twocabin-Lahtida complex, 0 to 15 percent slopes, 1,500 feet south and 500 feet east of the northwest corner of sec. 4, T. 27 N., R. 76 W.

A—0 to 2 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine and common medium roots; the surface is 25 percent covered with gravel and cobbles; neutral; clear wavy boundary.

B_{t1}—2 to 10 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to strong medium subangular blocky; slightly hard, firm, sticky and plastic; common very fine and fine and few medium roots; slightly alkaline; clear wavy boundary.

B_{t2}—10 to 15 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, firm, sticky and plastic; few very fine, fine, and medium roots; many distinct clay films on faces of pedis; moderately alkaline; clear wavy boundary.

B_k—15 to 28 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; strongly effervescent, calcium carbonate as common distinct threads; strongly alkaline; abrupt wavy boundary.

Cr—28 inches; slightly effervescent weakly consolidated claystone.

The hue is 10YR or 7.5YR throughout the profile. The depth to bedrock ranges from 20 to 40 inches. The A horizon has a neutral or slightly alkaline reaction. The B_t horizon is 35 to 50 percent clay. It has a texture of clay

loam or clay. Reaction in the Bt horizon is slightly alkaline or moderately alkaline. The Bk horizon has a texture of loam, sandy clay loam, or clay loam. It has a moderately alkaline or strongly alkaline reaction.

Lakehelen Series

The Lakehelen series consists of moderately deep, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 5 to 50 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Lakehelen fine sandy loam, in an area of Lakehelen-Redfeather-Amesmont complex, 5 to 20 percent slopes, 1,300 feet east, 500 feet north of the southwest corner of sec. 7, T. 16 N., R. 71 W.

Oi—2 inches to 1; undecomposed needles, twigs, and bark; abrupt smooth boundary.

Oe—1 inch to 0; decomposed needles, twigs, and bark; abrupt smooth boundary.

E—0 to 14 inches; light yellowish brown (10YR 6/4) fine sandy loam, brown (7.5YR 4/4) moist; moderate fine platy structure parting to weak very fine platy; soft, very friable, nonsticky and nonplastic; common medium and coarse roots; 5 percent fine gravel; neutral; clear smooth boundary.

E/B—14 to 17 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 4/4) moist; weak and moderate very fine platy structure; soft, very friable, nonsticky and nonplastic; few coarse roots; interfingering with brown (7.5YR 5/4) gravelly sandy loam, dark brown (7.5YR 3/4) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few coarse roots; 15 percent gravel; neutral; gradual irregular boundary.

Bt—17 to 26 inches; strong brown (7.5YR 5/6) very gravelly sandy clay loam, yellowish red (5YR 4/6) moist; strong coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse roots; many distinct and few prominent clay films on faces of peds; 40 percent gravel; neutral; abrupt wavy boundary.

C—26 to 38 inches; reddish brown (5YR 5/4) extremely gravelly sandy loam, reddish brown (5YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; 65 percent gravel; neutral; abrupt wavy boundary.

R—38 inches; hard granite.

The surface is covered with a layer of forest litter 1 to 3 inches thick. The depth to bedrock ranges from 20 to 40 inches. The E horizon is 0 to 10 percent gravel. The Bt and C horizons have neutral or slightly alkaline reactions.

The Bt horizon is 20 to 30 percent clay, 35 to 55 percent fine or coarser sand, and 35 to 45 percent rock fragments. The C horizon is absent in some pedons.

Leavitt Series

The Leavitt series consists of very deep, well drained soils on fan terraces and hills. They formed in alluvium. Slope ranges from 1 to 45 percent. Elevation is 7,600 to 8,900 feet, average annual precipitation is 10 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Leavitt sandy loam, in an area of Thiel-Lymanson-Leavitt complex, 5 to 20 percent slopes, 2,550 feet west, 2,175 feet north of the southeast corner of sec. 12, T. 12 N., R. 77 W.

A—0 to 5 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many fine roots; the surface is 20 percent covered with gravel; neutral; clear smooth boundary.

AB—5 to 14 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium and coarse prismatic structure parting to weak coarse angular blocky; soft, very friable, slightly sticky and slightly plastic; many fine roots to 6 inches, common fine roots below; neutral; clear smooth boundary.

Bt—14 to 22 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; moderate coarse prismatic structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; many distinct clay films on faces of peds; 5 percent gravel; slightly alkaline; gradual smooth boundary.

Btk—22 to 36 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; slightly effervescent, few fine threads of calcium carbonate; 5 percent gravel; moderately alkaline; diffuse smooth boundary.

Bk—36 to 60 inches; very pale brown (10YR 7/4) sandy clay loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses; 5 percent gravel; moderately alkaline.

The mollic epipedon is 10 to 14 inches thick. The hue is 7.5YR or 10YR throughout the profile. The Bt horizon has a texture of sandy clay loam or clay loam. It has neutral or slightly alkaline reaction. The Bk horizon has a

texture of loam, sandy clay loam, or clay loam; it is 0 to 5 percent gravel.

The Leavitt soil found in map units 180 and 181 is outside the characteristics of the Leavitt series. In map unit 180, the Bt horizon is gravelly loam and the Bk horizon is very gravelly coarse sandy loam. In map unit 181, the Bt horizon is gravelly clay loam, the Btk horizon is very gravelly clay loam, and the 2Bk horizon is clay.

Lininger Series

The Lininger series consists of moderately deep, well drained soils on foothills and mountain slopes. They formed in residuum and alluvium derived from granite. Slope ranges from 1 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Lininger loam, in an area of Boyle-Lininger association, 1 to 15 percent slopes, 600 feet north, 700 feet east of the southwest corner of sec. 25, T. 13 N., R. 72 W.

A—0 to 4 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and common medium roots; the surface is 30 percent covered with gravel; neutral; abrupt smooth boundary.

AB—4 to 7 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; slightly alkaline; clear smooth boundary.

Bt1—7 to 14 inches; brown (7.5YR 4/4) gravelly sandy clay loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky structure parting to moderate medium granular; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; few faint clay films on faces of peds; 25 percent gravel; slightly alkaline; clear smooth boundary.

Bt2—14 to 22 inches; strong brown (7.5YR 4/6) very gravelly sandy clay loam, yellowish red (5YR 4/6) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; many thin and few distinct clay films on faces of peds; 40 percent gravel; slightly alkaline; gradual smooth boundary.

BC—22 to 24 inches; brown (7.5YR 4/4) very gravelly sandy clay loam, dark reddish brown (5YR 3/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; 40 percent gravel; slightly alkaline; clear wavy boundary.

Cr—24 inches; weakly consolidated granite.

The surface is 0 to 30 percent covered with gravel. The depth to bedrock ranges from 20 to 40 inches. The mollic epipedon is 7 to 14 inches thick. Reaction is neutral or slightly alkaline throughout the profile. The A horizon has hue of 10YR or 7.5YR; it is 0 to 15 percent gravel. The content of gravel in the individual subhorizons of the Bt horizon is 10 to 45 percent; but when the amount of gravel in all the Bt horizons is averaged, it is 20 to 35 percent. The Bt horizon is 22 to 30 percent clay and 35 to 55 percent fine or coarser sand.

Luhon Series

The Luhon series consists of very deep, well drained soils on foot slopes, toe slopes, and terraces. They formed in alluvium. Slope ranges from 1 to 5 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Luhon soil, in an area of Luhon loam, 1 to 5 percent slopes, 100 feet east, 250 feet south of the northwest corner of sec. 36, T. 18 N., R. 74 W.

A—0 to 2 inches; pale brown (10YR 6/3) loam, dark yellowish brown (10YR 4/4) moist; weak medium platy structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

AB—2 to 8 inches; light yellowish brown (10YR 6/4) loam, light olive brown (2.5Y 5/4) moist; moderate coarse subangular blocky structure; slightly hard, friable, sticky and plastic; few fine and medium roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bk2—8 to 34 inches; pale yellow (2.5Y 7/4) silt loam, olive yellow (2.5Y 6/6) moist; massive; slightly hard, friable, sticky and plastic; violently effervescent, calcium carbonate is disseminated and has a 28 percent carbonate equivalent; strongly alkaline; clear smooth boundary.

Bk3—34 to 60 inches; light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/6) moist; massive; slightly hard, friable, very sticky and plastic; violently effervescent, calcium carbonate is disseminated and has an 18 percent carbonate equivalent; strongly alkaline.

The particle-size control section is 20 to 30 percent clay and 15 to 35 percent fine or coarser sand. The hue is 10YR or 2.5Y throughout the profile. The A horizon has a slightly alkaline or moderately alkaline reaction. The Bk

horizon has a texture of silt loam or clay loam. Calcium carbonate equivalent in the Bk horizon is 15 to 30 percent.

Lupinto Series

The Lupinto series consists of very deep, well drained soils on fan terraces. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 7,000 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Lupinto gravelly fine sandy loam, in an area of Alcova, shallow substratum-Lupinto-Dahlquist complex, 0 to 8 percent slopes, 1,650 feet north, 100 feet west of the southeast corner of sec. 24, T. 16 N., R. 77 W.

A—0 to 2 inches; brown (10YR 5/3) gravelly fine sandy loam, dark brown (10YR 4/2) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; few fine roots; common very fine continuous irregular pores; 30 percent gravel; the surface is 10 percent covered with gravel; slightly alkaline; abrupt wavy boundary.

Bt—2 to 7 inches; dark yellowish brown (10YR 4/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and few fine continuous irregular pores; common faint clay films on faces of peds; 10 percent gravel; slightly alkaline; clear smooth boundary.

Bk1—7 to 15 inches; very pale brown (10YR 7/3) very gravelly loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; common very fine and few fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated and also occurs as many thin (less than 1 mm) pendants on rock fragments; 40 percent gravel; strongly alkaline; clear wavy boundary.

Bk2—15 to 24 inches; very pale brown (10YR 7/3) very gravelly loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine continuous irregular pores; violently effervescent, calcium carbonate is disseminated and also occurs as many thin (less than 1 mm) pendants on rock fragments; 50 percent gravel; strongly alkaline; diffuse wavy boundary.

Bk3—24 to 36 inches; very pale brown (10YR 7/3) very gravelly sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; common very fine and few fine continuous irregular pores; violently effervescent, calcium carbonate is disseminated and also occurs

as many thin (less than 1 mm) pendants on rock fragments; 35 percent gravel and 10 percent cobbles; strongly alkaline; diffuse wavy boundary.

Bk4—36 to 48 inches; very pale brown (10YR 7/4) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; common very fine and few fine continuous irregular pores; violently effervescent, calcium carbonate is disseminated and also occurs as many thin (less than 1 mm) pendants on rock fragments; 35 percent gravel and 10 percent cobbles; strongly alkaline; clear wavy boundary.

Bk5—48 to 60 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam stratified with 15 percent thin discontinuous lenses of sandy loam and gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine continuous irregular pores; violently effervescent, calcium carbonate is disseminated and also occurs as many thin (less than 1 mm) pendants on rock fragments; 35 percent gravel; strongly alkaline.

The surface is 10 to 40 percent covered with gravel and cobbles. The particle-size control section averages 18 to 20 percent clay and 40 to 60 percent rock fragments. The calcium carbonate equivalent in the calcic horizon is 15 to 35 percent.

The A horizon has a neutral or slightly alkaline reaction. The Bt horizon has a texture of sandy clay loam or gravelly sandy clay loam. The Bk1 and Bk2 horizons have textures of very gravelly loam or very gravelly sandy clay loam. The Bk3 horizon has a texture of very gravelly sandy loam or extremely gravelly sandy loam. Reaction is moderately alkaline or strongly alkaline in the Bk horizons.

Luvar Series

The Luvar series consists of very deep, well drained soils on hillslopes. They formed in gypsiferous alluvium from various sources. Slope ranges from 1 to 8 percent. Elevation is 6,500 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Luvar loam, in an area of Luvar-Stylite-Diamonkit complex, 1 to 8 percent slopes, 1,475 feet west, 2,460 feet south of the northeast corner of sec. 12, T. 15 N., R. 76 W.

A—0 to 2 inches; dark brown (10YR 3/3) loam, brown (10YR 4/3) moist; weak very fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many fine and few medium roots; many very fine discontinuous pores; the surface is 10

percent covered with gravel; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bw—2 to 6 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many fine and few medium roots; many very fine discontinuous pores; slightly effervescent, calcium carbonate is disseminated; slightly alkaline; clear smooth boundary.

Bk1—6 to 12 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate medium columnar structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and slightly plastic; few fine roots, common very fine discontinuous roots; violently effervescent, calcium carbonate is disseminated and also occurs as many fine soft masses; 12 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

Bk2—12 to 32 inches; very pale brown (10YR 8/3) clay loam, light yellowish brown (10YR 6/4) moist; weak medium columnar structure parting to weak medium subangular blocky; hard; friable, sticky and slightly plastic; few fine roots; common very fine discontinuous pores; violently effervescent, calcium carbonate is disseminated and also occurs as many medium and a few large soft masses, 17 percent calcium carbonate equivalent; strongly alkaline; clear smooth boundary.

By1—32 to 38 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, sticky and slightly plastic; few fine roots; common very fine discontinuous pores; strongly effervescent, calcium carbonate as few fine soft masses; gypsum as many medium and common large soft masses and few medium concretions; slightly alkaline; gradual wavy boundary.

By2—38 to 45 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, sticky and slightly plastic; few fine roots; common very fine discontinuous pores; calcium carbonate as few fine soft masses; gypsum as common medium soft masses; 10 percent gravel; moderately alkaline; gradual wavy boundary.

By3—45 to 60 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, sticky and slightly plastic; few fine roots; few very fine discontinuous pores; slightly effervescent, carbonates disseminated; gypsum as common medium soft masses; moderately alkaline.

The hue is 10YR or 2.5Y throughout the profile. The A and Bw horizons have slightly alkaline or moderately

alkaline reactions. The Bw, Bk, and By horizons have textures of loam or clay loam. Electrical conductivity in the Bk horizon is 2 to 8 millimhos per centimeter. Calcium carbonate equivalent in the Bk horizon is 10 to 20 percent. The By horizon has slightly alkaline to strongly alkaline reaction. Electrical conductivity in this horizon is 4 to 16 millimhos per centimeter. The By horizon is 15 to 25 percent gypsum.

Lymanson Series

The Lymanson series consists of moderately deep, well drained soils on fan terraces and hills. They formed in alluvium and residuum derived dominantly from sedimentary rock, but some areas are mantled with a thin layer of alluvium. Slope ranges from 5 to 20 percent. Elevation is 7,800 to 9,000 feet, average annual precipitation is 10 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Lymanson loam, in an area of Lymanson loam-Lymanson cobbly loam, complex, 6 to 20 percent slopes, 500 feet north, 400 feet east of the southwest corner of sec. 32, T. 16 N., R. 77 W.

A—0 to 7 inches; brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, friable, slightly sticky and slightly plastic; many very fine roots; common very fine pores; 6 percent gravel, 4 percent cobbles; the surface is 25 percent covered with 15 percent igneous gravel and 10 percent quartzite cobbles; slightly alkaline; abrupt wavy boundary.

Bt—7 to 16 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine roots and pores; common faint clay films on faces of peds; slightly alkaline; clear wavy boundary.

Btk—16 to 31 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; few fine distinct olive yellow (2.5Y 6/6) lithochromic mottles; moderate medium prismatic and angular blocky structure; very hard, firm, sticky and plastic; common very fine roots; few very fine pores; common faint clay films on faces of peds; strongly effervescent, few fine soft masses of calcium carbonate; moderately alkaline; clear wavy boundary.

Bk—31 to 35 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; common fine distinct light gray (2.5Y 7/1) and olive yellow (2.5Y 6/6) lithochromic mottles; massive; hard, firm, sticky and plastic; few very fine roots; strongly effervescent, common fine soft masses of calcium carbonate; 25

percent soft fine shale fragments; strongly alkaline; diffuse wavy boundary.

Cr—35 to 60 inches; light brownish gray (2.5Y 6/2) weakly consolidated shale.

The surface is 0 to 50 percent covered with gravel and cobbles. In some areas, a few stones are also on the surface. The depth to horizons containing secondary calcium carbonate ranges from 15 to 26 inches. The depth to bedrock ranges from 20 to 40 inches. The mollic epipedon is 7 to 11 inches thick.

The A horizon has a neutral to moderately alkaline reaction. This horizon is 0 to 20 percent gravel and 0 to 20 percent cobbles. The Bt horizon has hue of 2.5Y or 10YR. It has a slightly alkaline or moderately alkaline reaction. The Bt horizon commonly has a texture of clay loam, but it is gravelly sandy clay loam in some pedons. It is 20 to 35 percent clay, 25 to 35 percent fine or coarser sand, and 0 to 25 percent coarse fragments.

This soil in map unit 233 is outside the characteristics of the Lymanson series because the Bk horizon is very gravelly loam and 35 to 50 percent gravel.

Manada Series

The Manada series consists of very deep, somewhat poorly drained soils on fan terraces. They formed in alluvium. Slope ranges from 0 to 6 percent. Elevation is 7,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Manada soil, in an area of Manada sandy loam, 0 to 6 percent slopes, 1,300 feet east, 1,000 feet south of the northwest corner of sec. 23, T. 16 N., R. 76 W.

A—0 to 2 inches; dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; few fine distinct yellowish red (5YR 4/6) mottles; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine and very fine roots; few fine pores; strongly effervescent; 5 percent fine gravel; moderately alkaline; abrupt smooth boundary.

Bw—2 to 9 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; common fine distinct yellowish red (5YR 4/6) mottles; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots and pores; slightly effervescent, carbonate equivalent is less than 2 percent; 10 percent fine gravel; moderately alkaline; clear smooth boundary.

Bk1—9 to 15 inches; very pale brown (10YR 7/3) gravelly sandy loam, pale brown (10YR 6/3) moist; weak

medium subangular blocky structure; few fine distinct strong brown (7.5YR 5/6) mottles; slightly hard, friable, nonsticky and nonplastic; common fine and very fine roots and pores; violently effervescent, calcium carbonate is disseminated and the carbonate equivalent is 9 percent; 15 percent fine gravel; moderately alkaline; clear wavy boundary.

Bk2—15 to 27 inches; light gray (10YR 7/2) gravelly sandy loam, pale brown (10YR 6/3) moist; weak coarse prismatic structure; hard, friable, slightly sticky and slightly plastic; common fine and very fine roots and pores; violently effervescent, common fine concretions of calcium carbonate, calcium carbonate equivalent is 8 percent; 20 percent fine gravel; strongly alkaline; gradual wavy boundary.

Bk3—27 to 35 inches; white (10YR 8/2) gravelly loam, very pale brown (10YR 7/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; few fine and very fine pores; violently effervescent, common fine concretions of calcium carbonate, calcium carbonate equivalent is 26 percent; 20 percent medium and fine gravel; strongly alkaline; gradual wavy boundary.

Bk4—35 to 60 inches; very pale brown (10YR 7/3) gravelly sandy loam, pale brown (10YR 6/3) moist; massive; hard, friable, nonsticky and nonplastic; few fine and very fine pores; violently effervescent, few fine concretions of calcium carbonate, calcium carbonate equivalent is 10 percent; 15 percent fine gravel; strongly alkaline.

The mollic epipedon is 8 to 10 inches thick. The particle-size control section is 10 to 15 percent clay, 45 to 65 percent fine or coarser sand, and 10 to 20 percent rock fragments. The depth to a seasonal high water table ranges from 2 to 3 feet from April through July. The Bw horizon commonly has a texture of loam, but in some pedons it is sandy loam. The Bk horizon has hue of 10YR or 2.5Y. It commonly has a texture of gravelly sandy loam or gravelly loam, but in some pedons it is sandy loam or fine sandy loam. The Bk horizon is 1 to 20 percent gravel. Reaction in the Bk horizon is moderately alkaline or strongly alkaline. The calcium carbonate equivalent in some parts of the Bk horizon is 15 to 30 percent.

McFadden Series

The McFadden series consists of very deep, well drained soils on fan terraces. They formed in alluvium. Slope ranges from 1 to 6 percent. Elevation is 7,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the McFadden soil, in an area of McFadden gravelly fine sandy loam, 1 to 6 percent slopes,

2,480 feet north, 20 feet east of the southwest corner of sec. 33, T. 16 N., R. 76 W.

A—0 to 5 inches; brown (10YR 5/3) gravelly fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine roots; strongly effervescent, calcium carbonate equivalent is less than 2 percent; 15 percent gravel; moderately alkaline; abrupt smooth boundary.

Bk1—5 to 9 inches; pale brown (10YR 6/3) gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; violently effervescent, calcium carbonate equivalent is 12 percent; 25 percent gravel; moderately alkaline; clear smooth boundary.

Bk2—9 to 18 inches; very pale brown (10YR 7/3) gravelly fine sandy loam, pale brown (10YR 6/3) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; violently effervescent, calcium carbonate equivalent is 28 percent; 30 percent gravel; moderately alkaline; clear smooth boundary.

2B3k—18 to 60 inches; light gray (10YR 7/2) loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; violently effervescent, calcium carbonate equivalent is 25 percent; 10 percent gravel; strongly alkaline.

The surface is 15 to 35 percent covered with gravel and cobbles. The particle-size control section is 10 to 17 percent clay. The Bk horizon commonly has a texture of gravelly loam or gravelly fine sandy loam, but in some pedons the texture is loam. This horizon is 10 to 35 percent gravel. Calcium carbonate equivalent in the Bk horizon ranges from 10 to 30 percent, but at least some parts have more than 15 percent. The 2Bk3 horizon is absent in some pedons.

Miracle Series

The Miracle series consists of moderately deep, well drained soils on ridges, mountain slopes, canyon sides, and cuestas. They formed in residuum, colluvium, and alluvium derived from reddish sandstone, limestone, and shale. Slope ranges from 5 to 40 percent. Elevation is 7,600 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Miracle fine sandy loam, in an area of Miracle-Cheadle association, 5 to 20 percent slopes, 1,300 feet south, 1,300 feet west of the northeast corner of sec. 27, T. 15 N., R. 72 W.

A—0 to 4 inches; brown (10YR 4/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine, and common medium roots; slightly alkaline; abrupt smooth boundary.

Bt1—4 to 12 inches; brown (7.5YR 4/4) sandy clay loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky structure parting to moderate fine granular; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; many faint clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bt2—12 to 21 inches; red (2.5YR 4/6) sandy clay loam, dark red (2.5YR 3/6) moist; moderate coarse prismatic structure parting to moderate coarse subangular blocky; hard, friable, sticky and slightly plastic; few fine and medium roots; many distinct and few prominent clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bt3—21 to 28 inches; reddish brown (5YR 4/4) sandy clay loam, reddish brown (5YR 4/4) moist; moderate coarse subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; few faint clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bk—28 to 33 inches; reddish brown (5YR 5/4) sandy loam, reddish brown (5YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; slightly effervescent, calcium carbonate as few thin pendants on gravel; 5 percent gravel; slightly alkaline; abrupt wavy boundary.

R—33 inches; hard red sandstone.

The surface is 0 to 10 percent covered with cobbles and stones. The depth to bedrock ranges from 20 to 40 inches. Reaction is neutral or slightly alkaline throughout the profile. The mollic epipedon is 7 to 12 inches thick. The Bt horizon is 20 to 25 percent clay and 0 to 10 percent rock fragments. The Bk horizon is absent in some pedons.

Morset Series

The Morset series consists of very deep, well drained soils on toe slopes of hills. They formed in alluvium derived from granitic and sedimentary sources. Slope ranges from 3 to 10 percent. The elevation is 7,400 to 8,200 feet, annual precipitation is 10 to 17 inches, and the annual air temperature is 38 to 40 degrees F. The frost-free period is less than 60 days.

Typical pedon of Morset gravelly sandy loam, in an area of Rainbolt-Morset association, 3 to 25 percent slopes, 1,900 feet east, 2,325 feet south of the northwest corner of sec. 24, T. 14 N., R. 77 W.

A—0 to 2 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many fine roots; few very fine discontinuous pores; 25 percent gravel; slightly alkaline; abrupt smooth boundary.

Bt1—2 to 6 inches; dark grayish brown (10YR 4/2) gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many fine roots; common very fine discontinuous pores; few faint clay films on faces of peds and as bridges between sand grains; 30 percent gravel; slightly alkaline; abrupt smooth boundary.

Bt2—6 to 13 inches; brown (10YR 4/3) gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular block structure; slightly hard, firm, sticky and slightly plastic; common fine roots; many very fine discontinuous pores; common distinct clay films on faces of peds; 30 percent gravel; moderately alkaline; gradual smooth boundary.

Btk1—13 to 24 inches; very pale brown (10YR 7/3) gravelly sandy clay loam, light yellowish brown (10YR 6/4) moist; moderate medium subangular blocky structure; slightly hard, firm, sticky and slightly plastic; few fine roots; common very fine discontinuous pores; few faint clay films coated by calcium carbonate on faces of peds; violently effervescent, calcium carbonate is disseminated and occurs as coatings on gravel, 24 percent calcium carbonate equivalent by calcimeter method; 30 percent gravel; moderately alkaline; gradual smooth boundary.

Btk2—24 to 28 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, firm, sticky and slightly plastic; few fine roots; common very fine discontinuous pores; few faint clay films on faces of peds and as bridging between sand grains; violently effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses and coatings on gravel, 7 percent calcium carbonate equivalent by calcimeter; 30 percent gravel; moderately alkaline; gradual smooth boundary.

Bk1—28 to 39 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, firm, sticky and slightly plastic; few very fine roots; few very fine discontinuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses and coatings on gravel; 25 percent gravel; moderately alkaline; gradual smooth boundary.

Bk2—39 to 60 inches; light yellowish brown (10YR 6/4) gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, firm, sticky and slightly plastic; few very fine discontinuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as coatings on gravel; 17 percent gravel; moderately alkaline.

The mollic epipedon is 10 to 13 inches thick. The particle-size control section is 20 to 35 percent clay and 35 to 55 percent fine or coarser sand. The A horizon is 15 to 30 percent gravel. The Bt horizon is 15 to 35 percent gravel. The Bt horizon has a slightly alkaline or moderately alkaline reaction. The Bk horizon commonly has a texture of gravelly sandy clay loam, but in some pedons it is gravelly sandy loam. This horizon is 15 to 35 percent gravel. The Bk horizon has a is moderately alkaline or strongly alkaline reaction. Calcium carbonate equivalent is 15 to 25 percent in at least part of the Btk or Bk horizons.

Moyerson Series

The Moyerson series consists of shallow, well drained soils on escarpments. They formed in residuum and alluvium derived from shale. Slope ranges from 3 to 20 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Moyerson silty clay loam, in an area of Moyerson-Kemmerer complex, 3 to 20 percent slopes, 2,350 feet south, 300 feet west of the northeast corner of sec. 27, T. 25 N., R. 76 W.

A—0 to 4 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; soft, friable, sticky and plastic; few fine roots; the surface is 15 percent covered with igneous gravel, cobbles, and slate fragments; strongly effervescent, calcium carbonate is disseminated; slightly alkaline; abrupt smooth boundary.

AC—4 to 10 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; massive; slightly hard, firm, sticky and plastic; few fine roots; strongly effervescent, calcium carbonate is disseminated; 80 percent soft shale fragments that break down when wetted; moderately alkaline; clear smooth boundary.

C—10 to 17 inches; light gray (5Y 6/1) silty clay, gray (5Y 5/1) moist; massive; hard, firm, sticky and plastic; few fine roots; strongly effervescent, calcium carbonate is disseminated; few fine soft masses of gypsum; 95 percent soft shale fragments

that break down when wetted; moderately alkaline; gradual smooth boundary.

Cr—17 to 60 inches; weakly consolidated shale.

The surface is 0 to 15 percent covered with igneous gravel, cobbles, and channers. The depth to bedrock ranges from 10 to 20 inches. The particle-size control section is 35 to 45 percent clay and 10 to 30 percent fine or coarser sand. The A horizon has a slightly alkaline or moderately alkaline reaction. The C horizon has a texture of silty clay or clay loam. It has a moderately alkaline or strongly alkaline reaction.

Nathale Series

The Nathale series consists of moderately deep, well drained soils on mountain slopes and canyon sides. They formed in residuum and colluvium derived from limestone and sandstone. Slope ranges from 10 to 60 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Nathale gravelly fine sandy loam, in an area of Nathale-Passcreek, cobbly subsoil-Rock outcrop complex, 10 to 60 percent slopes, 1,500 feet south, 1,900 feet west of the northeast corner of sec. 23, T. 15 N, R. 72 W.

A—0 to 4 inches; brown (10YR 4/3) gravelly fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine and common medium roots; slightly effervescent, calcium carbonate is disseminated; 30 percent gravel; the surface is 60 percent covered with gravel and cobbles; moderately alkaline; clear smooth boundary.

Bt—4 to 11 inches; brown (10YR 5/3) very cobbly very fine sandy loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; common distinct clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated; 25 percent angular cobbles and 15 percent gravel; moderately alkaline; clear smooth boundary.

Bk1—11 to 17 inches; pale brown (10YR 6/3) very cobbly very fine sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine and medium roots; strongly effervescent, calcium carbonate is disseminated and also occurs as pendants on rock fragments; 25

percent cobbles and 15 percent gravel; moderately alkaline; clear smooth boundary.

Bk2—17 to 24 inches; pale brown (10YR 6/3) very cobbly fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; violently effervescent, calcium carbonate is disseminated and also occurs as pendants on rock fragments; 40 percent cobbles and 20 percent gravel; moderately alkaline; abrupt irregular boundary.

R—24 inches; fractured hard limestone.

The surface is 60 to 90 percent covered with gravel, cobbles, or stones. The depth to bedrock ranges from 20 to 40 inches. The mollic epipedon is 9 to 11 inches thick.

The A and Bt horizons have slightly alkaline or moderately alkaline reactions. The Bt horizon commonly has a texture of very cobbly very fine sandy loam, but in some pedons it is very cobbly loam or very cobbly sandy clay loam. This horizon is 5 to 15 percent gravel and 20 to 45 percent cobbles.

The Bk horizon is 10 to 20 percent gravel, 25 to 50 percent cobbles, and 0 to 10 percent stones. It has a fine-earth texture of sandy loam or fine sandy loam. Calcium carbonate equivalent in this horizon is 10 to 20 percent.

Pahlow Series

The Pahlow series consists of very deep, well drained soils on terraces with a mounded microrelief. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 7,000 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Pahlow soil, in an area of Pahlow gravelly sandy loam, 0 to 3 percent slopes, 1,525 feet west, 1,625 feet south of the northeast corner of sec. 30, T. 14 N., R. 76 W.

A—0 to 3 inches; brown (10YR 4/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and few medium roots; many very fine discontinuous pores; 15 percent gravel; the surface is 25 percent covered with gravel; slightly alkaline; abrupt smooth boundary.

Bw1—3 to 7 inches; brown (10YR 5/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many fine and few medium roots; many very fine discontinuous pores; 35 percent gravel and 5 percent cobbles; slightly alkaline; clear smooth boundary.

Bw2—7 to 15 inches; dark yellowish brown (10YR 4/4) very gravelly sandy loam, brown (10YR 4/3) moist;

weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine roots; common very fine and fine continuous pores; noneffervescent matrix with calcium carbonate as few thin coatings on undersides of rock fragments; 40 percent gravel and 10 percent cobbles; slightly alkaline; clear smooth boundary.

2Bk1—15 to 25 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; very few fine roots; many very fine and fine continuous pores; slightly effervescent, calcium carbonate is disseminated and also occurs as common moderately thick pendants and coatings on undersides of rock fragments; 50 percent gravel and 5 percent cobbles; moderately alkaline; gradual smooth boundary.

2Bk2—25 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; very few fine roots; many very fine and fine continuous pores; violently effervescent, calcium carbonate is disseminated and also occurs as common moderately thick pendants and coatings on undersides of rock fragments; 50 percent gravel and 10 percent cobbles; moderately alkaline.

The surface is 0 to 25 percent covered with gravel. In some areas, a thick mat of roots is on the surface. The rock fragments throughout the profile are dominantly granite, schist, or quartzite. The A and Bw horizons have slightly alkaline or moderately alkaline reactions. The calcium carbonate equivalent in the 2Bk horizon is 10 to 25 percent. Reaction in this horizon is moderately alkaline or strongly alkaline.

Passcreek Series

The Passcreek series consists of moderately deep, well drained soils on mountain slopes, canyon sides, and cuesta dip slopes. They formed in residuum and colluvium derived from limestone and sandstone. Slope ranges from 5 to 60 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Passcreek fine sandy loam cobbly subsoil, in an area of Cheadle-Passcreek, cobbly subsoil-Rock outcrop complex, 5 to 25 percent slopes, 600 feet north, 500 feet west of the southeast corner of sec. 17, T. 15 N., R. 72 W.

A—0 to 4 inches; brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots; slightly

effervescent, calcium carbonate is disseminated; 5 percent gravel and 5 percent cobbles; the surface is 50 percent covered with cobbles and stones; moderately alkaline; clear smooth boundary.

Bt—4 to 11 inches; brown (10YR 4/3) sandy clay loam, dark brown (7.5YR 3/2) moist; moderate coarse prismatic structure parting to moderate coarse subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; many faint clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated; 5 percent gravel and 5 percent cobbles; moderately alkaline; clear irregular boundary.

Bk1—11 to 14 inches; brown (7.5YR 4/4) very cobbly fine sandy loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as pendants on rock fragments; 40 percent cobbles and 20 percent gravel; moderately alkaline; gradual irregular boundary.

Bk2—14 to 22 inches; light yellowish brown (10YR 6/4) very cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; strongly effervescent, calcium carbonate is disseminated and also occurs as pendants on rock fragments; 40 percent cobbles and 20 percent gravel; moderately alkaline; abrupt irregular boundary.

R—22 inches; hard limestone.

The surface is 10 to 90 percent covered with cobbles and stones. The depth to bedrock ranges from 20 to 40 inches. The mollic epipedon is 7 to 11 inches thick. Reaction is slightly alkaline or moderately alkaline throughout the profile. The Bt and Bk horizons have hue of 10YR or 7.5YR. The Bt horizon has a texture of cobbly fine sandy loam, cobbly sandy clay loam, or sandy clay loam. It is 0 to 10 percent gravel and 0 to 10 percent cobbles. The Bk horizon is 35 to 50 percent rock fragments. The rock fragments in this horizon consist of 10 to 25 percent gravel and 35 to 50 percent cobbles.

Pilotpeak Series

The Pilotpeak series consists of very shallow or shallow and well drained soils on cuesta dip slopes and structural benches. They formed in residuum and colluvium derived from limestone. Slope ranges from 3 to 25 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Pilotpeak cobbly very fine sandy loam, in an area of Pilotpeak-Canwall complex, 3 to 20 percent

slopes, 2,000 feet west, 1,900 feet north of the southeast corner of sec. 12, T. 16 N., R. 73 W.

A—0 to 4 inches; yellowish brown (10YR 5/4) cobbly very fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots; slightly effervescent, calcium carbonate is disseminated; 10 percent coarse gravel and 20 percent 3- to 6-inch cobbles; the surface is 60 percent covered with gravel and cobbles; moderately alkaline; gradual wavy boundary.

Bk1—4 to 14 inches; brown (10YR 5/3) very cobbly very fine sandy loam, dark yellowish brown (10YR 3/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; strongly effervescent, calcium carbonate as common fine masses and thin pendants on undersides of rock fragments; 15 percent coarse gravel and 25 percent 3- to 6-inch cobbles; moderately alkaline; abrupt smooth boundary.

Bk2—14 to 18 inches; pale brown (10YR 6/3) extremely cobbly very fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few medium roots; violently effervescent, calcium carbonate as thick pendants on underside of rock fragments and as many fine soft masses in the matrix; 15 percent coarse gravel and 45 percent 3- to 6-inch cobbles; strongly alkaline; abrupt smooth boundary.

R—18 inches; limestone bedrock.

The surface is 20 to 60 percent covered with coarse gravel and 3- to 6-inch angular cobbles and channers. The depth to bedrock ranges from 7 to 20 inches. The hue is 2.5YR to 10YR in the A horizon and 7.5YR or 10YR in the Bk horizon. The Bk horizon has a fine-earth texture of fine sandy loam or very fine sandy loam; it is 40 to 70 percent rock fragments. Calcium carbonate equivalent in the Bk horizon is 15 to 35 percent. The Bk horizon has a moderately alkaline or strongly alkaline reaction.

Pinelli Series

The Pinelli series consists of very deep, well drained soils on alluvial flats and pediments and in small playas. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Pinelli soil, in an area of Pinelli clay loam, 0 to 6 percent slopes, 2,000 feet north, 650

feet west of the southeast corner of sec. 34, T. 25 N., R. 76 W.

A—0 to 3 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; soft, friable, sticky and plastic; strongly effervescent, calcium carbonate is disseminated; slightly alkaline; clear smooth boundary.

AB—3 to 6 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bt1—6 to 13 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; moderate medium angular blocky structure; very hard, firm, sticky and plastic; common distinct clay films on faces of ped; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bt2—13 to 18 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; strong coarse subangular blocky structure; very hard, very firm, sticky and plastic; many distinct clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Btk—18 to 28 inches; light brownish gray (2.5 Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; moderate medium prismatic structure; hard, very firm, sticky and plastic; few faint clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine masses; moderately alkaline; gradual smooth boundary.

Bk—28 to 60 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, firm, sticky and plastic; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses; moderately alkaline.

The A horizon has hue of 10YR or 2.5Y; it is 0 to 5 percent gravel. The A and Bt horizons have slightly alkaline or moderately alkaline reactions. The Bt horizon has hue of 7.5YR to 2.5Y. It commonly has a texture of clay or silty clay, but in some pedons it is clay loam. The Bt horizon is 35 to 50 percent clay.

Poin Series

The Poin series consists of shallow, well drained soils on mountain slopes. They formed in colluvium and residuum derived from gneiss and schist. Slope ranges from 15 to 50 percent. Elevation is 7,600 to 8,800 feet,

average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Poin very cobbly sandy loam, in an area of Poin-Bowen-Rock outcrop complex, 10 to 50 percent slopes, 1,620 feet east, 1,390 feet north of the southwest corner of sec. 24, T. 13 N., R. 77 W.

A—0 to 6 inches; dark brown (10YR 4/3) very cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many fine roots; 35 percent cobbles and 10 percent gravel; neutral; clear smooth boundary.

C—6 to 15 inches; dark grayish brown (10YR 4/2) very channery sandy loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, nonsticky and nonplastic; common fine roots; 60 percent channers; neutral; clear wavy boundary.

R—15 inches; hard schist bedrock.

The depth to bedrock ranges from 10 to 20 inches. The particle-size control section is 10 to 15 percent clay and 40 to 60 percent rock fragments.

Poposhia Series

The Poposhia series consists of very deep, well drained soils on hills, ridges, and fan aprons. They formed in alluvium. Slope ranges from 2 to 30 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Poposhia sandy loam, in an area of Poposhia-Chaperton association, 6 to 12 percent slopes, 1,600 feet east, 1,450 feet north of the southwest corner of sec. 27, T. 21 N., R. 75 W.

A1—0 to 1 inch; yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; vesicular crust; soft, very friable, slightly sticky and slightly plastic; many fine and few medium roots; common very fine and fine continuous irregular pores; the surface is 10 percent covered with gravel and cobbles; moderately alkaline; abrupt smooth boundary.

A2—1 to 5 inches; dark yellowish brown (10YR 4/4) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to weak fine and medium granular; soft, friable, sticky and plastic; many fine and few medium roots; common very fine and fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bk1—5 to 15 inches; brown (10YR 5/3) loam, olive brown (2.5Y 4/4) moist; moderate medium and coarse subangular blocky structure parting to weak fine and

medium granular; slightly hard, friable, sticky and plastic; many fine and few medium roots; common very fine and fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated and also occurs as many (25 percent) light gray (10YR 7/2) fine soft masses, 9 percent calcium carbonate equivalent by the calcimeter method; strongly alkaline; gradual smooth boundary.

Bk2—15 to 29 inches; grayish brown (2.5Y 5/2) loam, olive (5Y 4/4) moist; weak medium and coarse prismatic structure; slightly hard, friable, sticky and plastic; many fine and few medium roots to 20 inches, few fine and medium roots below; common very fine and fine continuous irregular pores; strongly effervescent, calcium carbonate is disseminated and has a 9 percent calcium carbonate equivalent by the calcimeter method; strongly alkaline; gradual smooth boundary.

C—29 to 60 inches; grayish brown (2.5Y 5/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, sticky and plastic; few fine and medium roots; common very fine and fine continuous irregular pores; slightly effervescent, calcium carbonate is disseminated; strongly alkaline.

The particle-size control section is 18 to 30 percent clay and 15 to 35 percent fine or coarser sand. The A horizon has a slightly alkaline or moderately alkaline reaction. The Bk and C horizons have hue of 10YR or 2.5Y. Textures in the Bk and C horizons are loam, sandy clay loam, or clay loam. The Bk and C horizons have moderately alkaline or strongly alkaline reactions.

Quander Series

The Quander series consists of very deep, well drained soils on outwash fan terraces. They formed in glacial drift. Slope ranges from 3 to 45 percent. Elevation is 7,800 to 8,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Quander gravelly loam, in an area of Hanson-Quander complex, 3 to 15 percent slopes, 1,600 feet south, 1,150 feet east of the northwest corner of sec. 21, T. 17 N., R. 77 W.

A—0 to 3 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; common fine and medium roots; common very fine continuous irregular pores; 25 percent gravel; the surface is 40 percent covered with gravel and 5 percent covered with cobbles and stones; neutral; clear smooth boundary.

- AB—3 to 12 inches; brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure parting to weak fine granular; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; common very fine continuous irregular pores; 15 percent gravel; neutral; abrupt wavy boundary.
- Bt1—12 to 17 inches; light yellowish brown (10YR 6/4) very cobbly clay loam, yellowish brown (10YR 5/4) moist; moderate medium prismatic structure parting to moderate medium angular blocky; hard, firm, sticky and plastic; few fine roots; common very fine and fine continuous irregular pores; many distinct clay films on faces of peds; 10 percent gravel and 25 percent cobbles; neutral; clear wavy boundary.
- Bt2—17 to 26 inches; reddish yellow (7.5YR 6/6) very cobbly clay loam, strong brown (7.5YR 5/6) moist; weak medium angular blocky structure; hard, friable, sticky and plastic; few fine roots; few very fine continuous irregular pores; few faint clay films on faces of peds; 15 percent gravel and 40 percent cobbles; neutral; gradual wavy boundary.
- BC—26 to 35 inches; mixed reddish yellow (7.5YR 6/6) and light gray (10YR 7/2) very cobbly clay loam, mixed strong brown (7.5YR 5/6) and pale brown (10YR 6/3) moist; weak medium subangular blocky structure; very hard, firm, sticky and plastic; 10 percent gravel and 45 percent cobbles; slightly alkaline; gradual wavy boundary.
- C—35 to 60 inches; yellow (2.5Y 7/6) very cobbly sandy clay loam, olive yellow (2.5Y 6/6) moist; massive; hard, friable, sticky and plastic; 15 percent gravel and 30 percent cobbles; slightly alkaline.

The surface is 40 to 50 percent covered with gravel, cobbles, and stones. The mollic epipedon is 10 to 12 inches thick. The Bt horizon has hue of 10YR or 7.5YR. It has a texture of very cobbly clay loam or very gravelly clay loam. The Bt horizon is 35 to 55 percent rock fragments. The C horizon commonly has a texture of very cobbly sandy clay loam, but in some pedons it is very cobbly clay loam. It has a neutral or slightly alkaline reaction. The C horizon has hue of 2.5Y or 10YR.

Rainbolt Series

The Rainbolt series consists of moderately deep, well drained soils on back slopes and foot slopes of hills. They formed in alluvium from granitic and sedimentary sources. Slope ranges from 3 to 25 percent. Elevation is 7,400 to 8,200 feet, average annual precipitation is 10 to 17 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Rainbolt gravelly sandy loam in an area of Rainbolt-Morset association, 3 to 25 percent slopes, 2,325 feet east, 1,100 feet north of the southwest corner of sec. 32, T. 13 N., R. 76 W.

- A—0 to 2 inches; brown (7.5YR 5/3) gravelly sandy loam, dark brown (7.5YR 3/2) moist; moderate fine and medium granular structure; soft, very friable, slightly sticky and nonplastic; many fine roots; many very fine continuous pores; 20 percent gravel; the surface is 15 percent covered with gravel; slightly alkaline; abrupt smooth boundary.
- Bt1—2 to 9 inches; dark brown (7.5YR 4/3) gravelly sandy clay loam, dark brown (7.5YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; common very fine continuous pores; few faint clay films on faces of peds; 20 percent gravel; moderately alkaline; clear smooth boundary.
- Bt2—9 to 16 inches; reddish brown (2.5YR 4/4) gravelly sandy clay loam, reddish brown (2.5YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, sticky and slightly plastic; common fine roots; common very fine continuous pores; common distinct clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated; 25 percent gravel; moderately alkaline; clear smooth boundary.
- Bk—16 to 28 inches; reddish brown (2.5YR 4/4) sandy clay loam, dark reddish brown (2.5YR 3/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine and medium small masses; 10 percent gravel; strongly alkaline; clear smooth boundary.
- Cr—28 inches; weakly consolidated reddish sandstone.

The surface is 10 to 20 percent covered with granitic gravel. The depth to bedrock ranges from 20 to 40 inches. The mollic epipedon is 7 to 15 inches thick. The A horizon has a slightly alkaline or moderately alkaline reaction. The Bt and Bk horizons have moderately alkaline or strongly alkaline reactions. The Bt horizon has a texture of gravelly sandy clay loam or sandy clay loam. It is 20 to 28 percent clay, 35 to 55 percent fine or coarser sand, and 5 to 25 percent rock fragments.

Rawlins Series

The Rawlins series consists of very deep, well drained soils on fan terraces. They formed in alluvium. Slope ranges from 3 to 8 percent. Elevation is 6,800 to 7,800 feet, average annual precipitation is 15 to 19 inches, and

average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Rawlins sandy loam, in an area of Dahlquist-Rawlins-Browline complex, moist, 3 to 15 percent slopes, 2,400 feet south, 150 feet west of the northeast corner of sec. 15, T. 20 N., R. 77 W.

A—0 to 2 inches; brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few fine roots and pores; slightly alkaline; abrupt smooth boundary.

Bt—2 to 9 inches; yellowish brown (10YR 5/4) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine roots and pores; many faint clay films on faces of peds; slightly alkaline; gradual smooth boundary.

Bk1—9 to 18 inches; pale yellow (2.5Y 7/4) very fine sandy loam, light yellowish brown (2.5Y 6/4) moist; weak medium and fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots and pores; violently effervescent, calcium carbonate as many medium soft masses, calcium carbonate equivalent is 12 percent; strongly alkaline; gradual smooth boundary.

Bk2—18 to 24 inches; pale yellow (2.5Y 7/4) fine sandy loam, light yellowish brown (2.5Y 6/4) moist; massive; soft, very friable, nonsticky and nonplastic; few fine oxide stains; violently effervescent, calcium carbonate as many fine soft masses, calcium carbonate equivalent is 11 percent; strongly alkaline; diffuse smooth boundary.

Bk3—24 to 48 inches; pale yellow (2.5Y 7/4) fine sandy loam, light yellowish brown (2.5Y 6/4) moist; massive; soft, very friable, nonsticky and nonplastic; common medium oxide stains; strongly effervescent, calcium carbonate as common fine soft masses; moderately alkaline; diffuse smooth boundary.

Bk4—48 to 60 inches; yellow (10YR 7/6) fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; soft, very friable, nonsticky and nonplastic; slightly effervescent, calcium carbonate as few fine filaments; 10 percent coarse sandstone gravel; strongly alkaline.

The surface is 5 to 20 percent covered with medium and coarse gravel and a few cobbles. The particle-size control section averages 12 to 18 percent clay, 50 to 75 percent fine or coarser sand, and 0 to 5 percent rock fragments. The calcium carbonate equivalent in the calcic horizon is 10 to 15 percent. Reaction is neutral or mildly alkaline in the A horizon and moderately alkaline or strongly alkaline in the Bk horizon. The Bk horizon has hue of 10YR or 2.5Y. It is 0 to 10 percent gravel.

Redfeather Series

The Redfeather series consists of shallow, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 5 to 50 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Redfeather gravelly sandy loam, in an area of Lakehelen-Redfeather-Amesmont complex, 5 to 20 percent slopes, 900 feet east, 2,600 feet south of the northwest corner of sec. 29, T. 15 N., R. 71 W.

Oi—2 inches to 1; undecomposed needles, twigs, bark, and other forest litter.

Oe—1 inch to 0; decomposed organic matter.

E—0 to 7 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium platy structure parting to weak fine platy; soft, very friable, nonsticky and nonplastic; many medium and common coarse roots; 20 percent gravel; neutral; clear wavy boundary.

E/B—7 to 14 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; interfingered with yellowish brown (10YR 5/6) very gravelly sandy loam, dark yellowish brown (10YR 4/6) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common coarse roots; 30 percent gravel; neutral; abrupt irregular boundary.

Bt—14 to 19 inches; brown (7.5YR 4/4) very gravelly sandy clay loam, dark brown (7.5YR 3/4) moist; strong coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse roots; common prominent clay films on faces of peds; 60 percent gravel; neutral; abrupt wavy boundary.

R—19 inches; hard granite.

The depth to bedrock ranges from 10 to 20 inches. The Bt horizon is 20 to 30 percent clay and 40 to 60 percent rock fragments.

Redrob Series

The Redrob series consists of very deep, poorly drained soils on low stream terraces and flood plains. They formed in alluvium. Slope ranges from 0 to 3 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Redrob loam, in an area of Redrob, frequently flooded-Redrob loams, 0 to 3 percent slopes, 1,600 feet north, 2,600 feet west of the southeast corner of sec. 23, T. 15 N., R. 74 W.

- A1—0 to 2 inches; grayish brown (10YR 5/2) loam, dark grayish brown (2.5Y 4/2) moist; weak medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; slightly effervescent, calcium carbonate is disseminated; few thin seams of soluble salts; electrical conductivity is 3.8 millimhos per centimeter; moderately alkaline; abrupt smooth boundary.
- A2—2 to 8 inches; very dark grayish brown (10YR 3/2) loam, black (10YR 2/1) moist; strong coarse granular structure; interfingering with dark grayish brown (2.5Y 4/2) loam, dark brown (10YR 3/3) moist; massive; slightly hard, friable, sticky and plastic; common very fine, fine, and medium roots; strongly effervescent, calcium carbonate is disseminated; few thin seams of soluble salts; electrical conductivity is 2.3 millimhos per centimeter; 5 percent fine gravel; strongly alkaline; clear irregular boundary.
- A3—8 to 18 inches; dark grayish brown (2.5Y 4/2) loam, very dark brown (2.5Y 3/2) moist; common fine faint black (2.5Y 2/1) moist and few fine prominent strong brown (7.5YR 5/8) moist, mottles; weak coarse subangular blocky structure; hard, firm, sticky and slightly plastic; few fine and medium roots; strongly effervescent, calcium carbonate is disseminated; few thin seams of soluble salt; electrical conductivity is 2.0 millimhos per centimeter; 5 percent fine gravel; strongly alkaline; gradual smooth boundary.
- Cg—18 to 25 inches; light olive brown (2.5Y 5/4) sandy clay loam, olive brown (2.5Y 4/4) moist, few fine faint black (2.5Y 2/1), moist, and common medium strong brown (7.5YR 5/8), moist, mottles; massive; hard, firm, sticky and plastic; few fine and medium roots; moderately alkaline; clear wavy boundary.
- 2C—25 to 60 inches; yellowish brown (10YR 5/6) very gravelly sand stratified with thin lenses of sand, dark yellowish brown (10YR 4/6) moist, common fine distinct brown (7.5YR 5/8) moist, mottles; single grain; loose, nonsticky and nonplastic; 45 percent gravel; moderately alkaline.

The depth to a seasonal high water table from March through August ranges from 0 to 2 feet. The A horizon has a slightly alkaline through strongly alkaline reaction. Electrical conductivity in this horizon ranges from 2.0 to 8.0 millimhos per centimeter. The Cg horizon commonly has a texture of loam or sandy clay loam, but a thin layer of very gravelly loam is present in some pedons. The

electrical conductivity in this horizon is less than 8 millimhos per centimeter.

The 2C horizon commonly has a texture of extremely gravelly loamy sand, very gravelly sand, or very gravelly loamy sand. Thin layers with a texture of sand, loamy sand, or gravelly loamy sand are common in this horizon. The 2C horizon has a slightly alkaline or moderately alkaline reaction. It has hue of 7.5YR or 10YR. The depth to the 2C horizon ranges from 23 to 38 inches.

Rentsac Series

The Rentsac series consists of shallow, well drained soils on cuesta dip slopes and structural benches. They formed in residuum and alluvium derived from sandstone. Slope ranges from 2 to 15 percent. Elevation is 7,200 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Rentsac channery sandy loam, in an area of Rentsac-Wycolo complex, 2 to 15 percent slopes, 220 feet east, 200 feet south of the northwest corner of sec. 26, T. 13 N., R. 76 W.

- A—0 to 3 inches; yellowish brown (10YR 5/4) channery sandy loam, dark yellowish brown (10YR 3/4) moist; single grain; loose, nonsticky and nonplastic; many fine roots; 5 percent gravel and 20 percent channers; the surface is 20 percent covered with channers and a few flagstones; slightly alkaline; clear smooth boundary.
- Bw—3 to 6 inches; yellowish brown (10YR 5/4) very channery sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few fine and medium roots; 10 percent gravel and 40 percent channers; slightly alkaline; clear smooth boundary.
- C—6 to 14 inches; brown (7.5YR 5/4) extremely channery sandy loam, dark brown (7.5YR 3/4) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few fine roots; 10 percent gravel and 60 percent channers; neutral; abrupt smooth boundary.
- R—14 inches; hard brown sandstone.

The surface is 20 to 50 percent covered with sandstone gravel, channers, or stones. The depth to bedrock ranges from 10 to 20 inches. The particle-size control section is 10 to 18 percent clay. Reaction is neutral or slightly alkaline throughout the profile. The Bw horizon has a texture of very channery sandy loam or very channery loam. The C horizon has a texture of extremely channery sandy loam or extremely channery loam.

These Rentsac soils are a taxadjunct to the Rentsac series because they are noneffervescent throughout the profile. They are loamy-skeletal, mixed, nonacid, frigid Lithic Ustic Torriorthents.

Renvers Series

The Renvers series consists of very shallow, well drained soils on cuesta dip slopes. They formed in residuum and alluvium derived from sandstone. Slope ranges from 3 to 15 percent. Elevation is 7,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Renvers very stony loam, in an area of Renvers-Chalkhill complex, 1 to 15 percent slopes, 900 feet north, 500 feet east of the southwest corner of sec. 24, T. 27 N., R. 77 W.

A1—0 to 1 inch; pale brown (10YR 6/3) very stony loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; 30 percent stones, 5 percent cobbles, and 10 percent gravel; the surface is 35 percent covered with stones and cobbles and 15 percent covered with gravel; neutral; abrupt smooth boundary.

AC—1 to 4 inches; brown (7.5YR 5/4) very stony fine sandy loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; 15 percent gravel, 5 percent cobbles, and 35 percent stones; neutral.

R—4 inches; hard sandstone.

The surface is 20 to 50 percent covered with sandstone gravel, channers, or stones. The depth to bedrock ranges from 4 to 10 inches. The particle-size control section is 8 to 18 percent clay and 35 to 50 percent rock fragments. Reaction is neutral or slightly alkaline throughout the profile.

Rimton Series

The Rimton series consists of moderately deep, well drained soils on north-facing mountain slopes and canyon sides. They formed in residuum and colluvium derived from interbedded sandstone and limestone. Slope ranges from 10 to 60 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Rimton very fine sandy loam, in an area of Rimton-Passcreek, cobbly subsoil-Miracle complex, 10 to 60 percent slopes, 1,700 feet east, 1,300

feet south of the northwest corner of sec. 16, T. 15 N., R. 72 W.

Oe—2 inches to 0; partially decomposed pine needles and forest litter.

A—0 to 4 inches; very dark gray (10YR 3/1) very fine sandy loam, black (10YR 2/1) moist; moderate medium granular structure; slightly hard; very friable, nonsticky and nonplastic; common fine and medium roots; neutral; clear wavy boundary.

E—4 to 9 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak medium platy structure parting to weak fine granular; slightly hard, very friable, nonsticky and nonplastic; common fine roots; neutral; clear irregular boundary.

E/B—9 to 15 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; interfingering with brown (7.5YR 4/4) sandy clay loam, dark brown (7.5YR 3/4) moist; strong coarse angular blocky structure; hard, friable, sticky and plastic; common fine roots; slightly alkaline; clear smooth boundary.

Bt1—15 to 24 inches; strong brown (7.5YR 4/6) sandy clay loam, dark brown (7.5YR 3/4) moist; strong coarse prismatic structure parting to strong coarse angular blocky; hard, firm, sticky and plastic; common fine roots; common prominent clay films on faces of ped; 10 percent cobbles; slightly alkaline; clear smooth boundary.

Bt2—24 to 32 inches; yellowish red (5YR 5/6) sandy clay loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine roots; few faint clay films on faces of ped; 10 percent cobbles; slightly alkaline; clear smooth boundary.

Bk—32 to 39 inches; yellowish red (5YR 5/6) very cobbly fine sandy loam, reddish brown (5YR 4/4) moist; slightly hard, very friable, nonsticky and nonplastic; common fine roots; noneffervescent matrix, calcium carbonate as thin coatings on rock fragments; 10 percent gravel, 35 percent cobbles, and 5 percent small stones; slightly alkaline; clear smooth boundary.

Cr—39 inches; weakly consolidated, interbedded limestone and sandstone.

The depth to bedrock ranges from 20 to 40 inches. The A and Bt horizons have neutral or slightly alkaline reactions. The Bt horizon has a texture of sandy clay loam or cobbly sandy clay loam; it is 25 to 35 percent clay and 10 to 20 percent rock fragments. The Bk horizon has a texture of very cobbly fine sandy loam or very cobbly sandy clay loam; it is 40 to 60 percent rock fragments.

The fine earth of the Bk horizon is noneffervescent, but in some pedons thin coatings of calcium carbonate occur on the rock fragments. The rock fragments in the Bt and Bk horizons are mainly angular cobbles 3 to 8 inches in diameter.

Rock River Series

The Rock River series consists of deep, well drained soils on alluvial fans and terraces. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Rock River soil, in an area of Rock River sandy loam, 2 to 6 percent slopes, 250 feet west, 1,150 feet south of the northeast corner of sec. 19, T. 18 N., R. 73W.

- A—0 to 3 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak coarse granular structure parting to moderate medium granular; soft, very friable, slightly sticky and nonplastic; many very fine and fine and common medium roots; slightly alkaline; abrupt smooth boundary.
- Bt1—3 to 12 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to strong medium subangular blocky; slightly hard, firm, slightly sticky and slightly plastic; few fine and medium roots; common distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Bt2—12 to 17 inches; brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few faint clay films on faces of peds; 5 percent cobbles; slightly alkaline; clear smooth boundary.
- Bk—17 to 60 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; slightly effervescent, calcium carbonate is disseminated and also occurs as few fine seams; 5 percent gravel and cobbles; slightly alkaline.

The surface is 0 to 50 percent covered with gravel. The A and Bt horizons have neutral or slightly alkaline reactions. The Bt horizon has a texture of sandy clay loam or gravelly sandy clay loam; it is 20 to 30 percent clay and 35 to 55 percent fine or coarser sand. The Bt horizon has hue of 10YR or 7.5YR. The Bk horizon has a texture of fine sandy loam, sandy loam, or gravelly sandy clay loam.

It has a slightly alkaline to strongly alkaline reaction. The Bk horizon has hue of 2.5Y or 10YR.

Rogert Series

The Rogert series consists of shallow, well drained soils on foothills and mountain slopes. They formed in residuum and colluvium derived from granite. Slope ranges from 5 to 99 percent. Elevation is 7,600 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Rogert gravelly sandy loam, in an area of Hapjack-Rogert-Amesmont complex, 3 to 25 percent slopes, 1,300 feet east, 1,300 feet south of the northwest corner of sec. 13, T. 15 N., R. 72 W.

- A—0 to 3 inches; brown (7.5YR 4/4) gravelly sandy loam, dark brown (7.5YR 3/2) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; 25 percent gravel; the surface is 40 percent covered with gravel; neutral; abrupt smooth boundary.
- AB—3 to 8 inches; brown (7.5YR 4/3) gravelly sandy loam, dark brown (7.5YR 3/3) moist; moderate medium subangular blocky structure parting to moderate medium granular; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; 25 percent gravel; neutral; clear wavy boundary.
- C—8 to 16 inches; brown (7.5YR 4/4) very gravelly sandy loam, dark brown (7.5YR 3/4) moist; single grain; loose, nonsticky and nonplastic; few medium roots; 60 percent gravel; neutral; abrupt wavy boundary.
- R—16 inches; hard granite.

The surface is 20 to 70 percent covered with fine gravel. The depth to bedrock ranges from 10 to 20 inches. The mollic epipedon is 7 to 12 inches thick. The A horizon has hue of 10YR or 7.5YR. The C horizon is 45 to 60 percent gravel. It has a neutral or slightly alkaline reaction.

Rohonda Series

The Rohonda series consists of moderately deep, well drained soils on strath terraces, structural benches, hillslopes and foot slopes of ridges, and in swales. They formed in residuum and alluvium derived from shale, sandstone, and limestone. Slope ranges from 3 to 15 percent. Elevation is 6,000 to 9,000 feet, average annual precipitation is 10 to 19 inches, and average annual air temperature is 38 to 45 degrees F. Frost-free period is less than 60 to 110 days.

Typical pedon of Rohonda fine sandy loam, in an area of Rohonda-Tieside complex, 3 to 10 percent slopes, 50 feet east, 150 feet south of the northwest corner of sec. 22, T. 13 N., R. 73 W.

A—0 to 3 inches; reddish brown (5YR 4/4) fine sandy loam, dark reddish brown (5YR 3/4) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

AB—3 to 6 inches; reddish brown (5YR 4/4) fine sandy loam, dark reddish brown (5YR 3/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; abrupt smooth boundary.

Bt—6 to 16 inches; reddish brown (5YR 5/4) fine sandy loam, dark reddish brown (5YR 3/4) moist; moderate coarse prismatic structure parting to strong coarse subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; many distinct clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated and has a 4 percent calcium carbonate equivalent by calcimeter method; moderately alkaline; clear wavy boundary.

Btk—16 to 21 inches; reddish brown (5YR 5/4) fine sandy loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure parting to moderate medium granular; slightly hard, very friable, slightly sticky and nonplastic; few faint clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated and has a 6 percent calcium carbonate equivalent by calcimeter method; 10 percent fine gravel; moderately alkaline; gradual wavy boundary.

Bk—21 to 38 inches; light red (2.5YR 6/6) fine sandy loam, red (2.5YR 5/6) moist; massive; soft, very friable, slightly sticky and nonplastic; violently effervescent, calcium carbonate is disseminated and also occurs as thin pendants on undersides of larger gravel, 12 percent calcium carbonate equivalent by calcimeter method; 10 percent fine and medium gravel; moderately alkaline; clear smooth boundary.

Cr—38 inches; weakly consolidated sandstone.

The depth to bedrock ranges from 20 to 40 inches. The A and Bt horizons have slightly alkaline or moderately alkaline reactions. The Bt horizon has a texture of sandy loam, fine sandy loam, or very fine sandy loam. The Bk horizon has a texture of fine sandy loam or sandy loam; it is 5 to 15 percent gravel. Calcium carbonate equivalent in

the Bk horizon ranges from 5 to 15 percent. Hue in the Bk horizon is 2.5YR to 7.5YR.

Ryan Park Series

The Ryan Park series consists of very deep, well drained soils on hills, ridges, alluvial fans, and terraces. They formed in alluvium. Slope ranges from 1 to 15 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Ryan Park fine sandy loam, in an area of Fiveoh-Fiveoh, cobbly substratum-Ryan Park complex, 1 to 8 percent slopes, 1,500 feet north, 350 feet east of the southwest corner of sec. 25, T. 16 N., R. 73 W.

A—0 to 3 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and common medium roots; slightly alkaline; abrupt smooth boundary.

Bt—3 to 11 inches; brown (7.5YR 4/4) fine sandy loam, dark brown (7.5YR 3/4) moist; strong coarse prismatic structure parting to strong coarse subangular blocky; hard, friable, slightly sticky and slightly plastic; common fine and medium roots; common faint and distinct clay films on faces of peds; 5 percent gravel; slightly alkaline; clear smooth boundary.

Bk1—11 to 18 inches; brown (7.5YR 5/4) fine sandy loam, dark brown (7.5YR 3/4) moist; moderate coarse subangular block structure; hard, friable, slightly sticky and slightly plastic; few medium roots; strongly effervescent, calcium carbonate is disseminated; 5 percent coarse gravel; moderately alkaline; gradual wavy boundary.

Bk2—18 to 38 inches; brown (7.5YR 5/4) gravelly fine sandy loam, dark brown (7.5YR 4/4) moist; massive; slightly hard, very friable, sticky and nonplastic; few medium roots; violently effervescent, calcium carbonate is disseminated and also occurs as pendants on undersides of rock fragments; 15 percent coarse gravel and 10 percent cobbles; moderately alkaline; gradual wavy boundary.

Bk3—38 to 60 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, sticky and nonplastic; few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as pendants on undersides of rock fragments; 15 percent gravel and 10 percent cobbles; moderately alkaline.

The A horizon has a neutral or slightly alkaline reaction. The Bt and Bk horizons have hue of 7.5YR or 10YR. The Bt horizon is 10 to 17 percent clay and 0 to 5 percent gravel. Reaction in this horizon is slightly alkaline or moderately alkaline. The Bk horizon has a texture of gravelly fine sandy loam, gravelly sandy loam, or fine sandy loam; it is 0 to 15 percent gravel and 0 to 10 percent cobbles. The Bk horizon has a moderately alkaline or strongly alkaline reaction.

Ryark Series

The Ryark series consists of very deep, well drained soils on alluvial fans. They formed in eolian deposits derived from various sources. Slope ranges from 1 to 6 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of the Ryark soil, in an area of Ryark loamy sand, 1 to 6 percent slopes, 1,300 feet east, 1,800 feet north of the southwest corner of sec. 6, T. 15 N., R. 72 W.

A—0 to 3 inches; brown (10YR 5/3) loamy sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; many very fine, fine, and common medium roots; slightly alkaline; abrupt smooth boundary.

BA—3 to 6 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak coarse granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and common medium roots; slightly alkaline; clear smooth boundary.

Bt—6 to 20 inches; dark yellowish brown (10YR 4/4) sandy loam, dark yellowish brown (10YR 3/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common faint clay films on faces of peds and clay bridges between sand grains; slightly alkaline; clear wavy boundary.

BC—20 to 36 inches; brown (7.5YR 4/4) sandy loam, dark brown (7.5YR 3/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and medium roots; slightly alkaline; clear wavy boundary.

C1—36 to 60 inches; light brown (7.5YR 6/4) loamy sand, dark brown (7.5YR 4/4) moist; single grain; loose, nonsticky and nonplastic; slightly alkaline.

The A and Bt horizons have neutral or slightly alkaline reactions. The Bt horizon is 10 to 18 percent clay. The C horizon has hue of 7.5YR or 10YR.

Satanka Series

The Satanka series consists of moderately deep, well drained soils on ridges. They formed in alluvium and residuum derived from sedimentary rock. Slope ranges from 5 to 20 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Satanka fine sandy loam, in an area of Blackhall-Satanka-Rock outcrop complex, 5 to 20 percent slopes, 2,400 feet west, 50 feet north of the southeast corner of sec. 36, T. 16 N., R. 74 W.

A—0 to 4 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 4/3) moist; moderate fine granular structure; weak fine platy in upper inch; soft, very friable, nonsticky and nonplastic; slightly alkaline; clear smooth boundary.

Bt—4 to 9 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and slightly plastic; many faint clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bk1—9 to 13 inches; grayish brown (2.5Y 5/2) sandy clay loam, olive brown (2.5Y 4/3) moist; weak coarse prismatic structure parting to weak medium subangular blocky; hard, friable, sticky and plastic; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine and medium soft masses, threads, and seams; moderately alkaline; clear wavy boundary.

Bk2—13 to 35 inches; light gray (2.5Y 7/2) sandy clay loam, light yellowish brown (2.5Y 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine and medium soft masses, threads, and seams; numerous partially weathered sandstone fragments that break down when moistened and rubbed; strongly alkaline; diffuse wavy boundary.

Cr—35 inches; weakly consolidated sandstone.

The particle-size control section averages 20 to 30 percent clay and 45 to 55 percent fine or coarser sand. The A and Bt horizons have aslightly alkaline or moderately alkaline reactions. The Bk horizon has a texture of sandy loam or sandy clay loam. It has a moderately alkaline or strongly alkaline reaction.

Shirleybasin Series

The Shirleybasin series consists of very deep, well drained soils on the foot slopes of pediment breaks and

pediment summits. They formed in alluvium and residuum derived dominantly from tuffaceous sedimentary rocks. Slope ranges from 0 to 8 percent. Elevation is 7,000 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Shirleybasin loam, in an area of Shirleybasin-Twocabin-Lahtida complex, 0 to 15 percent slopes, 2,250 feet west, 2,250 feet south of the northeast corner of sec. 27, T. 27 N., R. 76 W.

- A—0 to 2 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, sticky and plastic; many very fine and fine and few medium and coarse roots; common very fine pores; neutral; abrupt wavy boundary.
- Bt1—2 to 8 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, firm, sticky and plastic; many very fine and fine and common medium roots; many very fine and common fine pores; many faint clay films on faces of peds; slightly alkaline; clear wavy boundary.
- Bt2—8 to 27 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong medium prismatic structure parting to strong medium angular blocky; very hard, very firm, sticky and plastic; common very fine and fine and few medium roots; many faint clay films on faces of peds; slightly alkaline; abrupt wavy boundary.
- Bk1—27 to 52 inches; white (2.5Y 8/2) clay loam, white (2.5Y 8/2) moist; common coarse distinct olive brown (2.5YR 4/6) and yellowish brown (10YR 5/8) lithochromic mottles; massive; hard, firm, sticky and plastic; few fine and very fine roots; common very fine pores; strongly effervescent, calcium carbonate is disseminated; 5 percent fine gravel; strongly alkaline; clear wavy boundary.
- Bk2—52 to 60 inches; light gray (2.5Y 7/2) gravelly sandy clay loam, light brownish gray (2.5Y 6/2) moist; massive; slightly hard, firm, sticky and plastic; strongly effervescent, calcium carbonate is disseminated; 25 percent fine gravel; moderately alkaline.

The Bt horizon has a dominant texture of clay loam or clay, but a thin layer of sandy clay loam is present in some pedons. This horizon is 0 to 15 percent rock fragments. Although some thin individual subhorizons are 30 to 35 percent clay, the Bt horizon averages 35 to 45 percent clay. Reaction in the Bt horizon is neutral to moderately alkaline. The Bk horizon has a texture of loam, gravelly sandy clay loam, sandy clay loam, or clay loam. It has a moderately alkaline or strongly alkaline reaction.

Silas Series

The Silas series consists of very deep, somewhat poorly drained soils on outwash terraces and in mountain valleys. They formed in alluvium derived dominantly from granite. Slope ranges from 1 to 6 percent. Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Silas loam, gravelly substratum, in an area of Silas, gravelly substratum-Vensora loams, 0 to 6 percent slopes, 150 feet north, 70 feet west of the southeast corner of sec. 34, T. 18 N., R. 72 W.

- A—0 to 8 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and medium roots; neutral; clear smooth boundary.
- A/C—8 to 22 inches; 75 percent dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; 25 percent very dark grayish brown (10YR 3/2) very fine sandy loam, black (10YR 2/1) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; neutral; gradual irregular boundary.
- C1—22 to 42 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and plastic; 20 percent fine gravel; slightly alkaline; gradual wavy boundary.
- 2C2—42 to 60 inches; yellowish brown (10YR 5/4) very gravelly sandy loam stratified with layers of gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; common medium faint strong brown (7.5YR 5/8) mottles; single grain; loose, nonsticky and nonplastic; 50 percent fine gravel; slightly alkaline.

The depth to a seasonal high water table ranges from 2.5 to 4.5 feet from April through July. The mollic epipedon is 16 to 22 inches thick. The particle-size control section averages 20 to 30 percent clay and 5 to 20 percent rock fragments. Reaction is neutral or slightly alkaline throughout the profile. The C horizon has hue of 10YR or 2.5Y. It has a texture of gravelly sandy clay loam, gravelly clay loam, sandy clay loam, loam, or clay loam. The 2C horizon is absent in some pedons.

Spinekop Series

The Spinekop series consists of very deep, well drained soils on saddles of mountains. They formed in

alluvium from various sources. Slope ranges from 0 to 10 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Spinekop sandy loam, in an area of Cathedral-Spinekop-Rock outcrop complex, 0 to 40 percent slopes, 1,500 feet east, 550 feet south of the northwest corner of sec. 27, T. 22 N., R. 71 W.

A—0 to 2 inches; grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and medium roots; moderately alkaline; clear smooth boundary.

Bw1—2 to 9 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; moderate fine prismatic structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and medium roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual wavy boundary.

Bw2—9 to 31 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 4/3) moist; weak medium prismatic structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; strongly effervescent, calcium carbonate is disseminated; strongly alkaline; gradual wavy boundary.

2Bk—31 to 60 inches; brown (10YR 5/3) very fine sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine threads; strongly alkaline.

The particle-size control section averages 18 to 30 percent clay and 15 to 35 percent or coarser fine sand. The A horizon has a neutral to moderately alkaline reaction. The Bw and Bk horizons have a moderately alkaline or strongly alkaline reactions. The Bw horizon has a texture of loam, clay loam, or silty clay loam. The 2Bk horizon has a texture of very fine sandy loam or loam.

Stunner Series

The Stunner series consists of very deep, well drained soils on strath terraces, fan terraces and in valleys. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Stunner sandy loam, in an area of Stunner-Borollic Camborthids complex, 2 to 5 percent

slopes, 1,425 feet west, 25 feet south of the northeast corner of sec. 26, T. 20 N., R. 74 W.

A—0 to 3 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; slightly alkaline; abrupt smooth boundary.

Bt1—3 to 6 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds; slightly alkaline; clear smooth boundary.

Bt2—6 to 13 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; strong medium prismatic structure; hard, friable, slightly sticky and slightly plastic; many distinct clay films on faces of peds; slightly alkaline; abrupt smooth boundary.

Btk—13 to 25 inches; light gray (10YR 7/2) loam, grayish brown (2.5Y 5/2) moist; moderate medium prismatic structure; slightly hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual smooth boundary.

Bk—25 to 60 inches; pale brown (10YR 6/3) loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; strongly effervescent, calcium carbonate is disseminated; a 1-inch-thick layer of gravelly loam occurs at a depth of 24 inches; strongly alkaline.

The A horizon has a neutral or slightly alkaline reaction. The A and Bt horizons have hue of 10YR or 7.5YR. The Bt horizon has a texture of loam or clay loam; it is 22 to 34 percent clay and 20 to 35 percent fine or coarse sand. The Bk horizon has a texture of sandy loam, fine sandy loam, loam, or sandy clay loam. It has a moderately alkaline or strongly alkaline reaction. The upper part of the Bk horizon has a calcium carbonate equivalent of 15 to 25 percent.

Stylite Series

The Stylite series consists of very deep, well drained soils on hillslopes. They formed in alluvium and residuum derived from gypsiferous sedimentary rock. Slope ranges from 1 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Stylite fine sandy loam, in an area of Luvar-Stylite-Diamonkit complex, 1 to 8 percent slopes, 150 feet north and 2,300 feet west of the southeast corner of sec. 2, T. 15 N., R. 74 W.

A—0 to 2 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, nonsticky and nonplastic; many fine roots; few very fine discontinuous pores; slightly alkaline; abrupt smooth boundary.

BA—2 to 4 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many fine roots; few very fine discontinuous pores; slightly effervescent, calcium carbonate is disseminated; slightly alkaline; clear smooth boundary.

Bt—4 to 14 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; moderate medium columnar structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; few fine and very fine discontinuous pores; common distinct clay films on faces of peds; slightly alkaline; gradual smooth boundary.

Btk—14 to 21 inches; very pale brown (10YR 7/3) clay loam, yellowish brown (10YR 5/4) moist; weak medium columnar structure parting to weak medium subangular blocky; slightly hard, friable, sticky and slightly plastic; common fine roots; few very fine discontinuous pores; few faint clay films on faces of peds; violently effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses, 20 percent calcium carbonate equivalent by calcimeter; moderately alkaline; gradual smooth boundary.

Bk—21 to 30 inches; very pale brown (10YR 7/3) clay loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, friable, sticky and slightly plastic; few very fine roots; few very fine discontinuous pores; violently effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses, 10 percent calcium carbonate equivalent; moderately alkaline; gradual wavy boundary.

By1—30 to 40 inches; pale brown (10YR 6/3) loam; yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, sticky and slightly plastic; common very fine discontinuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses; gypsum as many (30 percent) fine and few (2 percent) medium soft masses; moderately alkaline; gradual wavy boundary.

By2—40 to 60 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, sticky and plastic; common very fine discontinuous pores; slightly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses; gypsum

as many (30 percent) fine and common (5 percent) medium soft masses; moderately alkaline.

The A, Bt, and By horizons have slightly alkaline or moderately alkaline reactions. The Bk horizon has a moderately alkaline or strongly alkaline reaction. Calcium carbonate equivalent in the Bk horizon is 10 to 25 percent. The By horizon is 15 to 40 percent gypsum. The electrical conductivity in the By horizon is 4 to 8 millimhos per centimeter. The Bt, Bk and By horizons have textures of loam or clay loam.

Teeler Series

The Teeler series consists of very deep, well drained soils on mountain slopes and alluvial fans. They formed in alluvium and colluvium derived from schist and granite. Slope ranges from 5 to 40 percent. Elevation is 7,800 to 8,900 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Teeler very gravelly sandy loam, in an area of Teeler very gravelly sandy loam, 5 to 40 percent slopes, 325 feet west, 550 feet north of the southeast corner of sec. 15, T. 13 N., R. 77 W.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; many fine roots; 35 percent gravel; the surface is 50 percent covered with cobbles and gravel; slightly alkaline; abrupt smooth boundary.

AB—2 to 6 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; 35 percent gravel; neutral; clear smooth boundary.

Bt—6 to 14 inches; dark brown (10YR 3/3) very gravelly sandy clay loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; common faint clay films on faces of peds; 35 percent gravel and 5 percent cobbles; slightly alkaline; gradual smooth boundary.

Btk—14 to 26 inches; light olive brown (2.5Y 5/4) very gravelly sandy loam, very dark grayish brown (2.5Y 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few faint clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated and also occurs as common thin coatings and pendants on rock fragments; 30 percent gravel and 15 percent cobbles; moderately alkaline; clear smooth boundary.

Bk—26 to 60 inches; light brownish gray (2.5Y 6/2) very cobbly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few fine roots; strongly effervescent, calcium carbonate is disseminated and also occurs as moderately thick pendants on rock fragments, 24 percent calcium carbonate equivalent by calcimeter method; 30 percent gravel and 20 percent cobbles; moderately alkaline.

The A horizon has a neutral or slightly alkaline reaction. The Bk horizon has a moderately alkaline or strongly alkaline reaction. The Bk horizon has a texture of very cobbly sandy loam or very gravelly sandy loam. Calcium carbonate equivalent in this horizon is 15 to 30 percent.

This Teeler soil is outside the characteristics of the Teeler series because it has hue of 10YR or 2.5YR in the Bt and Bk horizons.

Telecan Series

The Telecan series consists of very deep, well drained soils on valley bottoms. They formed in alluvium derived dominantly from interbedded sandstone and limestone. Slope ranges from 3 to 6 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Telecan fine sandy loam, in an area of Bruja-Canwall-Telecan association, 3 to 60 percent slopes, 1,400 feet east, 2,200 feet north of the southwest corner of sec. 6, T. 14 N., R. 72 W.

A—0 to 4 inches; brown (7.5YR 4/4) fine sandy loam, dark brown (7.5YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; moderately alkaline; clear smooth boundary.

Bw1—4 to 16 inches; dark brown (7.5YR 3/4) fine sandy loam, dark brown (7.5YR 3/3) moist; moderately coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; moderately alkaline; clear smooth boundary.

Bw2—16 to 27 inches; dark yellowish brown (10YR 3/4) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, nonsticky and nonplastic; very few fine roots; slightly effervescent, calcium carbonate is disseminated; moderately alkaline; gradual smooth boundary.

Bk1—27 to 41 inches; dark brown (7.5YR 3/4) very fine sandy loam, dark brown (7.5YR 3/2) moist; massive;

slightly hard, very friable, slightly sticky and nonplastic; very few fine roots; violently effervescent, calcium carbonate is disseminated; moderately alkaline; gradual smooth boundary.

Bk2—41 to 60 inches; brown (7.5YR 4/4) fine sandy loam, dark brown (7.5YR 3/4) moist; massive; soft, very friable, slightly sticky and nonplastic; very few fine roots; violently effervescent, calcium carbonate is disseminated; moderately alkaline.

The hue is 7.5YR or 10YR throughout the profile. The A horizon has a slightly alkaline or moderately alkaline reaction. The Bw and Bk horizons have textures of fine sandy loam or very fine sandy loam.

Thermopolis Series

The Thermopolis series consists of shallow, well drained soils on cuesta escarpments. They formed in residuum and colluvium derived from siltstone and shale. Slope ranges from 20 to 50 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Thermopolis fine sandy loam, in an area of Wycolo-Thermopolis-Rock outcrop complex, 10 to 50 percent slopes, 300 feet north, 500 feet east of the southwest corner of sec. 3, T. 16 N., R. 73 W.

A—0 to 2 inches; reddish brown (5YR 5/4) fine sandy loam, reddish brown (5YR 4/4) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; strongly effervescent, calcium carbonate is disseminated; 10 percent gravel; the surface is 25 percent covered with gravel; moderately alkaline; abrupt smooth boundary.

Bk1—2 to 5 inches; yellowish red (5YR 5/6) loam, red (2.5YR 4/6) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; violently effervescent, calcium carbonate as common fine seams and small masses; 10 percent soft weathered shale fragments less than 1/4 inch in diameter that break down when wetted; strongly alkaline; abrupt irregular boundary.

Bk2—5 to 14 inches; red (2.5YR 5/6) silt loam, red (2.5YR 4/6) moist; massive; slightly hard, friable, very sticky and plastic; very few fine and medium roots; violently effervescent, calcium carbonate as common fine seams and small masses; 30 percent soft weathered shale fragment less than 1/4 inch in diameter that break down when wetted; strongly alkaline; abrupt irregular boundary.

Cr—14 inches; weakly consolidated red shale.

The depth to bedrock is 10 to 20 inches. The Bk horizon has a texture of loam or silt loam. It has a moderately alkaline or strongly alkaline reaction.

Thiel Series

The Thiel series consists of very deep, well drained soils on fans, terraces, and hills. They formed in alluvium. Slope ranges from 5 to 20 percent. Elevation is 7,800 to 8,200 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Thiel gravelly sandy loam, in an area of Thiel-Lymanson-Leavitt complex, 5 to 20 percent slopes, 2,250 feet east, 2,270 feet south of the northwest corner of sec. 14, T. 12 N., R. 77 W.

A—0 to 3 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine and few medium roots; slightly effervescent, calcium carbonate is disseminated; 20 percent gravel; the surface is 25 percent covered with gravel; slightly alkaline; clear smooth boundary.

Bt1—3 to 8 inches; brown (10YR 4/3) very gravelly sandy clay loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; few faint clay films on faces of peds and as bridging between mineral grains; slightly effervescent, calcium carbonate is disseminated; 35 percent gravel; slightly alkaline; clear smooth boundary.

Bt2—8 to 12 inches; dark yellowish brown (10YR 4/4) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; weak medium columnar structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common distinct clay films on faces of peds; slightly effervescent, calcium carbonate is disseminated and has a 3 percent calcium carbonate equivalent; 30 percent gravel and 10 percent cobbles; moderately alkaline; gradual smooth boundary.

Bk1—12 to 19 inches; very pale brown (10YR 7/3) very gravelly sandy loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; very few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as common medium soft masses and as thin coatings on undersides of gravel, 45 percent calcium carbonate equivalent; 50 percent gravel; moderately alkaline; gradual wavy boundary.

2Bk2—19 to 27 inches; very pale brown (10YR 7/4) very gravelly loamy sand, light yellowish brown (10YR 6/4)

moist; massive; slightly hard, loose, nonsticky and nonplastic; very few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as thick pendants on undersides of gravel, 30 percent calcium carbonate equivalent; 60 percent gravel; moderately alkaline; gradual wavy boundary.

2Bk3—27 to 35 inches; very pale brown (10YR 7/3) extremely gravelly loamy sand, very pale brown (10YR 7/3) moist; massive; very hard, extremely firm, nonsticky and nonplastic; violently effervescent, calcium carbonate cementing gravel and sand grains, 45 percent calcium carbonate equivalent; 70 percent gravel; strongly alkaline; gradual wavy boundary.

2Bk4—35 to 60 inches; very pale brown (10YR 7/4) extremely gravelly loamy sand, light yellowish brown (10YR 6/4) moist; massive; slightly hard, loose, nonsticky and nonplastic; strongly effervescent, calcium carbonate as moderately thick pendants on undersides of gravel; 70 percent gravel; moderately alkaline.

The surface is 25 to 40 percent covered with gravel and 0 to 5 percent covered with cobbles. The Bt horizon has a slightly alkaline or moderately alkaline reaction. The Bk and 2Bk horizons have a moderately alkaline or strongly alkaline reactions. Calcium carbonate equivalent in the Bk and 2Bk horizons is 25 to 45 percent. The 2Bk horizon has a texture of very gravelly loamy sand or extremely gravelly loamy sand.

Tieside Series

The Tieside series consists of shallow, well drained soils on cuesta dip slopes, hillslopes, structural benches, and strath terraces. They formed in residuum derived from interbedded limestone, sandstone, and shale. Slope ranges from 3 to 10 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Tieside sandy loam, in an area of Tieside-Pilotpeak-Rock outcrop complex, 3 to 10 percent slopes, 500 feet west, 80 feet south of the northeast corner of sec. 35, T. 13 N., R. 73 W.

A—0 to 4 inches; yellowish red (5YR 4/6) sandy loam, dark reddish brown (5YR 3/4) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots; strongly effervescent, calcium carbonate is disseminated; moderately alkaline; clear smooth boundary.

Bk1—4 to 13 inches; yellowish red (5YR 4/6) sandy loam, dark reddish brown (5YR 3/4) moist; massive; soft, very friable, slightly sticky and nonplastic; few very

fine and fine and common medium roots; strongly effervescent; calcium carbonate is disseminated and also occurs as few thin pendants on undersides of gravel; 5 percent gravel; moderately alkaline; clear wavy boundary.

Bk2—13 to 19 inches; reddish brown (5YR 5/4) sandy loam, reddish brown (5YR 4/4) moist; massive; slightly hard, very friable, sticky and slightly plastic; very few fine and medium roots; violently effervescent, calcium carbonate as few fine soft masses and common moderately thick pendants on undersides of gravel; 10 percent gravel; moderately alkaline; gradual wavy boundary.

Cr—19 inches; weakly consolidated, interbedded limestone, sandstone, and shale.

The depth to bedrock ranges from 10 to 20 inches. The A horizon has a slightly alkaline or moderately alkaline reaction. The calcium carbonate equivalent in the Bk1 horizon is 20 to 30 percent; in the Bk2 it is 30 to 50 percent. The Bk1 horizon has a texture of sandy loam or fine sandy loam. The Bk2 horizon has a texture of coarse sandy loam, sandy loam, or fine sandy loam. The Bk horizons are 5 to 15 percent rock fragments.

Tismid Series

The Tismid series consists of very deep, well drained soils on fan terraces, stream terraces, and dip slopes, as well as in drainageways and areas adjacent to playas and intermittent lakes. They formed in alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,800 to 7,500 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Tismid sandy loam, in an area of Kiltabar-Tismid complex, 0 to 3 percent slopes, 1,500 feet west, 350 feet south of the northeast corner of sec. 26, T. 20 N., R. 75 W.

A—0 to 4 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft; loose, nonsticky and nonplastic; many fine and common medium roots; common very fine continuous pores; slightly alkaline; abrupt smooth boundary.

Bt—4 to 7 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 4/3) moist; strong coarse prismatic structure parting to strong coarse subangular blocky; very hard, friable, sticky and plastic; many fine and common medium roots; common very fine and few fine continuous pores; few distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.

Btn—7 to 20 inches; light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; strong coarse

prismatic structure parting to strong coarse and medium subangular blocky; very hard, friable, sticky and plastic; many fine and common medium roots; common very fine and few fine continuous pores; many prominent clay films on faces of peds; very strongly alkaline; clear wavy boundary.

Btkn—20 to 26 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; weak coarse prismatic structure; very hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common very fine and few fine continuous pores; few distinct clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses, 10 percent calcium carbonate equivalent by calcimeter method; few fine soft masses of gypsum and few fine soft masses of more soluble salts; strongly alkaline; gradual wavy boundary.

Bkz1—26 to 36 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; massive; very hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and few fine continuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses, 10 percent calcium carbonate equivalent by calcimeter methods; few fine soft masses of gypsum and common fine soft masses of more soluble salts; electrical conductivity of 9.5 millimhos per centimeter; moderately alkaline; gradual wavy boundary.

Bkz2—36 to 60 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; massive; very hard, friable, slightly sticky and slightly plastic; few fine roots; common very fine and few fine continuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses, 7 percent calcium carbonate equivalent by calcimeter method; few fine soft masses of gypsum and common fine soft masses of more soluble salts; electrical conductivity of 8.8 millimhos per centimeter; 10 percent gravel; moderately alkaline.

The Bt and Btn horizons are 20 to 35 percent clay. They have a texture of sandy clay loam or clay loam. The Btn horizon has hue of 5YR through 10YR. The Bt horizon has a slightly alkaline or moderately alkaline reaction. Reaction is strongly alkaline or very strongly alkaline in the Btn horizon. The Bkz horizon has a moderately alkaline to very strongly alkaline reaction. The Bkyz horizon has a texture of loam or sandy clay loam.

Tisworth Series

The Tisworth series consists of very deep, well drained soils on fan terraces and stream terraces. They formed in

alluvium. Slope ranges from 0 to 8 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Tisworth sandy clay loam, in an area of Tisworth-Gerdrum Family complex, 0 to 6 percent slopes, 800 feet west, 3,000 feet south of the northeast corner of sec. 23, T. 19 N., R. 75 W.

A—0 to 2 inches; light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; moderate very fine and fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and few medium and coarse roots; common very fine and few fine continuous pores; strongly effervescent, calcium carbonate is disseminated; strongly alkaline; abrupt smooth boundary.

Btn—2 to 13 inches; yellowish brown (10YR 5/4) clay loam, brown (10YR 4/3) moist; strong very coarse prismatic structure parting to strong medium and coarse subangular blocky; very hard, firm, sticky and plastic; common very fine, fine, and few medium roots; common very fine and few fine continuous pores; common prominent clay films on faces of peds; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses; few fine soft masses of gypsum; very strongly alkaline; clear smooth boundary.

Bkn—13 to 38 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; massive; very hard, firm, sticky and plastic; common very fine, fine, and few medium and coarse roots to 20 inches, few very fine, fine, and medium roots below 20 inches; common very fine and few fine continuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses; few fine soft masses of gypsum; very strongly alkaline; clear wavy boundary.

Bky—38 to 60 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; massive; very hard, firm, sticky and plastic; few very fine, fine, and medium roots; common very fine and few fine continuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as many fine and medium soft masses; many medium and fine soft masses of gypsum; strongly alkaline.

The A horizon is 0 to 10 percent gravel. It has a slightly alkaline to strongly alkaline reaction. The Btn horizon has a texture of clay loam or sandy clay loam; it is 25 to 35 percent clay and less than 10 percent gravel. The Btn horizon has a strongly alkaline or very strongly alkaline reaction. The Bkn and Bky horizons have textures of

loam, clay loam, or sandy clay loam and are 0 to 15 percent gravel. The Bkn and Bky horizons have moderately alkaline to very strongly alkaline reactions.

Tule Series

The Tule series consist of very shallow or shallow and well drained soils on ridges and pediments. They formed in alluvium and residuum derived dominantly from tuffaceous rock. Slope ranges from 0 to 15 percent. Elevation is 6,600 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Tule loam, in an area of Tule-Chalkville loams, 0 to 15 percent slopes, 1,800 feet east and 1,200 feet north of the southwest corner of sec. 34, T. 28 N., R. 77 W.

A—0 to 3 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine and very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; 5 percent gravel; slightly alkaline; clear wavy boundary.

C1—3 to 12 inches; yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; 5 percent gravel; moderately alkaline; clear wavy boundary.

2C2—12 to 15 inches; yellowish brown (10YR 5/4) extremely gravelly loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; slightly effervescent, calcium carbonate pendants on the undersides of the gravel; 65 percent gravel; moderately alkaline; clear wavy boundary.

R—15 inches; hard white tuff.

The depth to bedrock ranges from 4 to 20 inches. The A horizon has a neutral or slightly alkaline reaction. Reaction in the C horizon is neutral to moderately alkaline. The C horizon has a fine-earth texture of loam or sandy clay loam. The content of rock fragments ranges from 5 to 65 percent in the individual subhorizons of the C horizon, but the particle-size control section averages 35 to 45 percent rock fragments.

Twocabin Series

The Twocabin series consists of very deep, well drained soils on the crests of ridges, breaks, and knobs of dissected pediments to the Laramie Range. They formed in alluvium overlying residuum derived from interbedded tuff, shale, and claystone. Slope ranges from 6 to 15 percent. Elevation is 7,000 to 7,500 feet, average

annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Twocabin gravelly loam, in an area of Shirleybasin-Twocabin-Lahtida complex, 0 to 15 percent slopes, 1,900 feet south, 2,000 feet west of the northeast corner of sec. 4, T. 27 N, R. 76 W.

A—0 to 4 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; 20 percent medium and coarse gravel; neutral; abrupt smooth boundary.

Bt—4 to 11 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; moderate medium prismatic structure parting to moderate medium angular blocky; slightly hard, friable, sticky and plastic; few fine roots; many distinct clay films on faces of peds; 40 percent medium and coarse gravel; neutral; clear wavy boundary.

Btk—11 to 20 inches; very pale brown (10YR 7/3) very gravelly loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common faint clay films on faces of peds; 40 percent fine gravel; violently effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses; moderately alkaline; clear smooth boundary.

2Bk1—20 to 27 inches; white (10YR 8/2) loam, very pale brown (10YR 7/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses; less than 5 percent fine gravel; moderately alkaline; gradual smooth boundary.

2Bk2—27 to 60 inches; very pale brown (10YR 7/3) loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; violently effervescent, calcium carbonate is disseminated and also occurs as common fine masses and filaments; less than five percent fine and medium gravel; moderately alkaline.

The surface is 10 to 50 percent covered with cobbles and gravel. The A horizon is 20 to 30 percent gravel and 0 to 10 percent cobbles. It has a neutral or slightly alkaline reaction. Hue of the A and Bt horizons is 10YR or 7.5YR. The Bt and Btk horizons have fine-earth textures of sandy clay loam or clay loam and commonly are very gravelly. In some pedons however, they are very cobbly. The Bt and Btk horizons are 18 to 35 percent clay and 35 to 50 percent rock fragments. The rock fragments consist of 25 to 40 percent gravel and 0 to 35 percent cobbles. Reaction in the Bt horizon is neutral through

moderately alkaline. The calcium carbonate equivalent in the Btk horizon is 10 to 25 percent.

The 2Bk horizon has hue of 10YR or 2.5Y. It has a texture of loam, clay loam, or sandy clay loam. The reaction in this horizon is moderately alkaline or strongly alkaline. Calcium carbonate equivalent in this horizon is 15 to 35 percent.

Tyzak Series

The Tyzak series consists of very shallow or shallow and well drained soils on mountain hogback slopes and canyon sides. They formed in residuum and colluvium derived from limestone. Slope ranges from 30 to 60 percent. Elevation is 6,500 to 7,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Tyzak cobbly very fine sandy loam, in an area of Tyzak-Rock outcrop complex, 30 to 60 percent slopes, 1,060 feet east, 1,320 feet north of the southwest corner of sec. 1, T. 16 N, R. 73 W.

A—0 to 4 inches; brown (10YR 4/3) cobbly very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine granular structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine, fine, and few medium roots; slightly effervescent, calcium carbonate is disseminated and also occurs as thin pendants on undersides of rock fragments; 15 percent gravel and 15 percent cobbles; the surface is 60 percent covered with cobbles; moderately alkaline; clear smooth boundary.

Bk—4 to 13 inches; dark grayish brown (10YR 4/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; strongly effervescent, calcium carbonate as common fine concretions and thin pendants on undersides of rock fragments; 10 percent gravel, 30 percent cobbles, and 5 percent stones; moderately alkaline; abrupt irregular boundary.

R—13 inches; limestone bedrock.

The surface is 30 to 60 percent covered with limestone cobbles, channers, and flagstones. The depth to bedrock ranges from 6 to 20 inches. The Bk horizon is 40 to 80 percent rock fragments. Calcium carbonate equivalent in this horizon is 15 to 35 percent.

Vensora Series

The Vensora series consists of very deep, poorly drained soils in mountain valleys. They formed in alluvium derived from granite. Slope ranges from 0 to 3 percent.

Elevation is 7,800 to 9,500 feet, average annual precipitation is 15 to 19 inches, and average annual air temperature is 38 to 40 degrees F. Frost-free period is less than 60 days.

Typical pedon of Vensora loam, in an area of Silas, gravelly substratum-Vensora loams, 0 to 6 percent slopes, 1,800 feet north, 1,300 feet west of the southeast corner of sec. 27, T. 18 N., R. 72 W.

- A1—0 to 7 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate coarse granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common very fine continuous pores; 5 percent gravel; neutral; gradual irregular boundary.
- A2—7 to 17 inches; dark gray (10YR 4/1) loam, black (10YR 2/1) moist; few fine prominent yellowish brown (10YR 5/8) moist, mottles; moderate medium granular structure; hard, friable, slightly sticky and plastic; many fine and common medium roots; common very fine continuous pores; 5 percent gravel; neutral; gradual irregular boundary.
- Cg1—17 to 30 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; common large prominent gray (5YR 5/1) moist, mottles; massive; hard, firm, sticky and plastic; few medium roots; common very fine and fine continuous pores; 10 percent cobbles; neutral; gradual irregular boundary.
- 2Cg2—30 to 60 inches; yellowish brown (10YR 5/6) very gravelly sandy clay loam stratified with thin layers of sandy loam and loam, dark yellowish brown (10YR 4/6) moist; few thin prominent bands of gray (5YR 5/1), moist, mottles and many medium prominent strong brown (7.5YR 5/8) moist, mottles; massive; hard, firm, slightly sticky and slightly plastic; common very fine and fine continuous pores; 10 percent cobbles and 30 percent fine granitic gravel; neutral.

Reaction is neutral or slightly alkaline throughout the profile. The depth to a seasonal high water table is .5 to 2.5 feet from April through July. The A horizon has hue of 10YR or 2.5Y. This horizon is 0 to 10 percent gravel. The Cg1 horizon commonly has a texture of loam or gravelly loam, but the texture is sandy clay loam or gravelly sandy clay loam in some pedons. Hue of the Cg1 horizon is 10YR to 5Y. The 2Cg2 horizon has a dominant texture of very gravelly sandy clay loam or very gravelly sandy loam, but in many pedons thin layers of loam or sandy loam also occur. This horizon averages 35 to 55 percent rock fragments. Hue of the 2Cg2 horizon is 10YR or 7.5YR.

Wycolo Series

The Wycolo series consists of moderately deep, well drained soils on cuesta dip slopes, hills, cuesta

escarpment, structural benches, and terraces. They formed in residuum derived from interbedded sandstone and shale. Slope ranges from 2 to 20 percent. Elevation is 6,000 to 7,800 feet, average annual precipitation is 10 to 14 inches, and average annual air temperature is 40 to 45 degrees F. Frost-free period is 85 to 110 days.

Typical pedon of Wycolo fine sandy loam, in an area of Wycolo-Alcova complex, 3 to 10 percent slopes, 525 feet west, 875 feet south of the northeast corner of sec. 24, T. 13 N., R. 75 W.

- A—0 to 3 inches; light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine discontinuous pores; few very fine and fine roots; slightly alkaline; abrupt smooth boundary.
- AB—3 to 6 inches; reddish brown (5YR 5/3) sandy loam, reddish brown (5YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine discontinuous pores; few very fine and fine roots; slightly alkaline; clear smooth boundary.
- Bt—6 to 12 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few very fine discontinuous pores; few very fine and fine roots; few faint clay films on faces of ped; slightly alkaline; clear smooth boundary.
- Bk1—12 to 20 inches; pink (7.5YR 7/4) loam, brown (7.5YR 5/4) moist; weak fine prismatic structure; soft, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine discontinuous pores; strongly effervescent, calcium carbonate is disseminated and has a 17 percent calcium carbonate equivalent; moderately alkaline; gradual smooth boundary.
- Bk2—20 to 25 inches; pink (7.5YR 7/4) clay loam, light brown (7.5YR 6/4) moist; weak moderate prismatic structure; slightly hard, firm, sticky and plastic; few very fine and fine roots; common very fine discontinuous pores; violently effervescent, calcium carbonate is disseminated and also occurs as common fine soft masses, 23 percent calcium carbonate equivalent; 10 percent soft shale fragments less than 1/4 inch in diameter; moderately alkaline; clear smooth boundary.
- Bk3—25 to 36 inches; light reddish brown (5YR 6/4) clay loam, reddish brown (5YR 4/4) moist; massive; slightly hard, firm, sticky and plastic; few very fine discontinuous pores; strongly effervescent, calcium carbonate is disseminated and also occurs as few fine soft masses; 50 percent soft shale fragments that break down when wetted, less than 1/4 inch in

diameter; moderately alkaline; gradual smooth boundary.

Cr—36 inches; weakly consolidated red shale with common gypsum seams.

The depth to bedrock ranges from 20 to 40 inches. The A horizon has hue of 7.5YR or 5YR. The A and Bt

horizons have slightly alkaline or moderately alkaline reactions. The Bt horizon has a texture of sandy clay loam or loam. The Bk horizon commonly has a texture of loam, clay loam, or sandy clay loam, but is sandy loam in some pedons. Calcium carbonate equivalent is 15 to 25 percent in the Bk1 and Bk2 horizons and 10 to 20 percent in the Bk3 horizon.

Formation of the Soils

Larry C. Munn, Ph.D, University of Wyoming at Laramie, assisted in the preparation of this section.

Many of the mounds in the Laramie Basin are thought to be relict frost-churned features which developed during the height of the last Pleistocene glacial period, approximately 25,000 to 10,000 years ago. During this period, when many of Wyoming's mountain ranges were being scoured and shaped by glacial ice, the high basins of Wyoming had cold, tundra-type environments with permafrost present. Landscapes which were stable during and since this period retain features such as the mounds, developed by the intense frost action associated with permafrost.

Climate

The components of climate are precipitation, temperature, humidity, wind, and sunshine. Climate affects the type of vegetation growing in an area, the rate at which this vegetation decomposes, the rate at which rocks and minerals weather, and the depth to which physical and chemical changes extend into the soil.

The Laramie Basin has warm summers and cold winters with 10 to 14 inches of annual precipitation. The Laramie and Medicine Bow Ranges have cool summers and cold winters with 15 to 19 inches of annual precipitation. Humidity is rather low; wind and sunshine are relatively abundant. The high elevation causes rapid nightly cooling.

In the open mountain areas, the soils have darker colored surfaces compared to soils of the basin. This is caused by several factors. These mountain soils receive more precipitation, resulting in the production of more vegetation and the eventual addition of more organic matter to the soil. The temperatures are cooler, which reduces the amount of moisture lost to evaporation, increasing effective precipitation. Cooler temperatures also reduce the activity of microorganisms that decompose vegetation, resulting in more build-up of organic matter in the soil. The Diamondville and Lymanson soils formed in similar parent material that reflect the above differences due to these climatic variables.

Temperature and precipitation are involved in the freezing and thawing of soil and geologic materials. Water penetrates cracks of the geologic material and is adsorbed by soil particles. The volume is expanded when the water freezes. Simple wetting and drying of the soil also causes expansion and contraction. Amount of precipitation directly influences the depth to which salts, carbonates, and clay particles are moved in the soil. Excessive precipitation can not be held by the vegetation, so runoff causes erosion and subsequent deposition of sediment. Removal or addition of material at a rate faster than the rate of soil formation counteracts soil formation.

Humidity is closely related to precipitation in its effects on vegetation. The higher the humidity, the more favorable the conditions for the growth of most plants. Wind combined with the normally low humidity keeps the surface layer dry after late spring and early summer. Wind has modified the soils of the basin during exceptionally dry periods by removing clay and fine silt from the surface layer and concentrating sand-size particles. The effect is an abundance of sandy loam and fine sandy loam surface layers. Forelle fine sandy loam is an example of a soil with such a surface layer.

Sunshine directly and indirectly affects soil formation. Sunshine increases soil temperature, increasing the rate of chemical reaction and microbial activity. By affecting higher plants, sunshine indirectly influences soil formation.

Living Organisms

Plants and animals play an important role in the formation of soils. It is debatable whether soil could even form in the absence of these organisms. By "living organisms", we refer to all plants and animals associated with soil.

Bacteria, fungi, algae, lichens, and mosses are some of the lower forms of life in soils. Bacteria and fungi recycle nutrients back into the soil by decomposing dead plant and animal matter. Algae, lichens, and mosses influence soil formation by the excretion of weak acids that promote the decomposition of rocks.

Grasses, shrubs, and trees are some of the higher forms of plant life associated with soil formation. They

remove water and nutrients through growth. Their roots invade cracks and crevices, forcing rocks apart. When they die, their tissues give nutrients back to the soil.

Soils formed under grass-shrub vegetation generally have different characteristics than those formed under forests. The Ansel and Quander soils formed in similar parent material, but differ mainly because of vegetational effects. Soils formed under grasses, like the Quander soil, have organic matter distributed throughout the soil because of numerous, fine, readily decomposable roots. Forest soils, such as Ansel, concentrate organic matter nearer the surface and tend to be more acidic than grassland soils. Forest litter forms a weak acid that tends to leach iron and aluminum compounds downward in the soil profile.

Protozoa, nematodes, earthworms, and insects are examples of lower forms of animal life in soil. Higher forms of animal life are mice, moles, rabbits, gophers, prairie dogs, and badgers. All these organisms modify soil by feeding on plant and animal matter. As they tunnel and burrow through the soil they mix the soil horizons.

Humans also greatly affect the soil. We till the soil, irrigate the normally dry soils, and drain the wet soils. We add chemicals and materials high in organic matter to create better growing conditions for our crops. We sometimes accelerate erosion and thus produce less fertile soils. We also cover the surface with buildings and asphalt and thus interrupt the exchange of water, oxygen, and carbon dioxide between the soil and atmosphere.

Parent Material

Parent material is the unconsolidated material in which soil forms. Type of parent material affects the chemical and physical properties of the soil and the rate at which soil forms. The soils of Albany County have formed in four basic parent materials: igneous, metamorphic, and sedimentary rocks, and alluvium. These parent materials vary a great deal in composition and age.

The igneous and metamorphic materials are in the Laramie Range of the eastern one-third of the county and the Medicine Bow Range of the southwest corner. These materials have a geologic age of over a billion years, yet the mountain ranges were formed only 60 million years ago. Boyle, Hapjack, Lakehelen, Lininger, and Rogert are examples of igneous-derived soils. Soils formed from metamorphic rock are Bonjea, Bowen, and Poin.

The sedimentary formations of Albany County are primarily in the northern two-thirds of the Laramie Basin. These formations range in age from 3 million to 300 million years. Generally speaking, the formations are of younger age nearer the center of the basin. Some of the more common sedimentary formations are the Hanna, Niobrara, Steele, White River, and Wind River. These

formations are mostly brown, buff, and gray sandstones and shales. Blazon, Elkol, Rock River, Satanka, and Tisworth are examples of associated soils.

Several unique sedimentary formations are the Casper, Chugwater, and Mowry. These formations have associated soils usually not found on other formations. Casper limestone and sandstone are along the western flank of the Laramie Range. The range has very cobbly limestone soils such as Bruja and Pilotpeak. Chugwater red siltstone and shale are in the northern and southern ends of the basin. Reddish soils such as Almy, Joemre, and Rohonda are associated with these "redbeds". Mowry shale is in the northern portions of the basin. Bentonite beds and fine textured soils such as Kemmerer, Moyerson, and Pinelli are associated with this formation.

The alluvial materials range in age from about 3 million years old to the present day, and are mostly in the southern one-third of the Laramie Basin. The younger alluvium is along streams, rivers, and drainages; the older alluvium is at slightly higher elevations on older terraces. Canburn, Glendive, Grenoble, and Redrob soils are in the younger alluvium; Alcova, Bosler, Forelle, Pahlow, and Rock River soils are in the older alluvium.

Relief

Relief influences soil formation by affecting microclimate, erosion, and drainage. The four main components of relief are: slope, aspect, relative landscape position, and elevation.

Soils that form on steeper slopes are generally thinner, have fewer horizons, and support less vegetation. Steep slopes have more runoff of precipitation and sediment. The loss of moisture reduces the amount of vegetation and organic matter in the soil, slowing the rate of horizon development. The erosion tends to remove the soil material as it forms. Blazon, Moyerson, Rogert, and Thermopolis are examples of soils on steep slopes.

Aspect, especially in areas that have more than 15 inches of annual precipitation, is another important component of relief. Soils formed on north- and east-facing slopes have different characteristics than those on south- and west-facing slopes. These differences are the result of differences in soil moisture and temperature. North and east slopes have slightly lower temperatures because they receive less direct sunlight. Winter winds deposit snow on these slopes, and most of the water from the snow enters the soil. This results in more lush vegetation and thicker, more developed soil horizons. Lower soil temperature reduces the activity of the microorganisms that break down organic matter. This increases organic matter content in the soil, yielding somewhat thicker and darker surface horizons. These trends can be observed by examination of the soils on various aspects.

Relative position on the landscape is important when comparing soil formation between soils high on a slope to those lying lower. Higher-lying erosive soils, such as Blazon, Delphill, Hapjack, and Poin, lose water and soil material through runoff. Lower-lying depositional areas collect this additional water and soil. The soils are deeper, have more lush vegetation, and have thicker, darker surface layers. Alcova, Forelle, and Center Creek are examples. In areas adjacent to streams, the soils may be subject to flooding or have a high water table. Grenoble, Redrob, and Silas are examples.

Elevation affects soil formation mainly through its effect on soil temperature and precipitation. As elevation increases, soil temperature decreases and precipitation increases. In areas of low soil temperature the rate of chemical, physical, and biological soil processes are slower. Higher amounts of precipitation produce more vegetation resulting in a higher amount of organic matter in the soil. This also promotes the development of soil horizons.

Time

The length of time required for various horizons in a soil to form is dependent upon the other four soil-forming factors. For example, B horizons form more quickly in soils on less sloping sites than on steeper sites. The age of a soil is reflected in its degree of development. An old, or mature, soil is one that is in equilibrium with its setting on a stable landscape position.

Our life span is very short compared to the time necessary to form a mature soil. Although variable, it is thought that several tens of thousands of years is the amount of time required to develop a B horizon with significant accumulations of clay. Grenoble and Glendive soils are examples of young soils that formed in fairly recent alluvium. Blackhall and Thermopolis are examples of young soils formed in residuum. All these soils have thin, somewhat darkened A horizons overlying C horizons. Due to instability of the landscapes they occupy, most of these are less than several thousand years old.

Fiveoh and Luhon soils are examples of soils of intermediate age. Over a period of several thousand to several tens of thousands of years, they have developed somewhat darkened A horizons, and an upper B horizon with good structure and a color that has a higher chroma than underlying horizons. In addition, some of the calcium carbonate has been removed from the upper layers of the soil and deposited in the underlying layers. The Luhon and Fiveoh soils have a significant accumulation of calcium carbonate, and a calcic horizon has formed in these soils.

Some soils have somewhat darkened A horizons and B horizons with a significant accumulation of clay that were formed in several tens of thousands to as much as several hundreds of thousands of years. Bosler, Forelle, Hilltoppe, and Leavitt are examples. In addition, the Hilltoppe soil has a large amount of calcium carbonate which accumulated in the form of a cemented layer.

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Glossary

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

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

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

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

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

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.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

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 3.5
Low	3.5 to 5
Moderate	5 to 7.5
High	more than 7.5

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Back slopes in profile are commonly steep, are linear, and may or may not include cliff segments.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Bajada. A broad alluvial slope extending from the base of a mountain range out into a basin and formed by coalescence of separate alluvial fans.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

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

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

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

- Bottom land.** The normal flood plain of a stream, subject to flooding.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Breaks.** The steep to very steep broken land at the border of an upland summit that is dissected by ravines.
- Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- Brush management.** Use of mechanical, chemical, or biological methods to reduce or eliminate competition of woody vegetation to allow understory grasses and forbs to recover, or to make conditions favorable for reseeding. It increases production of forage, which reduces erosion. Brush management may improve the habitat for some species of wildlife.
- Butte.** An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.
- Cable yarding.** A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of a standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Canyon.** A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- Cation.** An ion carrying a positive charge of electricity.
- The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of 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.
- Cement rock.** Shaly limestone used in the manufacture of cement.
- Channery soil material.** Soil material that is 15 to 35 percent, by volume, thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches along the longest axis. Very channery soil material is 35 to 60 percent of these rock fragments, and extremely channery soil material is more than 60 percent. A single piece is called a channer.
- Chemical treatment.** Control of unwanted vegetation by use of chemicals.
- Cirque.** Semicircular, concave, bowl-like areas that have steep faces primarily resulting from glacial ice and snow abrasion.
- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter, in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay 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.
- Clay skin.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay film.
- Climax plant community.** The plant community on a given site that will be established if present environmental conditions continue to prevail and the site is properly managed.
- Coarse fragments.** Mineral or rock particles larger than 2 millimeters in diameter.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material.** Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.5 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.
- Colluvium.** Soil material, 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 constructing terraces, diversions, and other water-control measures 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.
- Compressible** (in tables). Excessive decrease in volume of soft soil under load.
- Concretions.** Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.
- Congeliturbation.** The disturbing of soil material by frost action.
- Conglomerate.** A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer material. Conglomerate is the consolidated equivalent of gravel.
- Consistence, soil.** The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:
 Loose.—Noncoherent when dry or moist; does not hold together in a mass.
 Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.
 Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.
 Plastic.—Readily deformed by moderate pressure but can be pressed into a lump; will form a “wire” when rolled between thumb and forefinger.
 Sticky.—Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.
 Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.
 Soft.—When dry, breaks into powder or individual grains under very slight pressure.
 Cemented.—Hard; little affected by moistening.
- 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 inches.
- Coppice dune.** A small dune of fine-grained soil material stabilized around shrubs or small trees.
- Corrosive.** High risk of corrosion to uncoated steel or deterioration of concrete.
- Critical area planting.** Planting vegetation, such as trees, shrubs, grasses, or legumes, on highly erodible or critically eroding areas.
- Crown.** The upper part of a tree or shrub, including the living branches and their foliage.
- Cuesta.** An asymmetric, homoclinal ridge capped by resistant rock layers of slight to moderate dip.
- Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.
- Decreasers.** The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.
- Deferred grazing.** Postponing grazing or arresting grazing for a prescribed period.
- Depth to rock** (in tables). Bedrock is too near the surface for the specified use.
- Desert pavement.** A layer of gravel or coarser fragments on a desert soil surface that was emplaced by upward movement of fragments from underlying sediment or remains after finer particles have been removed by running water or wind.
- Dip slope.** A slope of the land surface, roughly determined by and approximately conforming with the dip of underlying bedded rock.
- Drainage class** (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
 Excessively drained.—These soils have very high and high hydraulic conductivity and low water holding capacity. They are not suited to crop production unless irrigated.
 Somewhat excessively drained.—These soils have high hydraulic conductivity and low water holding capacity. Without irrigation, only a narrow range of crops can be grown and yields are low.
 Well drained.—These soils have intermediate water holding capacity. They retain optimum amounts of moisture, but they are not wet close enough to the surface or long enough during the growing season to adversely affect yields.
 Moderately well drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or yields of some field crops are adversely affected unless artificial drainage is provided. Moderately well drained soils commonly have a layer with low hydraulic conductivity, a wet

layer relatively high in the profile, additions of water by seepage, or some combination of these.

Somewhat poorly drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless artificial drainage is provided. Somewhat poorly drained soils commonly have a layer with low hydraulic conductivity, a wet layer high in the profile, additions of water through seepage, or a combination of these.

Poorly drained.—These soils commonly are so wet at or near the surface during a considerable part of the year that field crops cannot be grown under natural conditions. Poorly drained conditions are caused by a saturated zone, a layer with low hydraulic conductivity, seepage, or a combination of these.

Very poorly drained.—These soils are wet to the surface most of the time. They are wet enough to prevent the growth of important crops (except rice) unless artificially drained.

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley, generally more open and with broader bottom land than a ravine or gulch.

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.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

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 the activities of man or other animals or of a catastrophe in nature; for example, fire that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and produced by erosion or faulting. Synonym: scarp.

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

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 lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine earth. The particles of the soil that are smaller than 2 millimeters in diameter, or the sand, silt, and clay portion of the soil. (See *Texture, soil*.)

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

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders

a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (or 300 meters) and fringes a mountain range or high-plateau escarpment.

Foot slope. The inclined surface at the base of a hill.

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

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

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.

Glacial drift (geology). 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 (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial melt water.

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

Glaciofluvial deposits (geology). 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.

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

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 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

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

Hard rock. Rock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head out. To form a flower head.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well-defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case 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.

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.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some 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, the number 2 precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock 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-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

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

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

Increasesers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasesers commonly are the shorter plants and the less palatable to livestock.

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

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

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

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.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

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

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.

Knoll. A small, low, rounded hill rising above adjacent landforms.

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 (7.5 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.

Light textured soil. Sand and loamy sand.

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.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

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, and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

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. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides and considerable bare-rock surface. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color in hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 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.

Observed rooting depth. Depth to which roots have been observed to penetrate.

Open space. A relatively undeveloped green or wooded area provided mainly within an urban area to minimize feelings of congested living.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Outwash, glacial. Stratified sand and gravel produced by glaciers and carried, sorted, and deposited by glacial melt water.

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it is generally 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.

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 affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

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. For example, slope, stoniness, and thickness.

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.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Ponding. Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability or an impermeable layer near the surface, the soil may not adequately filter effluent from a waste disposal system.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. The plant community on a given site that will be established if present environmental conditions continue to prevail and the site is properly managed. (See Climax plant community.)

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. The application of fire to land under such conditions of weather, soil moisture, and time of day as presumably will result in the intensity of heat and spread required to accomplish specific forest management, wildlife, grazing, or fire hazard reduction purposes.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This increases the vigor and reproduction of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Range condition. The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

Range renovation. Practices such as furrowing on the contour, pitting, chiseling, or disking. Improves plant cover by increasing water infiltration and available moisture.

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

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 degree of acidity or alkalinity, expressed as pH values, are:

Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata mainly red in color and composed largely of sandstone and shale.

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 is generally a few inches deep and not wide enough to be an obstacle to farm machinery.
- Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.
- Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
- Root zone.** The part of the soil that can be penetrated by plant roots.
- Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts 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.
- Salty water** (in tables.) Water that is too salty for consumption by livestock.
- 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-size particles.
- Saprolite** (soil science). Unconsolidated residual material underlying the soil and grading to hard bedrock below.
- Scarification.** The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.
- 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 or of the underlying material. 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 runoff water.
- 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.
- Sinkhole.** A depression in the landscape where limestone has been dissolved.
- Site class.** A grouping of site indexes into 5 to 7 production capability levels. Each level can be represented by a site curve.
- 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 is generally silty or clayey, is slippery when wet, and is low in productivity.
- Slippage** (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.
- Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey the following slope classes are recognized:

Nearly level	0 to 3 percent
Gently sloping	3 to 8 percent
Strongly sloping	8 to 15
Moderately steep	15 to 25
Steep	25 to 45
Very steep	45 and higher

- Slope** (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.
- Slow intake** (in tables). The slow movement of water into the soil.
- 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 (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.
- Sodic (alkali) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher), or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.
- Sodicity.** The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium absorption ratio (SAR) of a saturation extract, at the ratio of Na^+ to $Ca^{++} + Mg^{++}$.
- Soft rock.** Rock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.
- Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.
- Soil depth.** The thickness of the soil mantle over bedrock; i.e., very shallow is 4 to 10 inches thick, shallow is 10 to 20 inches thick, moderately deep is 20 to 40 inches thick, deep is 40 to 60 inches thick, very deep is more than 60 inches thick.
- 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 underlying material. 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 6 to 15 inches (15 to 38 centimeters) in length if flat.
- Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.
- Strath Terrace.** Erosional surfaces cut on sedimentary bedrock and thinly mantled with Pleistocene alluvium.
- Structural Bench.** A nearly level or gently inclined erosional surface developed on resistant strata in areas where valleys are cut in alternating strong and weak horizontal sedimentary beds.
- Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).
- Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind 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.
- Substratum.** The part of the soil below the solum.
- Subsurface layer.** Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.
- Summer fallow.** The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.
- Summer wildlife habitat.** A population or portion of a population uses this habitat annually during the summer, but not during the winter.

Surface layer. In tilled soils, the part of the soil ordinarily moved in tillage ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon." In uncultivated soils, the part of the soil designated as the "A horizon."

Tail water. The water just downstream of a structure.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

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 too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Too arid (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

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.

Toxicity (in tables). Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, are in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland (geology). 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 melt water. In nonglaciated 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.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The action of uprooting and tipping over trees by the wind.

Winter wildlife habitat. A population or portion of a population uses this habitat annually only during the winter. A substantial number of animals use the habitat during this period.

Year-long wildlife habitat. A population or a substantial portion of a population uses this habitat during all seasons of the year.

Tables

TABLE 1a.--TEMPERATURE AND PRECIPITATION
(Recorded in the period 1949-93 at Laramie FAA Airport)

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
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--	
<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>Units</u>	<u>In</u>	<u>In</u>	<u>In</u>		
January-----	32.2	8.4	20.3	54	-30	1	0.47	0.16	0.72	1
February-----	35.3	11.1	23.2	57	-22	3	0.42	0.17	0.64	1
March-----	40.3	16.4	28.3	63	-13	13	0.78	0.32	1.16	2
April-----	50.8	24.3	37.5	73	0	76	0.97	0.45	1.41	2
May-----	61.5	33.4	47.4	81	17	251	1.47	0.62	2.20	4
June-----	72.9	41.9	57.4	89	27	524	1.28	0.58	1.89	3
July-----	79.8	47.7	63.7	91	36	704	1.63	0.80	2.35	4
August-----	77.9	45.9	61.9	89	33	681	1.21	0.59	1.75	3
September---	69.1	37.4	53.3	85	17	407	0.87	0.31	1.37	2
October-----	57.4	27.8	42.6	76	3	159	0.72	0.22	1.15	2
November-----	42.0	16.9	29.4	65	-15	21	0.61	0.23	0.95	2
December-----	34.1	10.6	22.3	55	-25	3	0.42	0.12	0.67	1
Yearly:										
Average---	54.4	26.8	40.6	---	---	---	---	---	---	---
Extreme---	95	-50	---	92	-34	---	---	---	---	---
Total-----	---	---	---	---	---	2,844	10.85	8.91	12.56	27

* 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 (Threshold: 40 deg. F)

TABLE 1b.--TEMPERATURE AND PRECIPITATION
(Recorded in the period 1949-93 at Centennial 1 N, 1610)

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
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--	
<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>Units</u>	<u>In</u>	<u>In</u>	<u>In</u>		
January-----	32.5	12.3	22.4	53	-24	1	1.07	0.45	1.65	3
February-----	34.9	14.1	24.5	55	-20	2	0.83	0.35	1.24	2
March-----	39.3	17.0	28.1	59	-11	6	1.09	0.50	1.59	3
April-----	49.2	24.6	36.9	69	0	59	1.21	0.62	1.73	3
May-----	59.2	32.8	46.0	75	15	201	1.64	0.92	2.28	5
June-----	70.1	40.5	55.3	85	26	438	1.44	0.60	2.15	3
July-----	77.0	46.6	61.8	88	33	634	1.67	0.69	2.50	4
August-----	75.1	44.7	59.9	86	31	567	1.29	0.72	1.79	4
September---	67.5	37.3	52.4	83	18	358	1.16	0.40	1.78	3
October-----	56.7	29.4	43.0	72	7	140	0.78	0.29	1.22	2
November---	41.6	19.6	30.6	63	-11	17	0.98	0.44	1.49	3
December---	34.0	14.1	24.1	54	-18	2	1.04	0.41	1.63	3
Yearly:										
Average---	53.1	27.7	40.4	---	---	---	---	---	---	---
Extreme---	95	-45	---	91	-28	---	---	---	---	---
Total-----	---	---	---	---	---	2,425	14.19	8.12	17.78	38

* 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 (Threshold: 40.0 deg. F)

TABLE 1c.--TEMPERATURE AND PRECIPITATION
(Recorded in the period 1949-79 at Foxpark, 3630)

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
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--	
<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>° F</u>	<u>Units</u>	<u>In</u>	<u>In</u>	<u>In</u>	
January-----	26.6	5.7	16.2	45	-33	0	1.60	0.75	2.33	4
February-----	29.3	6.1	17.7	45	-27	0	1.19	0.59	1.72	4
March-----	33.9	9.7	21.8	51	-26	0	1.50	0.75	2.16	5
April-----	42.5	18.5	30.5	61	-9	9	1.45	0.56	2.20	4
May-----	53.5	26.4	40.0	70	8	77	1.46	0.77	2.05	3
June-----	65.3	33.1	49.2	81	20	272	1.58	0.40	2.51	3
July-----	72.4	37.4	54.9	83	22	426	1.53	0.75	2.20	5
August-----	69.9	35.9	52.9	82	20	379	1.64	1.05	2.17	5
September---	62.6	29.7	46.1	77	13	203	1.23	0.60	1.86	4
October-----	51.9	22.8	37.3	67	0	48	0.95	0.30	1.55	2
November----	36.3	13.5	24.9	54	-17	1	1.05	0.41	1.72	3
December----	28.8	7.6	18.2	46	-24	0	1.15	0.50	1.78	3
Yearly:										
Average---	47.8	20.5	34.1	---	---	---	---	---	---	---
Extreme---	89	-49	---	86	-36	---	---	---	---	---
Total-----	---	---	---	---	---	1,413	16.32	11.10	19.73	45

* 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 (Threshold: 40 deg. F)

TABLE 2a.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1949-93 at Laramie FAA Airport, 5415)
 (Missing days: from 1949 to 1993: 2 in spring and 0 in fall)

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--	May 26	June 7	June 25
2 years in 10 later than--	May 20	June 1	June 19
5 years in 10 later than--	May 9	May 21	June 7
First freezing temperature in fall:			
1 year in 10 earlier than--	Sep. 14	Sep. 8	Aug. 28
2 years in 10 earlier than--	Sep. 19	Sep. 12	Sep. 2
5 years in 10 earlier than--	Sep. 30	Sep. 21	Sep. 11

TABLE 2b.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1949-93 at Centennial 1 N, 1610)
 (Missing days: from 1949 to 1993: 4 in spring and 4 in fall)

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--	May 28	June 23	July 9
2 years in 10 later than--	May 23	June 15	July 2
5 years in 10 later than--	May 13	June 1	June 18
First freezing temperature in fall:			
1 year in 10 earlier than--	Sep. 13	Sep. 2	Aug. 18
2 years in 10 earlier than--	Sep. 19	Sep. 8	Aug. 25
5 years in 10 earlier than--	Sep. 30	Sep. 19	Sep. 7

TABLE 2c.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1949-79 at Foxpark, 3630)
 (Missing days from 1949 to 1979: 4 in spring and 1 in fall)

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--	July 10	July 26	Aug. 2
2 years in 10 later than--	July 2	July 19	July 29
5 years in 10 later than--	June 17	July 7	July 22
First freezing temperature in fall:			
1 year in 10 earlier than--	Aug. 19	Aug. 4	July 31
2 years in 10 earlier than--	Aug. 27	Aug. 9	Aug. 2
5 years in 10 earlier than--	Sep. 10	Aug. 19	Aug. 7

TABLE 3a.--GROWING SEASON

(Recorded in the period 1949-93 at Laramie FAA
Airport)
(2 years from 1949-93 have 25 days or more
missing data)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	112	97	72
8 years in 10	119	104	79
5 years in 10	132	117	94
2 years in 10	145	129	109
1 year in 10	152	136	117

TABLE 3b.--GROWING SEASON

(Recorded in the period 1949-93 at Centennial
1 N, 1610)
(5 years from 1949-93 have 25 days or more
missing data)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	102	80	48
8 years in 10	110	88	58
5 years in 10	125	103	78
2 years in 10	140	118	98
1 year in 10	148	126	109

TABLE 3c.--GROWING SEASON

(Recorded in the period 1949-79 at Foxpark,
3630)
(4 years from 1949-79 have 25 days or more
missing data)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	33	15	4
8 years in 10	42	22	8
5 years in 10	59	35	17
2 years in 10	77	48	25
1 year in 10	86	55	30

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
100	Aberone gravelly sandy loam, 0 to 15 percent slopes-----	1,351	0.1
101	Abston-Bullock complex, 5 to 25 percent slopes-----	8,070	0.3
102	Alcova-Borollic Camborthids complex, 0 to 8 percent slopes-----	42,054	1.8
103	Alcova, shallow substratum-Lupinto-Dahlquist complex, 0 to 8 percent slopes-----	21,002	0.9
104	Alcova, calcareous subsoil-Rock River complex, 0 to 8 percent slopes-----	30,484	1.3
105	Almy loam, 0 to 8 percent slopes-----	13,927	0.6
106	Almy-Urban land complex, 0 to 3 percent slopes-----	480	*
107	Almy-Tismid association, 0 to 8 percent slopes-----	3,726	0.2
108	Alogia loam, 0 to 3 percent slopes-----	4,436	0.2
109	Alogia-Urban land complex, 0 to 3 percent slopes-----	450	*
110	Anchutz sandy loam, 1 to 8 percent slopes-----	27,049	1.2
111	Ansel-Granite gravelly sandy loams, 6 to 45 percent slopes-----	3,560	0.2
112	Bateson-Shirleybasin association, 1 to 15 percent slopes-----	5,817	0.3
113	Blackhall-Browtine, moist, complex, 15 to 45 percent slopes-----	3,731	0.2
114	Blackhall-Satanka-Rock outcrop complex, 5 to 20 percent slopes-----	15,308	0.7
115	Blazon-Chaperton complex, moist, 3 to 20 percent slopes-----	478	*
116	Blazon-Delphill complex, 20 to 45 percent slopes-----	15,690	0.7
117	Bonjea-Chugcreek-Rock outcrop complex, 3 to 15 percent slopes-----	44,836	1.9
118	Bonjea-Rock outcrop-Chugcreek complex, 15 to 40 percent slopes-----	53,168	2.2
119	Bosler fine sandy loam, wet substratum, 0 to 3 percent slopes-----	10,455	0.5
120	Bosler-Borollic Camborthids complex, 0 to 8 percent slopes-----	23,488	1.0
121	Bosler, wet substratum-Urban land complex, 0 to 3 percent slopes-----	265	*
122	Boyle-Alderon-Cathedral gravelly sandy loams, 5 to 25 percent slopes-----	7,774	0.3
123	Boyle-Boyle, thin solum, gravelly sandy loams, 3 to 6 percent slopes-----	6,367	0.3
124	Boyle-Rock outcrop complex, 5 to 25 percent slopes-----	66,548	2.8
125	Boyle-Lininger association, 1 to 15 percent slopes-----	55,590	2.3
126	Browtine very gravelly fine sandy loam, 0 to 8 percent slopes-----	14,562	0.6
127	Browtine-Hilltoppe very gravelly sandy loams, 0 to 8 percent slopes-----	5,233	0.2
128	Bruja-Canwall-Telecan association, 3 to 60 percent slopes-----	9,977	0.4
129	Buffork-Bucklon sandy loams, 15 to 60 percent slopes-----	4,435	0.2
130	Byrnie-Rock outcrop complex, 10 to 50 percent slopes-----	12,191	0.5
131	Calciborolls, 0 to 3 percent slopes-----	1,186	0.1
132	Canburn loam, 1 to 4 percent slopes-----	3,619	0.2
133	Cantle loam, 0 to 3 percent slopes-----	10,336	0.4
134	Carbol-Rock outcrop complex, 25 to 50 percent slopes-----	4,910	0.2
135	Carmody-Edlin fine sandy loams, 15 to 45 percent slopes-----	1,391	0.1
136	Carmody-Ryan Park fine sandy loams, 6 to 15 percent slopes-----	11,765	0.5
137	Cathedral-Spinekop-Rock outcrop complex, 0 to 40 percent slopes-----	16,997	0.7
138	Center Creek loam, 0 to 3 percent slopes-----	5,285	0.2
139	Chaperton, moderately saline-Blazon complex, 8 to 20 percent slopes-----	25,509	1.1
140	Chaperton-Poposhia complex, 3 to 30 percent slopes-----	4,891	0.2
141	Cheadle-Passcreek, cobbly subsoil-Rock outcrop complex, 5 to 25 percent slopes-----	15,132	0.7
142	Cheadle-Rock outcrop-Miracle complex, 5 to 40 percent slopes-----	7,162	0.3
143	Cryaquolls, 1 to 9 percent slopes-----	4,397	0.2
144	Cryoborolls, 6 to 30 percent slopes-----	3,041	0.1
145	Cushool-Cutback complex, 2 to 10 percent slopes-----	21,649	0.9
146	Cushool-Diamondville fine sandy loams, 0 to 3 percent slopes-----	6,959	0.3
147	Cutback-Pinelli complex, 1 to 25 percent slopes-----	12,701	0.5
148	Dahlquist-Rawlins-Browtine complex, moist, 3 to 15 percent slopes-----	22,687	1.0
149	Dalecreek-Kovich complex, 0 to 9 percent slopes-----	22,205	1.0
150	Delphill-Blazon complex, 3 to 20 percent slopes-----	15,477	0.7
151	Diamondville-Cushool complex, 3 to 15 percent slopes-----	68,302	2.9
152	Diamonkit-Stylite sandy loams, 3 to 15 percent slopes-----	4,822	0.2
153	Elkol clay loam, 0 to 8 percent slopes-----	9,739	0.4
154	Elkol-Gerdrum Family complex, 1 to 8 percent slopes-----	30,583	1.3
155	Elkol-Gerdrum Family, overflow complex, 0 to 3 percent slopes-----	12,564	0.5
156	Evanston fine sandy loam, 0 to 6 percent slopes-----	836	*
157	Evanston-Bonjea complex, 5 to 40 percent slopes-----	5,046	0.2
158	Fiveoh-Fiveoh, cobbly substratum-Ryan Park complex, 1 to 8 percent slopes-----	14,912	0.6
159	Fiveoh, cobbly substratum-Fiveoh-Urban land complex, 1 to 5 percent slopes-----	350	*
160	Fiveoh, cobbly substratum-Joemre fine sandy loams, 1 to 5 percent slopes-----	18,525	0.8

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
161	Folavar very gravelly sandy loam, 0 to 3 percent slopes-----	2,729	0.1
162	Folavar-Borollic Camborthids complex, 0 to 3 percent slopes-----	8,651	0.4
163	Forelle loam, 0 to 6 percent slopes-----	48,383	2.1
164	Forelle-Urban land complex, 0 to 3 percent slopes-----	290	*
165	Forelle-Diamondville association, 3 to 15 percent slopes-----	65,337	2.7
166	Glendive-Redrob-Grenoble complex, 0 to 3 percent slopes-----	14,563	0.6
167	Grenoble-Gerrard complex, 0 to 3 percent slopes-----	6,668	0.3
168	Greyback very cobbly sandy loam, 1 to 6 percent slopes-----	4,043	0.2
169	Gypla loam, 0 to 3 percent slopes-----	3,195	0.1
170	Gypla-Urban land complex, 0 to 1 percent slope-----	850	*
171	Hanson-Quander complex, 3 to 15 percent slopes-----	8,701	0.4
172	Hapjack-Rogert-Amesmont complex, 3 to 25 percent slopes-----	90,133	3.8
173	Ipson-Evanston complex, 6 to 30 percent slopes-----	2,195	0.1
174	Joemre fine sandy loam, 3 to 6 percent slopes-----	21,088	0.9
175	Joemre fine sandy loam, 6 to 15 percent slopes-----	806	*
176	Kezar-Carbol-Rock outcrop complex, 5 to 25 percent slopes-----	35,051	1.5
177	Kildor-Rock outcrop association, 5 to 50 percent slopes-----	2,314	0.1
178	Kiltabar-Tismid complex, 0 to 3 percent slopes-----	23,095	1.0
179	Lakehelen-Redfeather-Amesmont complex, 5 to 20 percent slopes-----	4,693	0.2
180	Leavitt gravelly fine sandy loam, 1 to 8 percent slopes-----	2,666	0.1
181	Leavitt-Granile complex, 3 to 45 percent slopes-----	1,369	0.1
182	Leavitt-Hanson complex, 3 to 30 percent slopes-----	1,058	*
183	Leavitt-Quander complex, 15 to 45 percent slopes-----	8,611	0.4
184	Luhon loam, 1 to 5 percent slopes-----	17,729	0.8
185	Luvar-Stylite-Diamonkit complex, 1 to 8 percent slopes-----	22,097	1.0
186	Lymanson loam-Lymanson cobbly loam complex, 6 to 20 percent slopes-----	5,225	0.2
187	Manada sandy loam, 0 to 6 percent slopes-----	8,056	0.3
188	McFadden gravelly fine sandy loam, 1 to 6 percent slopes-----	8,517	0.4
189	Miracle-Cheadle association, 5 to 20 percent slopes-----	8,119	0.3
190	Moyerson-Kemmerer complex, 3 to 20 percent slopes-----	13,426	0.6
191	Nathale-Passcreek, cobbly subsoil-Rock outcrop complex, 10 to 60 percent slopes-----	16,118	0.7
192	Pahlow gravelly sandy loam, 0 to 3 percent slopes-----	22,139	1.0
193	Pilotpeak-Canwall complex, 3 to 20 percent slopes-----	41,031	1.8
194	Pinelli clay loam, 0 to 6 percent slopes-----	10,623	0.5
195	Pits, mine-----	1,382	0.1
196	Poin-Bowen-Rock outcrop complex, 10 to 50 percent slopes-----	3,239	0.1
197	Poposhia-Blazon complex, 3 to 15 percent slopes-----	3,715	0.2
198	Poposhia-Forelle complex, 1 to 8 percent slopes-----	64,623	2.7
199	Poposhia-Chaperton association, 6 to 12 percent slopes-----	37,212	1.6
200	Rainbolt-Morset association, 3 to 25 percent slopes-----	8,167	0.4
201	Redfeather-Lakehelen-Rogert complex, 20 to 50 percent slopes-----	5,771	0.2
202	Redrob loam, 0 to 2 percent slopes-----	935	*
203	Redrob, frequently flooded-Grenoble-Redrob complex, 0 to 3 percent slopes-----	12,529	0.5
204	Redrob, frequently flooded-Redrob loams, 0 to 3 percent slopes-----	16,401	0.7
205	Redrob, frequently flooded-Redrob-Urban land complex, 0 to 3 percent slopes-----	635	*
206	Rentsac-Wycolo complex, 2 to 15 percent slopes-----	5,629	0.2
207	Renvers-Chalkhill complex, 1 to 15 percent slopes-----	4,544	0.2
208	Rinton-Passcreek, cobbly subsoil-Miracle complex, 10 to 60 percent slopes-----	3,865	0.2
209	Riverwash-----	395	*
210	Rock outcrop-Bonjea complex, 40 to 60 percent slopes-----	47,207	2.0
211	Rock outcrop-Bruja-Byrnie complex, 30 to 70 percent slopes-----	2,376	0.1
212	Rock outcrop-Cathedral complex, 20 to 40 percent slopes-----	68,807	2.9
213	Rock outcrop-Cathedral-Alderon complex, 25 to 50 percent slopes-----	38,914	1.7
214	Rock outcrop-Pilotpeak complex, 3 to 25 percent slopes-----	11,073	0.5
215	Rock outcrop-Rogert complex, 25 to 99 percent slopes-----	27,164	1.2
216	Rock River sandy loam, 2 to 6 percent slopes-----	69,164	2.9
217	Rock River loam, 1 to 8 percent slopes, bouldery-----	6,606	0.3
218	Rock River-Urban land complex, 0 to 6 percent slopes-----	350	*
219	Rogert-Lakehelen-Rock outcrop complex, 8 to 40 percent slopes-----	15,907	0.7
220	Rogert-Rock outcrop-Amesmont complex, 5 to 25 percent slopes-----	70,260	2.9
221	Rohonda fine sandy loam, 3 to 6 percent slopes-----	4,064	0.2
222	Rohonda-Tieside complex, 3 to 10 percent slopes-----	19,575	0.8

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
223	Rohonda-Cheadle-Rock outcrop association, 6 to 45 percent slopes-----	2,887	0.1
224	Ryark loamy sand, 1 to 6 percent slopes-----	1,822	0.1
225	Shirleybasin-Twocabin-Lahtida complex, 0 to 15 percent slopes-----	13,745	0.6
226	Silas loam, 1 to 6 percent slopes-----	956	*
227	Silas, gravelly substratum-Vensora loams, 0 to 6 percent slopes-----	17,815	0.8
228	Stunner sandy loam, 2 to 8 percent slopes-----	37,294	1.6
229	Stunner-Borollic Camborthids complex, 2 to 5 percent slopes-----	21,519	0.9
230	Stunner-Tisworth-Blazon complex, 1 to 6 percent slopes-----	11,766	0.5
231	Stunner-Urban land complex, 0 to 6 percent slopes-----	185	*
232	Teeler very gravelly sandy loam, 5 to 40 percent slopes-----	1,555	0.1
233	Thiel-Lymanson-Leavitt complex, 5 to 20 percent slopes-----	6,730	0.3
234	Tieside-Pilotpeak-Rock outcrop complex, 3 to 10 percent slopes-----	21,636	0.9
235	Tismid sandy loam, 0 to 5 percent slopes-----	3,119	0.1
236	Tisworth-Gerdrum Family loams, 1 to 8 percent slopes-----	26,058	1.1
237	Tisworth-Gerdrum Family complex, 0 to 6 percent slopes-----	73,514	3.1
238	Tule-Chalkville loams, 0 to 15 percent slopes-----	6,859	0.3
239	Tyzak-Rock outcrop complex, 30 to 60 percent slopes-----	2,085	0.1
240	Wycolo sandy loam, 3 to 6 percent slopes-----	4,467	0.2
241	Wycolo-Alcova complex, 3 to 10 percent slopes-----	30,466	1.3
242	Wycolo-Alcova-Urban land complex, 3 to 6 percent slopes-----	570	*
243	Wycolo-Tieside sandy loams, 3 to 10 percent slopes-----	22,258	1.0
244	Wycolo-Thermopolis-Rock outcrop complex, 10 to 50 percent slopes-----	10,781	0.5
W	Water-----	26,846	1.2
	Total-----	2,320,491	100.0

* Less than 0.05 percent.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE

(Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. Yields are those that can be expected 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)

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
100----- Aberone	IVe	---	---	---	---	---
101: Abston-----	VIe	---	---	---	---	---
Bullock-----	VIe	---	---	---	---	---
102: Alcova-----	IVe	---	---	---	---	---
Borollic Camborthids.	VIIs					
103: Alcova, shallow substratum--	IVe	---	---	---	---	---
Lupinto-----	IVe	---	---	---	---	---
Dahlquist----	VIIs	---	---	---	---	---
104: Alcova, calcareous subsoil-----	IVe	---	---	---	---	---
Rock River---	IVe	---	---	---	---	---
105----- Almy	IVe	IVe	---	3.5	---	2.0
106*: Almy-----	IVc	---	---	---	---	---
Urban land.						
107*: Almy-----	IVc	---	---	---	---	---
Tismid-----	VIIs	---	---	---	---	---
108----- Alogia	IVs	IVs	---	2.5	---	2.0
109*: Alogia-----	IVs	---	---	---	---	---
Urban land.						

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
110----- Anchutz	IVe	---	---	---	---	---
111: Ansel-----	VIIe	---	---	---	---	---
Granile-----	VIIe	---	---	---	---	---
112*: Bateson-----	IVe	---	---	---	---	---
Shirleybasin-	IVe	---	---	---	---	---
113: Blackhall----	VIIe	---	---	---	---	---
Browtine, moist-----	VIIe	---	---	---	---	---
114*: Blackhall----	VIIe	---	---	---	---	---
Satanka-----	VIe	---	---	---	---	---
Rock outcrop.	VIII					
115: Blazon-----	VIIe	---	---	---	---	---
Chaperton----	VIe	---	---	---	---	---
116: Blazon-----	VIIe	---	---	---	---	---
Delphill-----	VIIe	---	---	---	---	---
117*: Bonjea-----	VIIIs	---	---	---	---	---
Chugcreek----	IVe	---	---	---	---	---
Rock outcrop.	VIIIIs					
118: Bonjea-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
Chugcreek----	VIIe	---	---	---	---	---
119----- Bosler, wet substratum	IVw	IVw	---	3.5	---	2.0
120: Bosler-----	IVe	---	---	---	---	---
Borollic Camborthids.	VIIs					

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
121*: Bosler, wet substratum--	IVw	---	---	---	---	---
Urban land.						
122: Boyle-----	VIIe	---	---	---	---	---
Alderon-----	VIe	---	---	---	---	---
Cathedral----	VIIe	---	---	---	---	---
123: Boyle-----	VIIIs	---	---	---	---	---
Boyle, thin solum-----	VIIIs	---	---	---	---	---
124*: Boyle-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
125*: Boyle-----	VIIIs	---	---	---	---	---
Lininger-----	VIIs	---	---	---	---	---
126-----	VIIs	---	---	---	---	---
Browtime						
127: Browtime-----	VIIs	VIIs	---	---	---	2.0
Hilltoppe----	VIIIs	VIIIs	---	---	---	1
128*: Bruja-----	VIIe	---	---	---	---	---
Canwall-----	VIe	---	---	---	---	---
Telecan-----	IVe	---	---	---	---	---
129: Buffork-----	VIIe	---	---	---	---	---
Bucklon-----	VIIe	---	---	---	---	---
130*: Byrnie-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
131. Calciborolls	IVe	IVe	---	---	---	2.5
132-----	Vw	Vw	---	3	---	2
Canburn						

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
133----- Cantle	VIe	VIe	---	---	---	2
134*: Carbol-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIe					
135: Carmody-----	VIIe	---	---	---	---	---
Edlin-----	VIIe	---	---	---	---	---
136: Carmody-----	IVe	---	---	---	---	---
Ryan Park----	IVe	---	---	---	---	---
137*: Cathedral----	VIIe	---	---	---	---	---
Spinekop-----	IVe	---	---	---	---	---
Rock outcrop.	VIIIe					
138----- Center Creek	IVw	IVw	---	---	---	3.0
139: Chaperton, moderately saline-----	VIe	---	---	---	---	---
Blazon-----	VIIe	---	---	---	---	---
140: Chaperton----	VIe	---	---	---	---	---
Poposhia-----	VIe	---	---	---	---	---
141*: Cheadle-----	VIIe	---	---	---	---	---
Passcreek, cobble subsoil-----	VIe	---	---	---	---	---
Rock outcrop.	VIIIe					
142: Cheadle-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIe					
Miracle-----	VIIe	---	---	---	---	---
143. Cryaquolls	VIw					

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
144. Cryoborolls	VIe					
145: Cushool-----	IVe	---	---	---	---	---
Cutback-----	IVe	---	---	---	---	---
146: Cushool-----	IVs	---	---	---	---	---
Diamondville-	IVs	---	---	---	---	---
147: Cutback-----	VIe	---	---	---	---	---
Pinelli-----	IVe	---	---	---	---	---
148: Dahlquist----	VI s	VI s	---	---	---	2.0
Rawlins-----	IVe	IVe	---	---	---	3.0
Browtine-----	VI s	VI s	---	---	---	2.0
149: Dalecreek----	IVw	IVw	---	---	---	3.0
Kovich-----	Vw	Vw	---	---	---	2.0
150: Delphill-----	VIe	---	---	---	---	---
Blazon-----	VIIe	---	---	---	---	---
151: Diamondville-	IVe	---	---	---	---	---
Cushool-----	IVe	---	---	---	---	---
152: Diamonkit----	IVe	---	---	---	---	---
Stylite-----	IVe	---	---	---	---	---
153-----	VI s	---	---	---	---	---
Elkol						
154*, 155*: Elkol-----	VI s	---	---	---	---	---
Gerdrum family-----	VI s	---	---	---	---	---
156-----	IVe	---	---	---	---	---
Evanston						
157: Evanston-----	VIe	---	---	---	---	---

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
157: Bonjea-----	VIIe	---	---	---	---	---
158: Fiveoh-----	IVe	---	---	---	---	---
Fiveoh, cobble substratum--	IVe	---	---	---	---	---
Ryan Park----	IVe	---	---	---	---	---
159*: Fiveoh, cobble substratum--	IVe	---	---	---	---	---
Fiveoh-----	IVe	---	---	---	---	---
Urban land.						
160: Fiveoh, cobble substratum--	IVe	---	---	---	---	---
Joemre-----	IVe	---	---	---	---	---
161----- Folavar	VIs	VIs	---	---	---	2
162: Folavar-----	VIs	VIs	---	---	---	2
Borollic Camborthids.	VIs	VIs				2
163----- Forelle	IVe					
164*: Forelle-----	IVc	---	---	---	---	---
Urban land.						
165*: Forelle-----	IVe	---	---	---	---	---
Diamondville-	IVe	---	---	---	---	---
166: Glendive-----	IVw	IVw	---	3.5	---	3.0
Redrob-----	IVw	IVw	---	3.0	---	2.0
Grenoble-----	VIs	VIs	---	2.5	---	1.5
167: Grenoble-----	VIs	VIs	---	2.5	---	1.5

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
167: Gerrard-----	VIw	VIw	---	1	---	1.0
168----- Greyback	VI s	VI s	---	---	---	1.5
169----- Gypla	VII s	---	---	---	---	---
170*: Gypla-----	VII s	---	---	---	---	---
Urban land.						
171: Hanson-----	VI e	---	---	---	---	---
Quander-----	VI e	---	---	---	---	---
172: Hapjack-----	VII e	---	---	---	---	---
Rogert-----	VII e	---	---	---	---	---
Amesmont-----	VI e	---	---	---	---	---
173: Ipson-----	VI e	---	---	---	---	---
Evanston-----	VI e	---	---	---	---	---
174, 175----- Joemre	IV e	---	---	---	---	---
176*: Kezar-----	VI e	---	---	---	---	---
Carbol-----	VII e	---	---	---	---	---
Rock outcrop.	VIII s					
177*: Kilder-----	VII e	---	---	---	---	---
Rock outcrop.	VIII s					
178: Kiltabar-----	VII s	---	---	---	---	---
Tismid-----	VI s	---	---	---	---	---
179: Lakehelen----	VI e	---	---	---	---	---
Redfeather---	VII e	---	---	---	---	---
Amesmont-----	VI e	---	---	---	---	---

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
180----- Leavitt	VIe	---	---	---	---	---
181: Leavitt-----	VIIe	---	---	---	---	---
Granile-----	VIIe	---	---	---	---	---
182: Leavitt-----	VIe	---	---	---	---	---
Hanson-----	VIe	---	---	---	---	---
183: Leavitt-----	VIIe	---	---	---	---	---
Quander-----	VIIe	---	---	---	---	---
184----- Luhon	IVe	---	---	---	---	---
185: Luvar-----	IVe	---	---	---	---	---
Stylite-----	IVe	---	---	---	---	---
Diamonkit----	IVe	---	---	---	---	---
186: Lymanson loam	VIe	---	---	---	---	---
Lymanson cobble loam-	VIe	---	---	---	---	---
187----- Manada	IVw	IVw	---	---	---	2
188----- McFadden	IVe	---	---	---	---	---
189*: Miracle-----	VIe	---	---	---	---	---
Cheadle-----	VIIe	---	---	---	---	---
190: Moyerson-----	VIIe	---	---	---	---	---
Kemmerer-----	VIe	---	---	---	---	---
191*: Nathale-----	VIIe	---	---	---	---	---
Passcreek, cobble subsoil-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIe					

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
192----- Pahlow	VIIs	VIIs	---	---	---	1.5
193: Pilotpeak----	VIIe	---	---	---	---	---
Canwall-----	VIe	---	---	---	---	---
194----- Pinelli	IVe	---	---	---	---	---
195*. Pits, mine	VIIIIs					
196*: Poin-----	VIIe	---	---	---	---	---
Bowen-----	VIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
197: Poposhia----	IVe	---	---	---	---	---
Blazon-----	VIIIs	---	---	---	---	---
198: Poposhia----	IVe	---	---	---	---	---
Forelle-----	IVe	---	---	---	---	---
199*: Poposhia----	IVe	---	---	---	---	---
Chaperton----	IVe	---	---	---	---	---
200*: Rainbolt----	VIe	---	---	---	---	---
Morset-----	VIe	---	---	---	---	---
201: Redfeather---	VIIe	---	---	---	---	---
Lakehelen---	VIIe	---	---	---	---	---
Rogert-----	VIIe	---	---	---	---	---
202----- Redrob	IVw	IVw	---	3	---	2
203: Redrob, frequently flooded----	VIw	VIw	---	3	---	2
Grenoble-----	VIIs	VIIs	---	2.5	---	1.5
Redrob-----	IVw	IVw	---	3	---	2

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
204:						
Redrob, frequently flooded-----	VIw	VIw	---	3	---	2
Redrob-----	IVw	IVw	---	3	---	2
205*:						
Redrob, frequently flooded-----	VIw	---	---	---	---	---
Redrob-----	IVw	---	---	---	---	---
Urban land.						
206:						
Rentsac-----	VIIIs	---	---	---	---	---
Wycolo-----	IVe	---	---	---	---	---
207:						
Renvers-----	VIIIs	---	---	---	---	---
Chalkhill----	VIIIs	---	---	---	---	---
208:						
Rimton-----	VIIe	---	---	---	---	---
Passcreek, cobble subsoil-----	VIIe	---	---	---	---	---
Miracle-----	VIIe	---	---	---	---	---
209*.						
Riverwash	VIII					
210:						
Rock outcrop.	VIIIIs					
Bonjea-----	VIIe	---	---	---	---	---
211:						
Rock outcrop.	VIIIIs					
Bruja-----	VIIe	---	---	---	---	---
Byrnie-----	VIIe	---	---	---	---	---
212:						
Rock outcrop.	VIIIIs					
Cathedral----	VIIe	---	---	---	---	---
213:						
Rock outcrop.	VIIIIs					
Cathedral----	VIIe	---	---	---	---	---

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
213: Alderon-----	VIIe	---	---	---	---	---
214: Rock outcrop.	VIIIIs					
Pilotpeak----	VIIe	---	---	---	---	---
215: Rock outcrop.	VIIIIs					
Rogert-----	VIIe	---	---	---	---	---
216----- Rock River	IVe	IVe	---	---	---	3.0
217----- Rock River	IVe	---	---	---	---	---
218*: Rock River---	IVe	---	---	---	---	---
Urban land.						
219*: Rogert-----	VIIe	---	---	---	---	---
Lakehelen----	VIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
220: Rogert-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
Amesmont----	VIe	---	---	---	---	---
221----- Rohonda	IVe	---	---	---	---	---
222: Rohonda-----	IVe	---	---	---	---	---
Tieside-----	VIIIs	---	---	---	---	---
223*: Rohonda-----	IVe	---	---	---	---	---
Cheadle-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
224----- Ryark	IVe	---	---	---	---	---
225: Shirleybasin-	IVe	---	---	---	---	---

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
225:						
Twocabin-----	IVe	---	---	---	---	---
Lahtida-----	IVe	---	---	---	---	---
226-----	VIw	VIw	---	---	---	3.0
Silas						
227:						
Silas, gravelly substratum--	VIw	VIw	---	---	---	3.0
Vensora-----	VIw	VIw	---	---	---	2.5
228-----	IVe	---	---	---	---	---
Stunner						
229:						
Stunner-----	IVe	---	---	---	---	---
Borollic Camborthids.	IVe					
230:						
Stunner-----	IVe	---	---	---	---	---
Tisworth-----	VIS	---	---	---	---	---
Blazon-----	VIIIs	---	---	---	---	---
231*:						
Stunner-----	IVe	---	---	---	---	---
Urban land.						
232-----	VIe	---	---	---	---	---
Teeler						
233:						
Thiel-----	VIe	---	---	---	---	---
Lymanson-----	VIe	---	---	---	---	---
Leavitt-----	VIe	---	---	---	---	---
234*:						
Tieside-----	VIIIs	---	---	---	---	---
Pilotpeak----	VIIIs	---	---	---	---	---
Rock outcrop.	VIIIIs					
235-----	VIS	---	---	---	---	---
Tismid						
236*, 237*:						
Tisworth-----	VIS	---	---	---	---	---

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS
PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability		Alfalfa hay		Grass hay	
	N	I	N	I	N	I
			Tons	Tons	Tons	Tons
236*, 237*: Gerdrum family-----	VIIs	---	---	---	---	---
238: Tule-----	VIIIs	---	---	---	---	---
Chalkville---	VIIIs	---	---	---	---	---
239*: Tyzak-----	VIIe	---	---	---	---	---
Rock outcrop.	VIIIIs					
240----- Wycolo	IVe	---	---	---	---	---
241: Wycolo-----	IVe	---	---	---	---	---
Alcova-----	IVe	---	---	---	---	---
242*: Wycolo-----	IVe	---	---	---	---	---
Alcova-----	IVe	---	---	---	---	---
Urban land.						
243: Wycolo-----	IVe	---	---	---	---	---
Tieside-----	VIIIs	---	---	---	---	---
244*: Wycolo-----	VIe	---	---	---	---	---
Thermopolis--	VIIe	---	---	---	---	---
Rock outcrop.	VIIIIs					

* See description of the map unit for composition
and behavior characteristics of the map unit.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL

(Absence of an entry indicates that the map unit component was not rated)

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
100----- Aberone	Severe: poor filter.	Moderate: runoff.
101----- Abston	*Slight-----	Severe: runoff.
Bullock-----	*Slight-----	Severe: runoff.
102: Alcova----- Borollic Camborthids.	Moderate: low adsorption.	Moderate: runoff.
103: Alcova, shallow substratum----- Lupinto-----	Moderate: low adsorption.	Moderate: runoff.
Dahlquist-----	Moderate: low adsorption, poor filter.	Slight.
104: Alcova, calcareous subsoil----- Rock River-----	Severe: poor filter.	Slight.
105----- Almy	Moderate: low adsorption, poor filter.	Moderate: runoff.
106: Almy----- Urban land.	Moderate: low adsorption.	Slight.
107----- Almy	Moderate: low adsorption.	Slight.
Tismid-----	Moderate: low adsorption.	Moderate: runoff.
108----- Alogia	Slight-----	Moderate: runoff.
109: Alogia----- Urban land.	Moderate: wetness.	Slight.
	Moderate: wetness.	Slight.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
110:----- Anchutz	Moderate: low adsorption.	Moderate: runoff.
111: Ansel-----	Slight-----	Severe: runoff.
Granile-----	Moderate: low adsorption.	Severe: runoff.
112: Bateson-----	Moderate: low adsorption, poor filter.	Moderate: runoff.
Shirleybasin-----	Moderate: low adsorption.	Moderate: runoff.
113: Blackhall-----	Slight*-----	Severe: runoff.
Browtine, moist-----	Slight-----	Severe: runoff.
114: Blackhall-----	Slight*-----	Severe: runoff.
Satanka-----	Slight*-----	Moderate: runoff.
Rock outcrop.		
115: Blazon-----	Slight*-----	Severe: runoff.
Chaperton-----	Moderate*: low adsorption.	Moderate: runoff.
116: Blazon-----	Slight*-----	Severe: runoff.
Delphill-----	Slight*-----	Severe: runoff.
117: Bonjea-----	Slight*-----	Severe: runoff.
Chugcreek-----	Slight*-----	Moderate: runoff.
Rock outcrop.		
118: Bonjea-----	Slight*-----	Severe: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
118: Rock outcrop.		
Chugcreek-----	Slight*-----	Severe: runoff.
119: Bosler, wet substratum-----	Severe: wetness, poor filter.	Slight.
120: Bosler-----	Moderate: poor filter.	Moderate: runoff.
Borollic Camborthids.		
121: Bosler, wet substratum-----	Severe: wetness, poor filter.	Slight.
Urban land.		
122: Boyle-----	Slight*-----	Severe: runoff.
Alderon-----	Slight*-----	Severe: runoff.
Cathedral-----	Severe*: poor filter.	Severe: runoff.
123: Boyle-----	Slight*-----	Moderate: runoff.
Boyle, thin solum-----	Slight*-----	Moderate: runoff.
124: Boyle-----	Slight*-----	Severe: runoff.
Rock outcrop.		
125: Boyle-----	Slight*-----	Moderate: runoff.
Lininger-----	Moderate: low adsorption.	Moderate: runoff.
126-----	Moderate: low adsorption.	Slight.
Browtine		
127: Browtine-----	Slight-----	Slight.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
127: Hilltoppe-----	Slight-----	Moderate: runoff.
128: Bruja-----	Slight*-----	Severe: runoff.
Canwall-----	Slight*-----	Severe: runoff.
Telecan-----	Slight-----	Moderate: runoff.
129: Buffork-----	Slight*-----	Severe: runoff.
Bucklon-----	Slight*-----	Severe: runoff.
130: Byrnie-----	Slight*-----	Severe: runoff.
Rock outcrop. Alcova-----	Slight-----	Moderate: runoff.
131. Calciborolls		
132----- Canburn	Severe: wetness.	Severe: runoff.
133----- Cantle	Severe: wetness.	Severe: flooding.
134: Carbol-----	Moderate: seepage.	Severe: runoff.
Rock outcrop.		
135: Carmody-----	Slight*-----	Severe: runoff.
Edlin-----	Slight-----	Severe: runoff.
136: Carmody-----	Moderate*: low adsorption.	Moderate: runoff.
Ryan Park-----	Moderate: low adsorption.	Moderate: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
137: Cathedral-----	Severe*: poor filter.	Severe: runoff.
Spinekop----- Rock outcrop.	Moderate: low adsorption.	Moderate: runoff.
138----- Center Creek	Moderate: wetness.	Slight.
139: Chaperton, moderately saline-----	Slight*-----	Moderate: runoff.
Blazon-----	Slight*-----	Severe: runoff.
140: Chaperton-----	Slight*-----	Severe: runoff.
Poposhia-----	Slight-----	Severe: runoff.
141: Cheadle-----	Slight*-----	Severe: runoff.
Passcreek, cobbly subsoil----- Rock outcrop.	Slight*-----	Severe: runoff.
142: Cheadle-----	Slight*-----	Severe: runoff.
Rock outcrop. Miracle-----	Slight-----	Severe: runoff.
143----- Cryaquolls	Severe: wetness, poor filter.	Severe: flooding.
144. Cryoborolls		
145: Cusholl-----	Moderate*: low adsorption.	Moderate: runoff.
Cutback-----	Moderate*: low adsorption.	Moderate: runoff.

See footnotes at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
146: Cushool-----	Moderate*: low adsorption.	Slight.
Diamondville-----	Slight*-----	Slight.
147: Cutback-----	Severe*: poor filter.	Moderate: runoff.
Pinelli-----	Moderate: low adsorption.	Moderate: runoff.
148: Dahlquist-----	Severe: poor filter.	Slight.
Rawlins-----	Moderate: low adsorption.	Moderate: runoff.
Browline-----	Slight-----	Moderate: runoff.
149: Dalecreek-----	Moderate: wetness.	Moderate: runoff.
Kovich-----	Severe: wetness.	Moderate: flooding.
150: Delphill-----	Slight*-----	Moderate: runoff.
Blazon-----	Slight*-----	Severe: runoff.
151: Diamondville-----	Slight*-----	Moderate: runoff.
Cushool-----	Moderate: low adsorption.	Moderate: runoff.
152: Diamonkit-----	Slight-----	Moderate: runoff.
Stylite-----	Slight-----	Moderate: runoff.
153----- Elkol	Slight-----	Severe: runoff.
154: Elkol-----	Slight-----	Severe: runoff.
Gerdrum Family-----	Slight-----	Severe: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
155: Elkol-----	Slight-----	Slight.
Gerdrum Family-----	Moderate: wetness.	Slight.
156----- Evanston	Slight-----	Moderate: runoff.
157: Evanston-----	Slight-----	Severe: runoff.
Bonjea-----	Slight*-----	Severe: runoff.
158: Fiveoh-----	Slight-----	Moderate: runoff.
Fiveoh, cobbly substratum-----	Moderate: low adsorption, poor filter.	Moderate: runoff.
Ryan Park-----	Moderate: low adsorption.	Moderate: runoff.
159: Fiveoh, cobbly substratum-----	Moderate: low adsorption, poor filter.	Moderate: runoff.
Fiveoh-----	Slight-----	Moderate: runoff.
Urban land.		
160: Fiveoh, cobbly substratum-----	Moderate: low adsorption, poor filter.	Moderate: runoff.
Joemre-----	Slight-----	Moderate: runoff.
161----- Folavar	Severe: wetness, poor filter.	Slight.
162: Folavar-----	Severe: wetness, poor filter.	Slight.
Borollic Camborthids.		
163----- Forelle	Moderate: low adsorption.	Moderate: runoff.
164: Forelle-----	Slight-----	Slight.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
164: Urban land.		
165: Forelle-----	Slight-----	Moderate: runoff.
Diamondville-----	Slight*-----	Moderate: runoff.
166: Glendive-----	Moderate: low adsorption, wetness.	Slight.
Redrob-----	Severe: wetness.	Slight.
Grenoble-----	Severe: poor filter.	Severe: flooding.
167: Grenoble-----	Severe: poor filter.	Severe: flooding.
Gerrard-----	Severe: wetness, poor filter.	Severe: flooding.
168----- Greyback	Severe: poor filter.	Slight.
169----- Gypla	Severe: wetness.	Slight.
170: Gypla-----	Severe: wetness.	Slight.
Urban land.		
171: Hanson-----	Moderate: low adsorption.	Moderate: runoff.
Quander-----	Moderate: low adsorption.	Moderate: runoff.
172: Hapjack-----	Slight*-----	Severe: runoff.
Rogert-----	Slight*-----	Severe: runoff.
Amesmont-----	Slight*-----	Moderate: runoff.
173: Ipson-----	Slight-----	Severe: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
173: Evanston-----	Slight-----	Severe: runoff.
174----- Joemre	Moderate: low adsorption.	Moderate: runoff.
175----- Joemre	Moderate: low adsorption.	Moderate: runoff.
176: Kezar-----	Slight-----	Severe: runoff.
Carbol-----	Moderate: seepage.	Severe: runoff.
Rock outcrop.		
177: Kildor-----	Slight*-----	Severe: runoff.
Rock outcrop.		
178: Kiltabar-----	Moderate: wetness.	Slight.
Tismid-----	Slight-----	Slight.
179: Lakehelen-----	Slight*-----	Moderate: runoff.
Redfeather-----	Slight*-----	Moderate: runoff.
Amesmont-----	Severe*: poor filter.	Moderate: runoff.
180----- Leavitt	Moderate: low adsorption.	Moderate: runoff.
181: Leavitt-----	Slight-----	Severe: runoff.
Granile-----	Slight*-----	Severe: runoff.
182: Leavitt-----	Slight-----	Severe: runoff.
Hanson-----	Moderate: low adsorption.	Moderate: runoff.
183: Leavitt-----	Slight-----	Severe: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
183: Quander-----	Slight-----	Severe: runoff.
184----- Luhon	Slight-----	Moderate: runoff.
185: Luvar-----	Moderate: low adsorption.	Moderate: runoff.
Stylite-----	Slight-----	Moderate: runoff.
Diamonkit-----	Slight*-----	Moderate: runoff.
186: Lymanson loam-----	Moderate*: low adsorption.	Moderate: runoff.
Lymanson cobbly loam-----	Moderate*: low adsorption.	Moderate: runoff.
187----- Manada	Moderate: wetness.	Moderate: runoff.
188----- Mcfadden	Slight-----	Slight.
189: Miracle-----	Moderate: low adsorption.	Moderate: runoff.
Cheadle-----	Slight*-----	Severe: runoff.
190----- Moyerson	Slight*-----	Severe: runoff.
Kemmerer-----	Slight*-----	Moderate: runoff.
191: Nathale-----	Slight*-----	Severe: runoff.
Passcreek, cobbly subsoil-----	Slight*-----	Severe: runoff.
Rock outcrop.		
192----- Pahlow	Severe: poor filter.	Slight.
193: Pilotpeak-----	Slight*-----	Moderate: runoff.
Canwall-----	Slight*-----	Moderate: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
194:----- Pinelli	Slight*-----	Moderate: runoff.
195. Pits, mine		
196: Poin-----	Slight*-----	Severe: runoff.
Bowen-----	Slight*-----	Severe: runoff.
Rock outcrop.		
197: Poposhia-----	Moderate: low adsorption.	Moderate: runoff.
Blazon-----	Slight*-----	Severe: runoff.
198: Poposhia-----	Moderate: low adsorption.	Moderate: runoff.
Forelle-----	Moderate: low adsorption.	Moderate: runoff.
199: Poposhia-----	Slight-----	Moderate: runoff.
Chaperton-----	Moderate*: low adsorption.	Moderate: runoff.
200: Rainbolt-----	Slight*-----	Moderate: runoff.
Morset-----	Severe: low adsorption.	Moderate: runoff.
201: Redfeather-----	Slight*-----	Severe: runoff.
Lakehelen-----	Slight*-----	Severe: runoff.
Rogert-----	Slight*-----	Severe: runoff.
202----- Redrob	Severe: wetness.	Slight.
203: Redrob, frequently flooded-----	Severe: wetness, poor filter.	Severe: flooding.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
203: Grenoble-----	Severe: poor filter.	Severe: flooding.
Redrob-----	Severe: wetness.	Slight.
204: Redrob, frequently flooded-----	Severe: wetness.	Severe: flooding.
Redrob-----	Severe: wetness.	Severe: runoff.
205: Redrob, frequently flooded-----	Severe: wetness, poor filter.	Severe: flooding.
Redrob-----	Severe: wetness.	Slight.
Urban land.		
206: Rentsac-----	Slight*-----	Moderate: runoff.
Wycolo-----	Slight*-----	Moderate: runoff.
207: Renvers-----	Slight*-----	Moderate: runoff.
Chalkhill-----	Slight*-----	Moderate: runoff.
208: Rimton-----	Slight*-----	Severe: runoff.
Passcreek, cobbly subsoil-----	Slight*-----	Severe: runoff.
Miracle-----	Slight-----	Severe: runoff.
209. Riverwash		
210: Rock outcrop.		
Bonjea-----	Slight*-----	Severe: runoff.
211: Rock outcrop.		

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
211: Bruja-----	Slight*-----	Severe: runoff.
Byrnie-----	Slight*-----	Severe: runoff.
212: Rock outcrop.		
Cathedral-----	Severe*: poor filter.	Severe: runoff.
213: Rock outcrop.		
Cathedral-----	Severe*: poor filter.	Severe: runoff.
Alderon-----	Moderate*: low adsorption.	Severe: runoff.
214: Rock outcrop.		
Pilotpeak-----	Slight*-----	Moderate: runoff.
215: Rock outcrop.		
Rogert-----	Slight*-----	Severe: runoff.
216-----	Moderate: low adsorption.	Moderate: runoff.
Rock River		
217-----	Moderate: low adsorption.	Moderate: runoff.
Rock River		
218: Rock River-----	Moderate: low adsorption.	Moderate: runoff.
Urban land.		
219: Rogert-----	Slight*-----	Severe: runoff.
Lakehelen-----	Slight*-----	Severe: runoff.
Rock outcrop.		
220: Rogert-----	Slight*-----	Severe: runoff.
Rock outcrop.		

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
220: Amesmont-----	Severe*: poor filter.	Moderate: runoff.
221----- Rohonda	Slight*-----	Moderate: runoff.
222: Rohonda-----	Slight*-----	Moderate: runoff.
Tieside-----	Slight*-----	Moderate: runoff.
223: Rohonda-----	Slight*-----	Moderate: runoff.
Cheadle-----	Slight*-----	Severe: runoff.
Rock outcrop.		
224----- Ryark	Moderate: low adsorption.	Slight.
225: Shirleybasin-----	Moderate: low adsorption.	Moderate: runoff.
Twocabin-----	Moderate: low adsorption.	Moderate: runoff.
Lahtida-----	Slight*-----	Moderate: runoff.
226----- Silas	Moderate: wetness.	Moderate: runoff.
227: Silas, gravelly substratum-----	Moderate: wetness.	Moderate: runoff.
Vensora-----	Severe: wetness.	Slight.
228----- Stunner	Moderate: low adsorption.	Moderate: runoff.
229: Stunner-----	Moderate: low adsorption.	Moderate: runoff.
Borollic Camborthids.		
230: Stunner-----	Moderate: low adsorption.	Moderate: runoff.
Tisworth-----	Slight-----	Moderate: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
230: Blazon-----	Slight*-----	Severe: runoff.
231: Stunner----- Urban land.	Moderate: low adsorption.	Moderate: runoff.
232: Teeler-----	Slight-----	Severe: runoff.
233: Thiel----- Lymanson-----	Severe: poor filter. Slight*-----	Moderate: runoff. Moderate: runoff.
234: Tieside----- Pilotpeak----- Rock outcrop.	Slight*----- Slight*-----	Severe: runoff. Moderate: runoff.
235----- Tismid	Slight-----	Moderate: runoff.
236: Tisworth----- Gerdrum Family-----	Slight----- Slight-----	Moderate: runoff. Severe: runoff.
237: Tisworth----- Gerdrum Family-----	Slight----- Slight-----	Moderate: runoff. Severe: runoff.
238: Tule----- Chalkville-----	Slight*----- Slight*-----	Moderate: runoff. Severe: runoff.
239: Tyzak----- Rock outcrop.	Slight*-----	Severe: runoff.

See footnote at end of table.

TABLE 6.--SOIL-PESTICIDE LOSS POTENTIAL--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
240----- Wycolo	Moderate*: low adsorption.	Moderate: runoff.
241: Wycolo-----	Slight*-----	Moderate: runoff.
Alcova-----	Slight-----	Moderate: runoff.
242: Wycolo-----	Slight*-----	Moderate: runoff.
Alcova-----	Slight-----	Slight.
Urban land.		
243: Wycolo-----	Moderate*: low adsorption.	Moderate: runoff.
Tieside-----	Slight*-----	Severe: runoff.
244: Wycolo-----	Slight*-----	Severe: runoff.
Thermopolis-----	Slight*-----	Severe: runoff.
Rock outcrop.		

* Bedrock permeability criteria were not evaluated because data were not available.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES

(Only the soils that support rangeland vegetation suitable for grazing are listed)

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
100----- Aberone	Shallow Sandy, 12-14 Southern Plains.	Favorable	1,300	Needleandthread-----	25
		Normal	1,000	Prairie sandreed-----	15
		Unfavorable	600	Blue grama-----	10
				Sand bluestem-----	10
				Threadleaf sedge-----	10
				Indian ricegrass-----	5
Yucca-----	5				
101*: Abston-----	Impervious Clay, 10-14 High Plains Southeast.	Favorable	700	Birdfoot sagebrush-----	25
		Normal	500	Western wheatgrass-----	20
		Unfavorable	350	Indian ricegrass-----	10
				Bottlebrush squirreltail-----	10
				Gardner saltbush-----	10
				Sandberg bluegrass-----	5
Low rabbitbrush-----	5				
Bullock-----	Saline Loamy, 10-14 High Plains Southeast.	Favorable	900	Western wheatgrass-----	25
		Normal	700	Birdfoot sagebrush-----	15
		Unfavorable	500	Gardner saltbush-----	15
				Bluebunch wheatgrass-----	10
				Needleandthread-----	10
				Big sagebrush-----	10
Sandberg bluegrass-----	5				
Threadleaf sedge-----	5				
102*: Alcova-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	35
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Green needlegrass-----	5
Borollic Camborthids-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
103*: Alcova, shallow substratum-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
				Black sagebrush-----	10
				Fringed sagewort-----	5
Lupinto-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
				Black sagebrush-----	10
				Fringed sagewort-----	5
Big sagebrush-----	5				

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
103*: Dahlquist-----	Coarse Upland, 10-14 High Plains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	15
		Normal	1,000	Little bluestem-----	15
		Unfavorable	600	Western wheatgrass-----	10
				Black sagebrush-----	10
				Mutton bluegrass-----	5
				Prairie junegrass-----	5
				Threadleaf sedge-----	5
				Hood phlox-----	5
				Fringed sagewort-----	5
				Big sagebrush-----	5
104*: Alcova, calcareous subsoil-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
				Black sagebrush-----	10
			Fringed sagewort-----	5	
Rock River-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Green needlegrass-----	5
			Low rabbitbrush-----	5	
105----- Almy	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Prairie junegrass-----	5
				Fringed sagewort-----	5
			Douglas rabbitbrush-----	5	
107*: Almy-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	15
		Unfavorable	700	Needleandthread-----	10
				Black sagebrush-----	10
				Prairie junegrass-----	5
				Fringed sagewort-----	5
			Blue grama-----	5	
Tismid-----	Impervious Clay, 10-14 High Plains Southeast.	Favorable	700	Western wheatgrass-----	25
		Normal	500	Birdfoot sagebrush-----	25
		Unfavorable	350	Bottlebrush squirreltail-----	10
				Indian ricegrass-----	10
				Gardner saltbush-----	10
			Hood phlox-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
108----- Alogia	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	30
		Normal	1,800	Basin wildrye-----	10
		Unfavorable	1,200	Western wheatgrass-----	10
				Inland saltgrass-----	10
				Greasewood-----	10
				Indian ricegrass-----	5
				Threadleaf sedge-----	5
				Fourwing saltbush-----	5
				Rubber rabbitbrush-----	5
110----- Anchutz	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	15
		Normal	900	Western wheatgrass-----	15
		Unfavorable	700	Needleandthread-----	10
				Black sagebrush-----	10
				Mutton bluegrass-----	5
				Blue grama-----	5
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
				Hood phlox-----	5
				Fringed sagewort-----	5
Winterfat-----	5				
112*: Bateson-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
				Black sagebrush-----	10
				Fringed sagewort-----	5
Shirleybasin-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Green needlegrass-----	5
				Low rabbitbrush-----	5
113*: Blackhall-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Indian ricegrass-----	10
		Unfavorable	700	Needleandthread-----	10
				Prairie junegrass-----	5
				Western wheatgrass-----	5
				Black sagebrush-----	5
				Threadleaf sedge-----	5
				Blue grama-----	5
Browtine, moist---	Coarse Upland, 15-19 Foothills And Mountains Southeast.	Favorable	1,700	Bluebunch wheatgrass-----	20
		Normal	1,300	Idaho fescue-----	10
		Unfavorable	800	Western wheatgrass-----	10
				Threetip sagebrush-----	10
				Indian ricegrass-----	5
				Needleandthread-----	5
				Prairie junegrass-----	5
				Mountain muhly-----	5
				Parry danthonia-----	5
				Hood phlox-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
114*: Blackhall-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Indian ricegrass-----	10
		Unfavorable	700	Needleandthread-----	10
				Prairie junegrass-----	5
				Western wheatgrass-----	5
				Black sagebrush-----	5
				Threadleaf sedge-----	5
			Blue grama-----	5	
Satanka-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
			Bottlebrush squirreltail-----	5	
Rock outcrop.					
115*: Blazon-----	Shallow Loamy, 15-17 Southern Plains.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Green needlegrass-----	20
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Winterfat-----	10
			Blue grama-----	10	
Chaperton-----	Clayey, 15-17 Southern Plains.	Favorable	1,700	Western wheatgrass-----	40
		Normal	1,300	Green needlegrass-----	25
		Unfavorable	600	Winterfat-----	10
				Blue grama-----	5
116*: Blazon-----	Shallow Clayey, 10-14 High Plains Southeast.	Favorable	1,000	Western wheatgrass-----	40
		Normal	800	Bluebunch wheatgrass-----	10
		Unfavorable	500	Winterfat-----	10
				Mutton bluegrass-----	10
			Bottlebrush squirreltail-----	10	
Delphill-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
			Mutton bluegrass-----	5	
117*: Bonjea-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	10
				Idaho fescue-----	5
				Needleandthread-----	5
				Western wheatgrass-----	5
				Indian ricegrass-----	5
				Sandberg bluegrass-----	5
				Fringed sagewort-----	5
				Antelope bitterbrush-----	5
				Mountainmahogany-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
117*: Chugcreek-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	15
		Normal	1,500	Idaho fescue-----	10
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	10
				Canby bluegrass-----	5
				Columbia needlegrass-----	5
				Mountain brome-----	5
				Parry danthonia-----	5
				Threetip sagebrush-----	5
Rock outcrop.					
118*: Bonjea-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	10
				Idaho fescue-----	5
				Needleandthread-----	5
				Western wheatgrass-----	5
				Indian ricegrass-----	5
				Sandberg bluegrass-----	5
				Fringed sagewort-----	5
				Antelope bitterbrush-----	5
			Mountainmahogany-----	5	
Rock outcrop.					
Chugcreek-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	15
		Normal	1,500	Idaho fescue-----	10
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	10
				Canby bluegrass-----	5
				Columbia needlegrass-----	5
				Mountain brome-----	5
				Parry danthonia-----	5
				Threetip sagebrush-----	5
119----- Bosler, wet substratum	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	30
		Normal	1,800	Basin wildrye-----	15
		Unfavorable	1,200	Black greasewood-----	15
				Western wheatgrass-----	10
				Inland saltgrass-----	5
				Milkvetch-----	5
			Rubber rabbitbrush-----	5	
120*: Bosler-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Big sagebrush-----	10
				Bluebunch wheatgrass-----	10
				Green needlegrass-----	5
			Mutton bluegrass-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
120*: Borollic Camborthids-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
122*: Boyle-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
				Winterfat-----	5
Alderon. Cathedral-----	Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	700	Bluebunch wheatgrass-----	35
		Normal	550	Slimstem muhly-----	15
		Unfavorable	350	Black sagebrush-----	10
				Threetip sagebrush-----	10
				Idaho fescue-----	5
		Griffith wheatgrass-----	5		
123*: Boyle-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
				Winterfat-----	5
Boyle, thin solum-	Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	700	Bluebunch wheatgrass-----	35
		Normal	550	Slimstem muhly-----	15
		Unfavorable	350	Threetip sagebrush-----	10
				Black sagebrush-----	10
				Idaho fescue-----	5
		Griffith wheatgrass-----	5		
124*: Boyle-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
				Winterfat-----	5
Rock outcrop.					

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
125*: Boyle-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
				Winterfat-----	5
Lininger-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	10
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
126----- Browtine	Gravelly, 10-14 High Plains Southeast.	Favorable	650	Bluebunch wheatgrass-----	40
		Normal	450	Indian ricegrass-----	10
		Unfavorable	300	Needleandthread-----	10
				Prairie junegrass-----	10
				Hood phlox-----	5
				Needleleaf sedge-----	5
				Low rabbitbrush-----	5
127*: Browtine-----	Gravelly, 10-14 High Plains Southeast.	Favorable	650	Bluebunch wheatgrass-----	40
		Normal	450	Indian ricegrass-----	10
		Unfavorable	300	Needleandthread-----	10
				Prairie junegrass-----	10
				Hood phlox-----	5
				Needleleaf sedge-----	5
				Low rabbitbrush-----	5
Hilltoppe-----	Very Shallow, 10-14 High Plains Southeast.	Favorable	600	Bluebunch wheatgrass-----	40
		Normal	450	Western wheatgrass-----	10
		Unfavorable	250	Bottlebrush squirreltail-----	10
				Black sagebrush-----	5
				Antelope bitterbrush-----	5
128*: Bruja-----	Rocky Hills, 10-14 High Plains Southeast.	Favorable	800	Mountainmahogany-----	40
		Normal	600	Bluebunch wheatgrass-----	25
		Unfavorable	350	Western wheatgrass-----	15
				Needleandthread-----	15
Canwall-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Indian ricegrass-----	10
		Unfavorable	700	Needleandthread-----	10
				Western wheatgrass-----	5
				Sandberg bluegrass-----	5
				Mountainmahogany-----	5
				Black sagebrush-----	5
Telecan-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bottlebrush squirreltail-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
129*: Buffork-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	5
				Threetip sagebrush-----	5
Bucklon-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	35
		Normal	1,100	Griffith wheatgrass-----	15
		Unfavorable	800	Slimstem muhly-----	5
				Idaho fescue-----	5
				Threetip sagebrush-----	5
				Black sagebrush-----	5
130*: Byrnie-----	Rocky Hills, 10-14 High Plains Southeast.	Favorable	800	True mountainmahogany-----	40
		Normal	600	Bluebunch wheatgrass-----	25
		Unfavorable	350	Needleandthread-----	15
				Western wheatgrass-----	15
Rock outcrop.					
131----- Calciborolls	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
132----- Canburn	Subirrigated, 10-14 High Plains Southeast.	Favorable	4,300	Basin wildrye-----	35
		Normal	3,700	Tufted hairgrass-----	15
		Unfavorable	3,000	Western wheatgrass-----	10
				Slender wheatgrass-----	5
				Alkali sacaton-----	5
				Canby bluegrass-----	5
				Arrow-grass-----	5
				Iris-----	5
				Willow-----	5
133----- Cantle	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
				Arrow-grass-----	5
				Greasewood-----	5
134*: Carbol-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	10
				Idaho fescue-----	5
				Needleandthread-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
				Mountain muhly-----	5
				Sandberg bluegrass-----	5
				Threadleaf sedge-----	5
				Wyoming big sagebrush-----	5
Rock outcrop.					

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
135*: Carmody-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Needleandthread-----	15
		Unfavorable	700	Indian ricegrass-----	10
				Mutton bluegrass-----	10
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
				Winterfat-----	5
				Western wheatgrass-----	5
				Fringed sagewort-----	5
				Black sagebrush-----	5
Edlin-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Needleandthread-----	15
		Unfavorable	700	Indian ricegrass-----	10
				Mutton bluegrass-----	10
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
				Western wheatgrass-----	5
				Winterfat-----	5
				Fringed sagewort-----	5
				Black sagebrush-----	5
136*: Carmody-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
				Winterfat-----	5
Ryan Park-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bottlebrush squirreltail-----	5
137*: Cathedral-----	Very Shallow, 12-14 Southern Plains.	Favorable	900	Bluebunch wheatgrass-----	25
		Normal	600	Needleandthread-----	15
		Unfavorable	300	Little bluestem-----	15
				Blue grama-----	10
				Western wheatgrass-----	5
			Threadleaf sedge-----	5	
Spinekop-----	Loamy, 12-14 Southern Plains.	Favorable	1,800	Western wheatgrass-----	20
		Normal	1,300	Needleandthread-----	20
		Unfavorable	600	Blue grama-----	10
				Big sagebrush-----	5
			Threadleaf sedge-----	5	
Rock outcrop.					

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
138----- Center Creek	Subirrigated, 10-14 High Plains Southeast.	Favorable	4,300	Basin wildrye-----	40
		Normal	3,700	Tufted hairgrass-----	20
		Unfavorable	3,000	Western wheatgrass-----	10
				Slender wheatgrass-----	5
		Willow-----	5		
				Shrubby cinquefoil-----	5
139*: Chaperton, moderately saline	Saline Loamy, 10-14 High Plains Southeast.	Favorable	900	Western wheatgrass-----	25
		Normal	700	Needleandthread-----	15
		Unfavorable	500	Birdfoot sagebrush-----	15
				Gardner saltbush-----	15
				Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
Blazon-----	Shallow Clayey, 10-14 High Plains Southeast.	Favorable	1,000	Western wheatgrass-----	40
		Normal	800	Bluebunch wheatgrass-----	10
		Unfavorable	500	Winterfat-----	10
				Mutton bluegrass-----	10
				Bottlebrush squirreltail-----	10
140*: Chaperton-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Western wheatgrass-----	20
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Needleandthread-----	10
				Black sagebrush-----	10
				Mutton bluegrass-----	5
				Prairie junegrass-----	5
				Threadleaf sedge-----	5
				Hood phlox-----	5
				Fringed sagewort-----	5
				Winterfat-----	5
Poposhia-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Western wheatgrass-----	20
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Needleandthread-----	10
				Black sagebrush-----	10
				Mutton bluegrass-----	5
				Big sagebrush-----	5
				Low rabbitbrush-----	5
				Green needlegrass-----	5
				Fringed sagewort-----	5
141*: Cheadle-----	Rocky Hills, 15-19 Foothills And Mountains Southeast.	Favorable	1,150	True mountainmahogany-----	30
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	550	Needleandthread-----	15
				Spike fescue-----	15
				Antelope bitterbrush-----	10
Passcreek, cobbly subsoil-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Big sagebrush-----	5
				Threetip sagebrush-----	5
Rock outcrop.					

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
142*: Cheadle-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Parry danthonia-----	15
		Unfavorable	800	Threetip sagebrush-----	5
Rock outcrop.				Black sagebrush-----	5
Miracle-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	5
143-----	Wetland, 15-19 Foothills And Mountains Southeast.	Favorable	6,500	Threetip sagebrush-----	5
		Normal	5,500	Tufted hairgrass-----	30
		Unfavorable	4,000	Nebraska sedge-----	15
				Slough sedge-----	10
145*: Cushool-----	Loamy, 10-14 High Plains Southeast.			Willows-----	10
		Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	10
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Sandberg bluegrass-----	5
				Prairie junegrass-----	5
				Hood phlox-----	5
			Fringed sagewort-----	5	
Cutback-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Needleandthread-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	10
				Green needlegrass-----	5
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
			Winterfat-----	5	
146*: Cushool-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	10
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Sandberg bluegrass-----	5
				Prairie junegrass-----	5
				Hood phlox-----	5
			Fringed sagewort-----	5	
Diamondville-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Blue grama-----	5
				Threadleaf sedge-----	5
				Fringed sagewort-----	5
				Douglas rabbitbrush-----	5
			Prairie junegrass-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
147*: Cutback-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	Needleandthread-----	10	
			Mutton bluegrass-----	10	
			Black sagebrush-----	10	
			Green needlegrass-----	5	
			Prairie junegrass-----	5	
Sandberg bluegrass-----	5				
Winterfat-----	5				
Pinelli-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Bluebunch wheatgrass-----	10
		Unfavorable	Big sagebrush-----	10	
			Green needlegrass-----	5	
			Mutton bluegrass-----	5	
Douglas rabbitbrush-----	5				
148*: Dahlquist-----	Coarse Upland, 15-19 Foothills And Mountains Southeast.	Favorable	1,700	Bluebunch wheatgrass-----	25
		Normal	1,300	Idaho fescue-----	15
		Unfavorable	Western wheatgrass-----	10	
			Prairie junegrass-----	10	
			Threadleaf sedge-----	5	
			Fringed sagewort-----	5	
			Big sagebrush-----	5	
			Spike fescue-----	5	
Needleandthread-----	5				
Antelope bitterbrush-----	5				
Rawlins-----	Coarse Upland, 15-19 Foothills And Mountains Southeast.	Favorable	1,700	Bluebunch wheatgrass-----	30
		Normal	1,300	Idaho fescue-----	20
		Unfavorable	Western wheatgrass-----	10	
			Prairie junegrass-----	10	
			Needleandthread-----	5	
Big sagebrush-----	5				
Browtine-----	Coarse Upland, 15-19 Foothills And Mountains Southeast.	Favorable	1,700	Bluebunch wheatgrass-----	30
		Normal	1,300	Idaho fescue-----	20
		Unfavorable	Western wheatgrass-----	10	
			Prairie junegrass-----	10	
			Needleandthread-----	5	
Big sagebrush-----	5				
149*: Dalecreek-----	Subirrigated, 15-19 Foothills And Mountains Southeast.	Favorable	4,500	Basin wildrye-----	30
		Normal	4,000	Western wheatgrass-----	10
		Unfavorable	Tufted hairgrass-----	10	
			Slender wheatgrass-----	10	
			Nebraska sedge-----	5	
Willow-----	5				
Kovich-----	Wetland, 15-19 Foothills And Mountains Southeast.	Favorable	6,500	Tufted hairgrass-----	30
		Normal	5,500	Nebraska sedge-----	15
		Unfavorable	Willow-----	15	
			Slough sedge-----	10	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
150*: Delphill-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
Blazon-----	Shallow Clayey, 10-14 High Plains Southeast.	Favorable	1,000	Western wheatgrass-----	40
		Normal	800	Bluebunch wheatgrass-----	10
		Unfavorable	500	Winterfat-----	10
				Mutton bluegrass-----	10
				Bottlebrush squirreltail-----	10
151*: Diamondville-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Blue grama-----	5
				Threadleaf sedge-----	5
				Fringed sagewort-----	5
				Douglas rabbitbrush-----	5
				Prairie junegrass-----	5
Cushool-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	20
		Normal	1,200	Thickspike wheatgrass-----	15
		Unfavorable	700	Indian ricegrass-----	10
				Bluebunch wheatgrass-----	5
				Sandberg bluegrass-----	5
				Prairie junegrass-----	5
				Hood phlox-----	5
				Fringed sagewort-----	5
				Silver sagebrush-----	5
				Big sagebrush-----	5
152*: Diamonkit-----	Shallow-Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	15
		Normal	900	Western wheatgrass-----	10
		Unfavorable	700	Needleandthread-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	10
				Green needlegrass-----	5
				Indian ricegrass-----	5
				Squirreltail-----	5
				Blue grama-----	5
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
	Threadleaf sedge-----	5			
	Threestip sagebrush-----	5			
Stylite-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
	Mutton bluegrass-----	5			
	Low rabbitbrush-----	5			

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
153----- Elkol	Saline Upland, 10-14 High Plains Southeast.	Favorable	650	Gardner saltbush-----	40
		Normal	500	Western wheatgrass-----	15
		Unfavorable	300	Indian ricegrass-----	15
				Bottlebrush squirreltail-----	15
				Black greasewood-----	5
				Birdfoot sagebrush-----	5
154*: Elkol-----	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	30
		Normal	1,800	Basin wildrye-----	15
		Unfavorable	1,200	Western wheatgrass-----	10
				Black greasewood-----	10
				Inland saltgrass-----	10
				Gardner saltbush-----	5
				Rubber rabbitbrush-----	5
Gerdrum Family----	Saline Upland, 10-14 High Plains Southeast.	Favorable	650	Gardner saltbush-----	40
		Normal	500	Western wheatgrass-----	15
		Unfavorable	300	Indian ricegrass-----	15
				Bottlebrush squirreltail-----	15
				Birdfoot sagebrush-----	5
				Black greasewood-----	5
155*: Elkol-----	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	30
		Normal	1,800	Basin wildrye-----	15
		Unfavorable	1,200	Western wheatgrass-----	10
				Black greasewood-----	10
				Inland saltgrass-----	10
				Gardner saltbush-----	5
				Rubber rabbitbrush-----	5
Gerdrum Family----	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	30
		Normal	1,800	Basin wildrye-----	15
		Unfavorable	1,200	Black greasewood-----	15
				Western wheatgrass-----	10
				Inland saltgrass-----	10
				Indian ricegrass-----	5
				Fourwing saltbush-----	5
				Rubber rabbitbrush-----	5
156----- Evanston	Loamy, 15-17 Southern Plains.	Favorable	1,900	Needleandthread-----	35
		Normal	1,400	Western wheatgrass-----	20
		Unfavorable	700	Blue grama-----	10
				Little bluestem-----	5
				Big sagebrush-----	5
				Winterfat-----	5
157*: Evanston-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Idaho fescue-----	20
		Normal	1,500	Bluebunch wheatgrass-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	5
				Threetip sagebrush-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
157*: Bonjea-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	10
				Idaho fescue-----	5
				Needleandthread-----	5
				Western wheatgrass-----	5
				Indian ricegrass-----	5
				Sandberg bluegrass-----	5
				Fringed sagewort-----	5
				Antelope bitterbrush-----	5
			Mountainmahogany-----	5	
158*: Fivech-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Thickspike wheatgrass-----	15
		Unfavorable	700	Indian ricegrass-----	10
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bluebunch wheatgrass-----	5
				Bottlebrush squirreltail-----	5
				Low rabbitbrush-----	5
Fivech, cobbly substratum-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Indian ricegrass-----	15
		Unfavorable	700	Thickspike wheatgrass-----	15
				Threadleaf sedge-----	10
				Bluebunch wheatgrass-----	5
				Big sagebrush-----	5
				Silver sagebrush-----	5
				Blue grama-----	5
			Sandberg bluegrass-----	5	
Ryan Park-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bottlebrush squirreltail-----	5
160*: Fivech, cobbly substratum-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Indian ricegrass-----	15
		Unfavorable	700	Thickspike wheatgrass-----	15
				Threadleaf sedge-----	10
				Bluebunch wheatgrass-----	5
				Big sagebrush-----	5
				Silver sagebrush-----	5
				Blue grama-----	5
				Sandberg bluegrass-----	5
Joemre-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
			Bottlebrush squirreltail-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
163----- Forelle	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	35
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Indian ricegrass-----	5
				Prairie junegrass-----	5
165*: Forelle-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	35
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Indian ricegrass-----	5
				Prairie junegrass-----	5
Diamondville-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Blue grama-----	5
				Threadleaf sedge-----	5
				Fringed sagewort-----	5
				Douglas rabbitbrush-----	5
Prairie junegrass-----	5				
166*: Glendive-----	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
				Black greasewood-----	5
				Rubber rabbitbrush-----	5
Redrob-----	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
				Greasewood-----	5
				Rubber rabbitbrush-----	5
Grenoble-----	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	25
		Normal	1,800	Basin wildrye-----	10
		Unfavorable	1,200	Western wheatgrass-----	10
				Inland saltgrass-----	10
				Indian ricegrass-----	5
				Sandberg bluegrass-----	5
				Fourwing saltbush-----	5
Rubber rabbitbrush-----	5				
167*: Grenoble-----	Subirrigated, 10-14 High Plains Southeast.	Favorable	4,300	Basin wildrye-----	40
		Normal	3,700	Tufted hairgrass-----	20
		Unfavorable	3,000	Western wheatgrass-----	10
				Slender wheatgrass-----	10
				Alkali sacaton-----	5
Rubber rabbitbrush-----	5				
Willow-----	5				

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
167*: Gerrard-----	Wetland, 10-14 High Plains Southeast.	Favorable	6,000	Nebraska sedge-----	30
		Normal	5,000	Northern reedgrass-----	10
		Unfavorable	3,500	Willow-----	10
				Tufted hairgrass-----	5
				Slim sedge-----	5
				Baltic rush-----	5
				American mannagrass-----	5
				Common reed-----	5
				Blue-eyed-grass-----	5
				Arrow-grass-----	5
				Horsetail-----	5
				Waterhemlock-----	5
				American bistort-----	5
168----- Greyback	Coarse Upland, 15-19 Foothills And Mountains Southeast.	Favorable	1,700	Bluebunch wheatgrass-----	25
		Normal	1,300	Idaho fescue-----	15
		Unfavorable	800	Western wheatgrass-----	10
				Threetip sagebrush-----	10
				Spike fescue-----	5
				Needleandthread-----	5
				Mountain muhly-----	5
				Hood phlox-----	5
				Fringed sagewort-----	5
				Winterfat-----	5
169----- Gypla	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	30
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Western wheatgrass-----	5
				Inland saltgrass-----	5
				Arrow-grass-----	5
			Black greasewood-----	5	
171*: Hanson-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	25
		Normal	1,100	Parry danthonia-----	15
		Unfavorable	800	Threetip sagebrush-----	10
				Griffith wheatgrass-----	10
				Black sagebrush-----	5
Quander-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Griffith wheatgrass-----	15
		Unfavorable	800	Parry danthonia-----	15
				Threetip sagebrush-----	5
			Black sagebrush-----	5	
172*: Hapjack-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Western wheatgrass-----	5
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
			Winterfat-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
172*: Rogert-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
			Winterfat-----	5	
Amesmont-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Threetip sagebrush-----	15
		Unfavorable	600	Slimstem muhly-----	10
				Needleandthread-----	5
				Western wheatgrass-----	5
				Indian ricegrass-----	5
				Idaho fescue-----	5
				Parry danthonia-----	5
				Griffith wheatgrass-----	5
			Bluegrass-----	5	
173*: Ipson-----	Loamy, 15-17 Southern Plains.	Favorable	1,900	Needleandthread-----	35
		Normal	1,400	Western wheatgrass-----	20
		Unfavorable	700	Blue grama-----	10
				Little bluestem-----	5
				Big sagebrush-----	5
			Winterfat-----	5	
Evanston-----	Loamy, 15-17 Southern Plains.	Favorable	1,900	Needleandthread-----	35
		Normal	1,400	Western wheatgrass-----	20
		Unfavorable	700	Blue grama-----	10
				Little bluestem-----	5
				Big sagebrush-----	5
			Winterfat-----	5	
174, 175----- Joemre	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
			Bottlebrush squirreltail-----	5	
176*: Kezar-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Sagebrush-----	5
			Threetip sagebrush-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight			
		Lb/acre		Pct		
176*: Carbol-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20	
		Normal	900	Slimstem muhly-----	15	
		Unfavorable	600	Threetip sagebrush-----	10	
				Idaho fescue-----	5	
				Needleandthread-----	5	
				Griffith wheatgrass-----	5	
				Western wheatgrass-----	5	
				Mountain muhly-----	5	
				Sandberg bluegrass-----	5	
				Threadleaf sedge-----	5	
				Wyoming big sagebrush-----	5	
Rock outcrop.						
177*: Kildor-----		Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
	Normal		1,500	Idaho fescue-----	20	
	Unfavorable		800	Prairie junegrass-----	10	
				Griffith wheatgrass-----	10	
				Big sagebrush-----	5	
				Threetip sagebrush-----	5	
Rock outcrop.						
178*: Kiltabar-----	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	30	
		Normal	1,800	Basin wildrye-----	15	
		Unfavorable	1,200	Western wheatgrass-----	10	
				Inland saltgrass-----	10	
				Black greasewood-----	10	
				Fourwing saltbush-----	5	
Tismid-----	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	30	
		Normal	1,800	Basin wildrye-----	20	
		Unfavorable	1,200	Western wheatgrass-----	15	
				Black greasewood-----	15	
				Inland saltgrass-----	5	
				Rubber rabbitbrush-----	5	
			Nuttall alkaligrass-----	5		
179*: Lakehelen. Redfeather.						
Amesmont-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25	
		Normal	900	Threetip sagebrush-----	15	
		Unfavorable	600	Slimstem muhly-----	10	
				Idaho fescue-----	10	
				Needleandthread-----	5	
				Western wheatgrass-----	5	
				Indian ricegrass-----	5	
				Parry danthonia-----	5	
				Griffith wheatgrass-----	5	
				Bluegrass-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
180----- Leavitt	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
		Threetip sagebrush-----	5		
				Parry danthonia-----	5
				Big sagebrush-----	5
181*: Leavitt-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Griffith wheatgrass-----	10
				Prairie junegrass-----	10
		Threetip sagebrush-----	5		
				Big sagebrush-----	5
Granile-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Griffith wheatgrass-----	15
		Unfavorable	800	Parry danthonia-----	15
				Threetip sagebrush-----	5
		Black sagebrush-----	5		
182*: Leavitt-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Griffith wheatgrass-----	10
				Prairie junegrass-----	10
		Threetip sagebrush-----	5		
				Big sagebrush-----	5
Hanson-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	25
		Normal	1,100	Parry danthonia-----	15
		Unfavorable	800	Threetip sagebrush-----	10
				Griffith wheatgrass-----	10
		Black sagebrush-----	5		
183*: Leavitt-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Griffith wheatgrass-----	10
				Prairie junegrass-----	10
		Threetip sagebrush-----	5		
				Big sagebrush-----	5
Quander-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Griffith wheatgrass-----	15
		Unfavorable	800	Parry danthonia-----	15
				Threetip sagebrush-----	5
		Black sagebrush-----	5		
184----- Luhon	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
		Black sagebrush-----	10		
				Fringed sagewort-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
185*: Luvar-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
			Douglas rabbitbrush-----	5	
Stylite-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
			Low rabbitbrush-----	5	
Diamonkit-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	15
		Normal	900	Western wheatgrass-----	10
		Unfavorable	700	Needleandthread-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	10
				Green needlegrass-----	5
				Indian ricegrass-----	5
				Squirreltail-----	5
				Blue grama-----	5
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
			Threadleaf sedge-----	5	
			Threetip sagebrush-----	5	
186*: Lymanson loam-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Threetip sagebrush-----	5
			Big sagebrush-----	5	
Lymanson cobbly loam-----	Coarse Upland, 15-19 Foothills And Mountains Southeast.	Favorable	1,700	Bluebunch wheatgrass-----	30
		Normal	1,300	Idaho fescue-----	20
		Unfavorable	800	Western wheatgrass-----	10
				Prairie junegrass-----	10
			Threetip sagebrush-----	5	
188----- McFadden	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Needleandthread-----	25
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Threadleaf sedge-----	15
				Indian ricegrass-----	10
				Mutton bluegrass-----	10
			Black sagebrush-----	5	
189*: Miracle-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	5
			Threetip sagebrush-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
189*: Cheadle-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Parry danthonia-----	15
		Unfavorable	800	Threetip sagebrush-----	5
				Black sagebrush-----	5
190*: Moyerson-----	Impervious Clay, 10-14 High Plains Southeast.	Favorable	700	Western wheatgrass-----	25
		Normal	500	Birdfoot sagebrush-----	25
		Unfavorable	350	Bottlebrush squirreltail-----	10
				Indian ricegrass-----	10
				Gardner saltbush-----	10
Kemmerer-----	Impervious Clay, 10-14 High Plains Southeast.	Favorable	700	Birdfoot sagebrush-----	25
		Normal	500	Western wheatgrass-----	20
		Unfavorable	350	Bottlebrush squirreltail-----	10
				Indian ricegrass-----	10
				Gardner saltbush-----	10
191*: Nathale-----	Coarse Upland, 15-19 Foothills And Mountains Southeast.	Favorable	1,700	Bluebunch wheatgrass-----	30
		Normal	1,300	Idaho fescue-----	20
		Unfavorable	800	Western wheatgrass-----	10
				Prairie junegrass-----	10
Passcreek, cobbly subsoil-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Big sagebrush-----	5
				Threetip sagebrush-----	5
Rock outcrop.					
192----- Pahlow	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bottlebrush squirreltail-----	5
193*: Pilotpeak-----	Very Shallow, 10-14 High Plains Southeast.	Favorable	600	Bluebunch wheatgrass-----	40
		Normal	450	Western wheatgrass-----	10
		Unfavorable	250	Bottlebrush squirreltail-----	10
				Antelope bitterbrush-----	5
				Black sagebrush-----	5
Canwall-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Indian ricegrass-----	10
		Unfavorable	700	Needleandthread-----	10
				Western wheatgrass-----	5
				Sandberg bluegrass-----	5
				Mountainmahogany-----	5
				Black sagebrush-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
194----- Pinelli	Clayey, 10-14 High Plains Southeast.	Favorable	1,300	Thickspike wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	20
		Unfavorable	500	Birdfoot sagebrush-----	10
				Bluebunch wheatgrass-----	5
		Bottlebrush squirreltail-----	5		
196*: Poin-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Winterfat-----	5
Bowen-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
Rock outcrop.					
197*: Poposhia-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
				Green needlegrass-----	5
Blazon-----	Shallow Clayey, 10-14 High Plains Southeast.	Favorable	1,000	Western wheatgrass-----	40
		Normal	800	Bluebunch wheatgrass-----	10
		Unfavorable	500	Winterfat-----	10
				Mutton bluegrass-----	10
				Bottlebrush squirreltail-----	10
198*: Poposhia-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
				Green needlegrass-----	5
Forelle-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	35
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Indian ricegrass-----	5
				Prairie junegrass-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
199*: Poposhia-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
			Green needlegrass-----	5	
Chaperton-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Prairie junegrass-----	5
			Hood phlox-----	5	
200*: Rainbolt-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	5
				Threetip sagebrush-----	5
Morset-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Wyoming big sagebrush-----	5
				Threetip sagebrush-----	5
201*: Redfeather. Lakehelen.					
Rogert-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
			Winterfat-----	5	
202----- Redrob	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
				Greasewood-----	5
				Rubber rabbitbrush-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
203*: Redrob, frequently flooded-----	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
			Greasewood-----	5	
			Rubber rabbitbrush-----	5	
Grenoble-----	Saline Lowland, 10-14 High Plains Southeast.	Favorable	2,500	Alkali sacaton-----	25
		Normal	1,800	Basin wildrye-----	10
		Unfavorable	1,200	Western wheatgrass-----	10
				Inland saltgrass-----	10
				Indian ricegrass-----	5
				Sandberg bluegrass-----	5
				Fourwing saltbush-----	5
				Rubber rabbitbrush-----	5
Redrob-----	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
			Greasewood-----	5	
			Rubber rabbitbrush-----	5	
204*: Redrob, frequently flooded-----	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
				Greasewood-----	5
			Rubber rabbitbrush-----	5	
Redrob-----	Saline Subirrigated, 10-14 High Plains Southeast.	Favorable	3,400	Alkali sacaton-----	40
		Normal	3,000	Basin wildrye-----	20
		Unfavorable	2,500	Alkali bluegrass-----	10
				Inland saltgrass-----	5
				Greasewood-----	5
			Rubber rabbitbrush-----	5	
206*: Rentsac-----	Very Shallow, 10-14 High Plains Southeast.	Favorable	600	Bluebunch wheatgrass-----	40
		Normal	450	Bottlebrush squirreltail-----	10
		Unfavorable	250	Western wheatgrass-----	10
				Indian ricegrass-----	5
				Needleandthread-----	5
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
				Threadleaf sedge-----	5
				Big sagebrush-----	5
				Mountainmahogany-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
206*: Wycolo-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
			Low rabbitbrush-----	5	
207*: Renvers-----	Very Shallow, 10-14 High Plains Southeast.	Favorable	600	Bluebunch wheatgrass-----	40
		Normal	450	Bottlebrush squirreltail-----	10
		Unfavorable	250	Western wheatgrass-----	10
				Antelope bitterbrush-----	5
			Black sagebrush-----	5	
Chalkhill-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	10
		Unfavorable	700	Needleandthread-----	10
				Black sagebrush-----	10
				Green needlegrass-----	5
				Indian ricegrass-----	5
				Squirreltail-----	5
				Blue grama-----	5
				Prairie junegrass-----	5
				Sandberg bluegrass-----	5
				Threadleaf sedge-----	5
				Winterfat-----	5
208*: Rimton.	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Parry danthonia-----	15
		Unfavorable	800	Griffith wheatgrass-----	10
				Threetip sagebrush-----	5
				Black sagebrush-----	5
Miracle-----	Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	2,000	Bluebunch wheatgrass-----	20
		Normal	1,500	Idaho fescue-----	20
		Unfavorable	800	Prairie junegrass-----	10
				Griffith wheatgrass-----	10
				Big sagebrush-----	5
			Threetip sagebrush-----	5	
210*: Rock outcrop.	Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	700	Bluebunch wheatgrass-----	30
		Normal	550	Slimstem muhly-----	15
		Unfavorable	350	Threetip sagebrush-----	10
				Black sagebrush-----	10
				Idaho fescue-----	5
				Indian ricegrass-----	5
				Sandberg bluegrass-----	5
				Antelope bitterbrush-----	5
				Mountainmahogany-----	5
			Prairie junegrass-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
211*: Rock outcrop.					
Bruja-----	Rocky Hills, 10-14 High Plains Southeast.	Favorable	800	Mountainmahogany-----	40
		Normal	600	Bluebunch wheatgrass-----	25
		Unfavorable	350	Western wheatgrass-----	15
				Needleandthread-----	15
Byrnie-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Needleandthread-----	25
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Threadleaf sedge-----	15
				Indian ricegrass-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	5
				Western wheatgrass-----	5
212*: Rock outcrop.					
Cathedral-----	Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	700	Bluebunch wheatgrass-----	35
		Normal	550	Slimstem muhly-----	15
		Unfavorable	350	Black sagebrush-----	10
				Threetip sagebrush-----	10
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
213*: Rock outcrop.					
Cathedral-----	Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	700	Bluebunch wheatgrass-----	35
		Normal	550	Slimstem muhly-----	15
		Unfavorable	350	Black sagebrush-----	10
				Threetip sagebrush-----	10
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
Alderon.					
214*: Rock outcrop.					
Pilotpeak-----	Very Shallow, 10-14 High Plains Southeast.	Favorable	600	Bluebunch wheatgrass-----	40
		Normal	450	Western wheatgrass-----	10
		Unfavorable	250	Bottlebrush squirreltail-----	10
				Antelope bitterbrush-----	5
				Black sagebrush-----	5
215*: Rock outcrop.					
Rogert-----	Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	700	Bluebunch wheatgrass-----	35
		Normal	550	Slimstem muhly-----	15
		Unfavorable	350	Threetip sagebrush-----	10
				Black sagebrush-----	10
				Idaho fescue-----	5
				Griffith wheatgrass-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
216, 217----- Rock River	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Green needlegrass-----	5
				Low rabbitbrush-----	5
219*: Rogert-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
				Winterfat-----	5
Lakehelen.					
Rock outcrop.					
220*: Rogert-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Slimstem muhly-----	15
		Unfavorable	600	Threetip sagebrush-----	15
				Idaho fescue-----	5
				Griffith wheatgrass-----	5
				Western wheatgrass-----	5
				Winterfat-----	5
Rock outcrop.					
Amesmont-----	Shallow Igneous, 15-19 Foothills And Mountains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	25
		Normal	900	Threetip sagebrush-----	15
		Unfavorable	600	Slimstem muhly-----	10
				Idaho fescue-----	10
				Needleandthread-----	5
				Western wheatgrass-----	5
				Indian ricegrass-----	5
				Parry danthonia-----	5
				Griffith wheatgrass-----	5
Bluegrass-----	5				
221----- Rohonda	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bottlebrush squirreltail-----	5
222*: Rohonda-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bottlebrush squirreltail-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
222*: Tieside-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Needleandthread-----	25
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Threadleaf sedge-----	15
				Indian ricegrass-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	5
223*: Rohonda-----	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Griffith wheatgrass-----	15
		Unfavorable	800	Parry danthonia-----	15
				Threetip sagebrush-----	5
				Black sagebrush-----	5
Cheadle-----	Rocky Hills, 15-19 Foothills And Mountains Southeast.	Favorable	1,150	Mountainmahogany-----	30
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	550	Spike fescue-----	10
				Mountain muhly-----	5
				Prairie junegrass-----	5
				Buckwheat-----	5
				Antelope bitterbrush-----	5
				Big sagebrush-----	5
Rock outcrop.					
224----- Ryark	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
				Silver sagebrush-----	10
				Bottlebrush squirreltail-----	5
225*: Shirleybasin-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Green needlegrass-----	5
				Low rabbitbrush-----	5
Twocabin-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
				Black sagebrush-----	10
				Fringed sagewort-----	5
Lahtida-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Douglas rabbitbrush-----	5
			Mutton bluegrass-----	5	

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	x Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
226----- Silas	Subirrigated, 15-19 Foothills And Mountains Southeast.	Favorable	4,500	Basin wildrye-----	40
		Normal	4,000	Tufted hairgrass-----	15
		Unfavorable	3,300	Slender wheatgrass-----	10
				Western wheatgrass-----	10
		Shrubby cinquefoil-----	5		
		Willow-----	5		
227*: silas, gravelly substratum-----	Subirrigated, 15-19 Foothills And Mountains Southeast.	Favorable	4,500	Basin wildrye-----	40
		Normal	4,000	Tufted hairgrass-----	15
		Unfavorable	3,300	Slender wheatgrass-----	10
				Western wheatgrass-----	10
		Shrubby cinquefoil-----	5		
		Willow-----	5		
Vensora-----	Wetland, 15-19 Foothills And Mountains Southeast.	Favorable	6,500	Tufted hairgrass-----	30
		Normal	5,500	Nebraska sedge-----	15
		Unfavorable	4,000	Slough sedge-----	10
				Willow-----	10
228----- Stunner	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
		Green needlegrass-----	5		
229*: Stunner-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Wyoming big sagebrush-----	10
		Low rabbitbrush-----	5		
		Green needlegrass-----	5		
Borollic Camborthids-----	Sandy, 10-14 High Plains Southeast.	Favorable	1,500	Needleandthread-----	30
		Normal	1,200	Thickspike wheatgrass-----	20
		Unfavorable	700	Indian ricegrass-----	15
				Threadleaf sedge-----	10
		Silver sagebrush-----	10		
230*: Stunner-----	Saline Loamy, 10-14 High Plains Southeast.	Favorable	900	Western wheatgrass-----	25
		Normal	700	Needleandthread-----	15
		Unfavorable	500	Gardner saltbush-----	15
				Birdfoot sagebrush-----	15
				Bluebunch wheatgrass-----	10
		Wyoming big sagebrush-----	10		
Tisworth-----	Impervious Clay, 10-14 High Plains Southeast.	Favorable	700	Western wheatgrass-----	25
		Normal	500	Birdfoot sagebrush-----	25
		Unfavorable	350	Indian ricegrass-----	10
				Bottlebrush squirreltail-----	10
				Gardner saltbush-----	10
		Sandberg bluegrass-----	5		

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
		Lb/acre		Pct	
230*: Blazon-----	Very Shallow, 10-14 High Plains Southeast.	Favorable	600	Bluebunch wheatgrass-----	40
		Normal	450	Western wheatgrass-----	10
		Unfavorable	250	Bottlebrush squirreltail-----	10
				Black sagebrush-----	10
				Mutton bluegrass-----	5
232----- Teeler	Shallow Loamy, 15-19 Foothills And Mountains Southeast.	Favorable	1,400	Bluebunch wheatgrass-----	30
		Normal	1,100	Griffith wheatgrass-----	15
		Unfavorable	800	Parry danthonia-----	15
				Threetip sagebrush-----	5
				Black sagebrush-----	5
233*: Thiel-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
				Black sagebrush-----	10
				Fringed sagewort-----	5
Lymanson-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	20
		Unfavorable	700	Mutton bluegrass-----	10
				Needleandthread-----	10
				Black sagebrush-----	10
				Fringed sagewort-----	5
Leavitt-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Douglas rabbitbrush-----	5
				Green needlegrass-----	5
234*: Tieside-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Needleandthread-----	25
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Threadleaf sedge-----	15
				Indian ricegrass-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	5
Pilotpeak-----	Rocky Hills, 10-14 High Plains Southeast.	Favorable	800	Mountainmahogany-----	40
		Normal	600	Bluebunch wheatgrass-----	25
		Unfavorable	350	Western wheatgrass-----	15
				Needleandthread-----	15
Rock outcrop.					
235----- Tismid	Impervious Clay, 10-14 High Plains Southeast.	Favorable	700	Western wheatgrass-----	25
		Normal	500	Birdfoot sagebrush-----	25
		Unfavorable	350	Bottlebrush squirreltail-----	10
				Indian ricegrass-----	10
				Gardner saltbush-----	10
				Hood phlox-----	5

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
236*: Tisworth-----	Saline Upland, 10-14 High Plains Southeast.	Favorable	650	Gardner saltbush-----	40
		Normal	500	Western wheatgrass-----	15
		Unfavorable	300	Indian ricegrass-----	15
				Bottlebrush squirreltail-----	10
				Black greasewood-----	5
				Birdfoot sagebrush-----	5
Gerdrum Family----	Saline Upland, 10-14 High Plains Southeast.	Favorable	650	Gardner saltbush-----	40
		Normal	500	Western wheatgrass-----	15
		Unfavorable	300	Indian ricegrass-----	15
				Bottlebrush squirreltail-----	15
				Birdfoot sagebrush-----	5
				Black greasewood-----	5
237*: Tisworth-----	Saline Loamy, 10-14 High Plains Southeast.	Favorable	900	Western wheatgrass-----	25
		Normal	700	Gardner saltbush-----	15
		Unfavorable	500	Birdfoot sagebrush-----	15
				Needleandthread-----	15
				Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Threadleaf sedge-----	5
				Sandberg bluegrass-----	5
Gerdrum Family----	Saline Loamy, 10-14 High Plains Southeast.	Favorable	900	Western wheatgrass-----	25
		Normal	700	Needleandthread-----	15
		Unfavorable	500	Birdfoot sagebrush-----	15
				Gardner saltbush-----	15
				Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Sandberg bluegrass-----	5
238*: Tule-----	Very Shallow, 10-14 High Plains Southeast.	Favorable	600	Bluebunch wheatgrass-----	40
		Normal	450	Bottlebrush squirreltail-----	10
		Unfavorable	250	Western wheatgrass-----	10
				Antelope bitterbrush-----	5
				Black sagebrush-----	5
Chalkville-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Bluebunch wheatgrass-----	20
		Normal	900	Western wheatgrass-----	10
		Unfavorable	700	Black sagebrush-----	10
				Needleandthread-----	5
				Mutton bluegrass-----	5
				Green needlegrass-----	5
				Indian ricegrass-----	5
				Prairie junegrass-----	5
				Winterfat-----	5
				Big sagebrush-----	5
239*: Tyzak-----	Rocky Hills, 15-19 Foothills And Mountains Southeast.	Favorable	1,150	True mountainmahogany-----	30
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	550	Needleandthread-----	15
				Spike fescue-----	15
				Antelope bitterbrush-----	10
Rock outcrop.					

See footnote at end of table.

TABLE 7.--RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
240----- Wycolo	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
241*: Wycolo-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
Alcova-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Mutton bluegrass-----	5
				Prairie junegrass-----	5
				Fringed sagewort-----	5
				Green needlegrass-----	5
243*: Wycolo-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
Tieside-----	Shallow Sandy, 10-14 High Plains Southeast.	Favorable	1,200	Needleandthread-----	25
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Threadleaf sedge-----	15
				Indian ricegrass-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	5
244*: Wycolo-----	Loamy, 10-14 High Plains Southeast.	Favorable	1,400	Western wheatgrass-----	30
		Normal	1,100	Needleandthread-----	15
		Unfavorable	600	Bluebunch wheatgrass-----	10
				Big sagebrush-----	10
				Green needlegrass-----	5
				Mutton bluegrass-----	5
				Low rabbitbrush-----	5
Thermopolis-----	Shallow Loamy, 10-14 High Plains Southeast.	Favorable	1,200	Western wheatgrass-----	20
		Normal	900	Bluebunch wheatgrass-----	20
		Unfavorable	700	Needleandthread-----	10
				Mutton bluegrass-----	10
				Black sagebrush-----	10
Rock outcrop.				Fringed sagewort-----	5

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8A.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP, IN PLANTING ZONE I

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 1			Group 1KW			Group 2			Group 2KW			Group 3		
	Precipitation		Irri- gated												
	10- 14"	15- 19"		10- 14"	15- 19"		10- 14"	15- 19"		10- 14"	15- 19"		10- 14"	15- 19"	
	Ft	Ft	Ft												
Conifers*:															
Austrian pine-----	---	17	22	---	---	---	**16	19	22	---	---	---	---	**16	22
Black Hills spruce-----	---	**16	22	**15	17	22	**15	18	22	**16	19	21	---	**16	22
Blue spruce-----	**12	16	22	---	16	22	**14	18	22	**12	18	22	---	16	22
Eastern redcedar-----	15	18	23	15	17	22	16	19	23	16	19	22	10	13	21
Ponderosa pine-----	**16	18	23	**16	18	23	**17	19	23	**17	20	23	**14	16	22
Rocky Mountain juniper--	10	14	21	10	14	21	11	15	21	11	16	21	8	10	18
Scotch pine-----	---	**17	21	---	---	---	**13	18	21	---	---	---	---	**15	20
Deciduous trees:															
Boxelder-----	---	**16	21	---	---	---	**12	18	21	---	---	---	---	---	20
Golden willow-----	**20	**24	31	**20	**24	31	**20	26	31	**22	26	31	---	---	29
Green ash-----	**14	18	28	**14	17	27	**16	20	28	**15	18	27	**13	16	28
Hackberry-----	**14	18	26	**14	17	26	**16	20	26	**15	18	26	**14	18	24
Honeylocust-----	15	19	28	15	19	28	**17	21	28	16	20	28	14	17	26
Plains cottonwood-----	**29	**31	41	**29	31	41	**33	35	41	**31	33	41	---	---	41
Russian-olive-----	15	18	24	16	18	24	17	20	24	17	20	24	13	15	23
Siberian crabapple-----	**11	13	19	---	---	---	**12	15	19	---	---	---	---	12	19
Siberian elm-----	**20	24	33	**20	24	33	**22	26	30	21	23	33	**18	23	33
Shrubs:															
American plum-----	---	**7	10	---	**7	10	**5	8	10	---	7	10	---	**7	10
Basin big sagebrush-----	---	---	---	---	---	---	---	---	---	---	---	---	4	5	---
Common chokecherry-----	**7	**7	11	**7	**7	11	**7	7	11	**7	7	11	**7	**8	11
Fourwing saltbush-----	2	---	---	2	---	---	2	---	---	2	---	---	2	---	---
Golden currant-----	---	**4	6	---	---	---	**4	**5	6	---	---	---	---	**4	6
Greasewood-----	---	---	3	---	---	---	---	---	---	4	---	10	**5	---	---
Lilac-----	**5	7	10	**5	7	10	**6	8	10	**6	8	---	**3	7	10
Nanking cherry-----	**3	5	8	---	---	---	**4	6	8	---	---	---	**3	5	8
Peking cotoneaster-----	**3	5	9	---	---	---	**4	6	9	---	---	---	---	4	8
Redosier dogwood-----	---	4	8	---	---	---	4	5	8	---	---	---	---	---	8
Rubber rabbitbrush-----	---	---	3	---	---	---	---	---	---	---	---	---	3	---	---
Rugosa rose-----	2	4	6	---	---	---	3	5	6	---	---	---	---	4	6
Saskatoon serviceberry--	---	**4	7	---	---	---	**4	5	7	---	---	14	7	---	5
Siberian peashrub-----	7	9	14	6	9	14	8	10	14	6	9	12	---	8	12
Silver buffaloberry-----	---	**7	12	---	**7	12	**6	8	12	**6	8	9	3	**7	11
Skunkbush sumac-----	3	5	9	3	5	9	4	6	9	4	6	11	5	5	9
Tatarian honeysuckle-----	6	8	11	6	8	11	7	9	11	6	8	11	---	7	11
Western sandcherry-----	2	3	3	---	---	---	2	3	3	---	---	---	2	3	3

See footnotes at end of table.

TABLE 8A.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE I--Continued

Woody species	Group 4			Group 4C			Group 4CK			Group 4K		
	Precipitation			Precipitation			Precipitation			Precipitation		
	10- 14"	15- 19"	Irri- gated									
Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	
Conifers*:												
Austrian pine-----	---	15	22	---	---	22	---	---	---	---	---	---
Black Hills spruce-----	---	---	20	---	---	20	---	---	19	---	---	19
Blue spruce-----	---	---	20	---	---	19	---	---	18	---	---	19
Eastern redcedar-----	10	12	20	8	11	20	8	11	19	9	12	19
Ponderosa pine-----	**12	15	22	**10	12	21	**10	12	20	**12	15	21
Rocky Mountain juniper--	8	10	18	8	10	18	---	---	17	---	---	17
Scotch pine-----	---	---	20	---	---	20	---	---	---	---	---	---
Deciduous trees:												
Boxelder-----	---	---	19	---	---	19	---	---	---	---	---	---
Golden willow-----	---	---	29	---	---	29	---	---	27	---	---	27
Green ash-----	**13	15	28	**10	12	25	**10	12	23	**12	14	26
Hackberry-----	**14	18	24	**12	16	23	**11	15	22	**13	17	23
Honeylocust-----	13	16	26	12	14	24	11	13	22	12	15	24
Plains cottonwood-----	---	---	41	---	---	41	---	---	39	---	---	39
Russian-olive-----	11	14	22	9	11	22	8	11	21	10	13	21
Siberian crabapple-----	---	12	19	---	11	19	---	---	---	---	---	---
Siberian elm-----	**17	21	33	**15	19	31	---	**13	29	**15	19	29
Shrubs:												
American plum-----	---	**7	10	---	**7	10	---	6	10	---	---	10
Basin big sagebrush-----	---	---	---	---	---	---	---	---	---	---	---	---
Common chokecherry-----	**7	8	11	**7	8	11	---	7	11	---	---	11
Fourwing saltbush-----	2	---	---	2	---	---	2	2	---	2	---	---
Golden currant-----	---	**4	6	---	---	6	---	---	6	---	---	6
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	**5	7	10	**4	5	9	**4	5	9	**5	7	10
Nanking cherry-----	**3	5	8	**3	5	8	---	---	---	---	---	---
Peking cotoneaster-----	**3	4	8	---	4	8	---	---	---	---	---	---
Redosier dogwood-----	---	---	8	---	---	7	---	---	---	---	---	---
Rubber rabbitbrush-----	2	---	---	2	---	---	2	---	---	---	---	---
Rugosa rose-----	3	4	6	---	3	5	---	---	---	---	---	---
Saskatoon serviceberry--	---	---	5	---	---	5	---	---	---	---	---	---
Siberian peashrub-----	6	7	12	4	5	12	4	5	11	5	6	11
Silver buffaloberry-----	---	**7	10	---	---	10	---	---	10	---	7	10
Skunkbush sumac-----	3	5	9	3	4	8	3	4	8	3	5	9
Tatarian honeysuckle-----	5	7	11	4	6	11	4	6	11	3	5	11
Western sandcherry-----	2	3	3	---	---	3	---	---	---	---	---	---

See footnotes at end of table.

TABLE 8A.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE I--Continued

Woody species	Group 5			Group 5K			Group 5KK			Group 6		
	Precipitation			Precipitation			Precipitation			Precipitation		
	10- 14"	15- 19"	Irrig- gated									
	Ft	Ft	Ft									
Conifers*:												
Austrian pine-----	---	**16	22	---	---	---	---	---	---	---	---	13
Black Hills spruce-----	---	---	20	---	---	20	---	---	19	---	---	16
Blue spruce-----	---	---	21	---	---	21	---	---	20	---	---	17
Eastern redcedar-----	10	13	20	8	10	20	7	8	19	**6	**8	16
Ponderosa pine-----	**13	15	22	**10	13	22	**8	11	18	**8	**10	18
Rocky Mountain juniper--	8	10	17	8	10	17	7	8	13	**6	**10	14
Scotch pine-----	---	**15	20	---	---	---	---	---	---	---	**11	16
Deciduous trees:												
Boxelder-----	---	---	20	---	---	---	---	---	---	---	---	16
Golden willow-----	---	---	29	---	---	---	---	---	---	---	---	---
Green ash-----	**12	15	27	**11	13	28	**9	11	22	---	**11	22
Hackberry-----	---	14	24	---	---	25	---	---	20	---	---	19
Honeylocust-----	12	15	26	11	14	28	9	12	22	---	**11	21
Plains cottonwood-----	---	---	41	---	---	41	---	---	33	---	---	28
Russian-olive-----	11	14	23	9	11	23	8	9	19	---	**9	18
Siberian crabapple-----	---	12	19	---	---	---	---	---	---	---	---	15
Siberian elm-----	**17	22	33	**16	20	33	**13	16	27	**12	**15	26
Shrubs:												
American plum-----	---	**7	10	---	---	10	---	---	8	---	---	8
Basin big sagebrush-----	4	---	---	3	---	---	3	---	---	3	4	---
Common chokecherry-----	**6	8	11	---	7	11	6	9	9	---	**6	9
Fourwing saltbush-----	2	---	---	2	2	---	2	---	---	2	2	---
Golden currant-----	---	---	6	---	---	---	---	---	---	---	---	5
Greasewood-----	---	---	---	3	---	---	3	---	---	---	---	---
Lilac-----	**5	6	10	**4	5	10	**4	5	10	---	**4	7
Nanking cherry-----	---	**4	8	---	---	---	---	---	---	---	---	6
Peking cotoneaster-----	---	**4	8	---	---	---	---	---	---	---	---	7
Redosier dogwood-----	---	---	8	---	---	---	---	---	---	---	---	6
Rubber rabbitbrush-----	---	---	---	2	---	---	2	2	---	2	3	---
Rugosa rose-----	2	3	6	---	---	---	---	---	---	**2	**3	5
Saskatoon serviceberry--	---	---	5	---	---	5	---	---	4	---	---	4
Siberian peashrub-----	5	6	12	4	6	12	3	5	10	**4	**5	9
Silver buffaloberry-----	---	**6	11	---	**6	11	---	**6	10	---	**4	9
Skunkbush sumac-----	3	5	8	3	5	8	3	5	8	---	---	7
Tatarian honeysuckle-----	5	7	11	4	6	11	4	6	11	---	**5	9
Western sandcherry-----	2	3	3	---	---	---	---	---	---	---	---	3

See footnotes at end of table.

TABLE 8A.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE I--Continued

Woody species	Group 6D			Group 6DK			Group 6G			Group 6GK		
	Precipitation		Irri- gated									
	10- 14"	15- 19"		10- 14"	15- 19"		10- 14"	15- 19"		10- 14"	15- 19"	
	Ft	Ft	Ft									
Conifers*:												
Austrian pine-----	---	**13	22	---	---	---	---	---	16	---	---	---
Black Hills spruce-----	---	---	20	---	---	18	---	---	20	---	---	18
Blue spruce-----	---	---	21	---	---	19	---	---	20	---	---	19
Eastern redcedar-----	8	11	20	7	10	18	8	10	19	7	9	18
Ponderosa pine-----	**11	13	22	**11	13	22	**10	13	18	**10	13	22
Rocky Mountain juniper--	8	10	18	8	10	18	8	10	13	8	10	18
Scotch pine-----	---	13	20	---	---	---	---	13	---	---	---	---
Deciduous trees:												
Boxelder-----	---	---	20	---	---	---	---	---	20	---	---	---
Golden willow-----	---	---	29	---	---	29	---	---	---	---	---	---
Green ash-----	**11	14	28	**10	13	25	---	**13	28	---	12	26
Hackberry-----	---	12	25	---	11	23	---	---	24	---	---	22
Honeylocust-----	14	17	27	14	17	27	---	13	26	---	13	26
Plains cottonwood-----	---	---	35	---	---	35	---	---	35	---	---	35
Russian-olive-----	11	14	24	11	24	24	10	13	23	10	13	23
Siberian crabapple-----	---	**12	19	---	---	---	---	---	19	---	---	---
Siberian elm-----	17	21	33	17	21	33	**15	20	33	**15	20	33
Shrubs:												
American plum-----	---	---	10	---	---	10	---	---	10	---	---	10
Basin big sagebrush-----	3	4	---	3	4	---	3	4	---	3	4	---
Common chokecherry-----	---	**7	11	---	**7	11	---	**7	11	---	**7	11
Fourwing saltbush-----	2	2	---	2	---	---	2	2	---	2	2	---
Golden currant-----	---	---	6	---	---	---	---	---	6	---	---	---
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	---	**5	9	---	**5	9	---	**5	9	---	**5	9
Nanking cherry-----	---	**4	8	---	---	---	---	---	7	---	---	---
Peking cotoneaster-----	---	**4	8	---	---	---	---	**4	8	---	---	---
Redosier dogwood-----	---	---	7	---	---	---	---	---	7	---	---	---
Rubber rabbitbrush-----	3	3	---	---	---	---	2	3	---	2	3	6
Rugosa rose-----	2	3	6	---	---	---	2	3	6	---	---	---
Saskatoon serviceberry--	---	---	5	---	---	---	---	---	5	---	---	---
Siberian peashrub-----	5	7	12	4	6	11	5	6	12	**4	**5	11
Silver buffaloberry-----	---	**7	11	**7	11	11	---	**5	11	---	5	11
Skunkbush sumac-----	**3	5	8	**3	5	8	---	3	8	---	3	8
Tatarian honeysuckle-----	5	7	11	5	7	11	---	6	11	---	6	11
Western sandcherry-----	---	2	3	---	---	---	---	2	3	---	---	---

See footnotes at end of table.

TABLE 8A.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE I--Continued

Woody species	Group 6GK			Group 6K			Group 6KK			Group 7		
	Precipitation			Precipitation			Precipitation			Precipitation		
	10- 14"	15- 19"	Irrig- gated									
Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	
Conifers*:												
Austrian pine-----	---	---	---	---	---	13	---	---	---	---	**12	22
Black Hills spruce-----	---	---	14	---	---	14	---	---	15	---	---	20
Blue spruce-----	---	---	15	---	---	16	---	---	16	---	---	21
Eastern redcedar-----	6	7	14	**6	**7	15	**5	8	15	**7	9	20
Ponderosa pine-----	**8	11	17	**8	**10	17	**8	10	17	---	**11	22
Rocky Mountain juniper--	7	8	14	**6	**10	14	**5	7	14	**6	8	18
Scotch pine-----	---	---	---	---	---	---	---	---	---	---	**12	20
Deciduous trees:												
Boxelder-----	---	---	---	---	---	---	---	---	---	---	---	20
Golden willow-----	---	---	---	---	---	---	---	---	---	---	---	---
Green ash-----	---	10	21	---	**11	21	---	11	22	---	12	28
Hackberry-----	---	---	18	---	---	18	---	9	20	---	---	24
Honeylocust-----	---	11	21	---	**11	21	---	11	21	---	13	26
Plains cottonwood-----	---	---	28	---	---	28	---	---	28	---	---	30
Russian-olive-----	8	8	18	---	**8	18	---	11	19	---	**13	23
Siberian crabapple-----	---	---	---	---	---	---	---	---	---	---	---	19
Siberian elm-----	**13	17	26	**12	**15	26	**11	14	25	---	16	29
Shrubs:												
American plum-----	---	---	8	---	---	8	---	---	7	---	---	10
Basin big sagebrush-----	2	3	---	3	4	---	2	2	---	---	---	---
Common chokecherry-----	---	---	9	---	**6	9	---	---	8	---	---	11
Fourwing saltbush-----	2	2	---	2	2	---	2	2	---	---	---	---
Golden currant-----	---	---	---	---	---	---	---	---	---	---	---	6
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	---	**5	9	---	**4	7	---	**4	8	---	**5	9
Nanking cherry-----	---	---	---	---	---	---	---	---	---	---	---	7
Peking cotoneaster-----	---	---	---	---	---	---	---	---	---	---	---	8
Redosier dogwood-----	---	---	---	---	---	---	---	---	---	---	---	7
Rubber rabbitbrush-----	2	2	5	2	3	---	2	3	---	**2	3	---
Rugosa rose-----	---	---	---	---	---	---	---	---	---	**2	3	6
Saskatoon serviceberry--	---	---	---	---	---	---	---	---	---	---	---	5
Siberian peashrub-----	**3	**4	9	**3	**4	9	---	**4	9	**4	6	12
Silver buffaloberry-----	---	**4	9	---	**4	9	---	**4	9	---	---	11
Skunkbush sumac-----	---	3	8	---	3	7	---	---	7	---	---	---
Tatarian honeysuckle-----	---	6	11	---	**5	9	---	**5	8	---	5	11
Western sandcherry-----	---	---	---	---	---	3	---	---	3	---	2	3

See footnotes at end of table.

TABLE 8A.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP, IN PLANTING ZONE I--Continued

Woody species	Group 8			Group 8K			Group 9C			Group 9L			Group 9W		
	Precipitation			Precipitation			Precipitation			Precipitation			Precipitation		
	10- 14"	15- 19"	Irrig- gated												
Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft
Conifers*:															
Austrian pine-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Black Hills spruce-----	---	---	21	---	---	17	---	---	---	---	---	---	---	---	---
Blue spruce-----	---	---	21	---	---	17	---	---	---	---	---	---	---	---	---
Eastern redcedar-----	8	10	20	6	8	16	---	**6	17	---	**7	17	---	10	20
Ponderosa pine-----	**11	13	22	**10	12	20	**8	10	21	**9	11	21	---	---	---
Rocky Mountain juniper--	8	10	17	8	10	18	**4	5	15	**5	6	15	**7	9	16
Scotch pine-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Deciduous trees:															
Boxelder-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Golden willow-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Green ash-----	11	13	30	9	11	24	---	**10	24	---	**11	24	---	16	27
Hackberry-----	---	---	26	---	---	21	---	---	---	---	---	---	---	---	---
Honeylocust-----	11	14	29	9	12	24	---	---	---	---	---	---	14	17	27
Plains cottonwood-----	---	---	41	---	---	33	---	---	35	---	---	35	---	27	41
Russian-olive-----	9	11	22	9	11	22	7	8	22	8	9	22	13	16	23
Siberian crabapple-----	---	---	---	---	---	---	---	---	---	8	---	---	---	---	---
Siberian elm-----	17	20	33	15	18	31	**9	11	26	**10	12	26	**10	13	29
Shrubs:															
American plum-----	---	---	10	---	---	8	---	---	---	---	---	---	---	---	---
Basin big sagebrush-----	3	---	---	2	---	---	---	---	---	4	---	---	---	---	---
Common chokecherry-----	---	7	11	---	6	9	---	---	---	---	---	---	---	---	---
Fourwing saltbush-----	2	---	---	2	---	---	---	---	---	3	---	---	2	2	---
Golden currant-----	---	---	---	---	---	---	---	---	---	---	---	---	3	4	---
Greasewood-----	---	---	---	---	---	---	---	---	---	3	---	---	3	2	---
Lilac-----	4	5	10	4	5	10	---	4	10	---	5	10	**5	6	10
Nanking cherry-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Peking cotoneaster-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Redosier dogwood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	2	---	---	2	---	---	---	---	---	3	---	---	2	3	---
Rugosa rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Saskatoon serviceberry--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Siberian peashrub-----	5	6	12	4	5	10	3	4	10	4	5	10	5	8	12
Silver buffaloberry-----	---	6	12	---	6	12	---	4	11	---	5	11	---	7	11
Skunkbush sumac-----	3	5	8	3	5	9	---	3	9	3	4	9	3	5	9
Tatarian honeysuckle-----	5	7	11	5	7	11	3	4	11	4	5	11	6	7	11
Western sandcherry-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

* New plantings in areas that are subject to high winds require protection from the winds during the 3- to 5-year establishment period. A midwinter watering is recommended to prevent foliar desiccation.

** Supplemental water is needed during the 3- to 5-year establishment period.

TABLE 8B.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP, IN PLANTING ZONE II

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 1		Group 1KW		Group 2		Group 2KW		Group 3	
	10-14" precipitation	Irrigation								
	Ft	Ft								
Conifers:										
Austrian pine-----	---	22	---	---	---	22	---	---	---	22
Blue spruce-----	15	22	---	22	14	22	---	22	---	22
Eastern redcedar-----	**16	23	15	22	16	23	16	22	10	21
Ponderosa pine-----	10	22	**16	23	**17	22	**17	23	**14	22
Rocky Mountain juniper--	10	21	10	21	11	21	**11	21	8	18
Scotch pine-----	---	21	---	---	---	21	---	---	---	20
Deciduous trees:										
Boxelder-----	---	21	---	---	---	21	---	---	---	20
Golden willow-----	**20	31	**20	31	**22	31	**22	31	---	30
Green ash-----	**14	28	**14	27	**16	28	**16	27	13	28
Honeylocust-----	15	28	15	28	17	28	**17	28	14	27
Plains cottonwood-----	*28	41	**28	41	**30	41	**30	41	---	41
Russian olive-----	16	24	16	24	18	24	**18	24	13	23
Siberian crabapple-----	**11	19	---	---	**13	19	---	---	---	19
Siberian elm-----	**20	33	**20	33	**22	33	**22	33	**18	33
Shrubs:										
American plum-----	**7	10	**7	10	**8	10	10	10	---	11
Basin big sagebrush-----	---	---	---	---	---	---	---	---	---	---
Common chokecherry-----	**7	11	**7	11	**8	11	10	11	**6	11
Fourwing saltbush-----	2	3	2	3	2	3	2	3	2	---
Golden currant-----	---	6	---	---	**4	6	6	---	---	6
Greasewood-----	---	---	3	---	---	---	3	---	---	---
Lilac-----	**5	10	**5	10	**6	10	**6	10	**5	10
Nanking cherry-----	**3	9	---	---	---	9	---	---	**3	8
Peking cotoneaster-----	**3	8	---	---	**4	---	---	---	**3	8
Redosier dogwood-----	---	8	---	---	**4	8	---	---	---	8
Rubber rabbitbrush-----	---	---	2	---	---	---	---	---	---	---
Rugosa rose-----	2	6	---	---	3	6	2	---	3	6
Saskatoon serviceberry--	---	7	---	---	**4	7	---	---	---	5
Siberian peashrub-----	7	13	5	13	8	13	---	13	7	12
Silver buffaloberry-----	---	12	---	12	**5	12	**5	12	---	11
Skunkbush sumac-----	4	9	4	9	5	9	5	9	3	9
Tatarian honeysuckle-----	6	11	5	11	7	11	6	11	5	11
Western sandcherry-----	2	3	---	---	2	3	---	---	2	3

See footnote at end of table.

TABLE 8B.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20,
BY SUITABILITY GROUP, IN PLANTING ZONE II

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 4		Group 4C		Group 4CK		Group 4K	
	10-14" precipi- tation	Irri- gated	10-14" precipi- tation	Irri- gated	10-14" precipi- tation	Irri- gated	10-14" precipi- tation	Irri- gated
	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft
Conifers:								
Austrian pine-----	---	22	---	---	---	---	---	---
Blue spruce-----	---	20	---	19	---	18	---	19
Eastern redcedar-----	10	20	8	20	7	19	9	19
Ponderosa pine-----	12	22	**9	21	**9	21	12	22
Rocky Mountain juniper--	8	18	8	18	8	18	8	18
Scotch pine-----	---	20	---	---	---	---	---	---
Deciduous trees:								
Boxelder-----	---	19	---	19	---	---	---	---
Golden willow-----	---	29	---	29	---	29	---	29
Green ash-----	**13	28	**10	25	**9	22	**12	26
Honeylocust-----	13	26	12	24	12	24	13	26
Plains cottonwood-----	---	41	---	41	---	41	---	41
Russian olive-----	11	23	9	22	9	22	11	23
Siberian crabapple-----	---	19	---	19	---	---	---	---
Siberian elm-----	**16	33	**15	31	**15	31	**16	33
Shrubs:								
American plum-----	---	10	---	10	---	10	---	10
Basin big sagebrush-----	---	---	---	---	---	---	---	---
Common chokecherry-----	**7	11	**7	11	**7	11	**7	11
Fourwing saltbush-----	2	3	2	3	2	3	2	3
Golden currant-----	---	6	---	6	---	---	---	---
Greasewood-----	---	---	---	---	---	---	---	---
Lilac-----	**5	10	**4	9	**4	9	**5	10
Nanking cherry-----	**3	8	**3	8	---	---	---	---
Peking cotoneaster-----	**3	8	---	8	---	---	---	---
Redosier dogwood-----	---	8	---	7	---	---	---	---
Rubber rabbitbrush-----	2	---	2	---	2	---	2	---
Rugosa rose-----	3	6	---	5	---	---	---	---
Saskatoon serviceberry--	---	5	---	5	---	---	---	---
Siberian peashrub-----	6	12	4	9	4	9	5	11
Silver buffaloberry-----	---	10	---	10	---	10	---	10
Skunkbush sumac-----	3	9	---	8	---	8	3	9
Tatarian honeysuckle-----	5	11	4	11	4	11	5	11
Western sandcherry-----	2	3	---	3	---	---	---	---

See footnotes at end of table.

TABLE 8B.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20,
BY SUITABILITY GROUP, IN PLANTING ZONE II

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 5		Group 5K		Group 5KK		Group 6	
	10-14"		10-14"		10-14"		10-14"	
	precipi- tation	Irri- gated	precipi- tation	Irri- gated	precipi- tation	Irri- gated	precipi- tation	Irri- gated
	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft
Conifers:								
Austrian pine-----	---	22	---	---	---	---	---	18
Blue spruce-----	---	21	---	21	---	19	---	17
Eastern redcedar-----	10	20	8	20	7	18	6	16
Ponderosa pine-----	**13	22	**11	22	**9	20	**9	16
Rocky Mountain juniper--	8	17	8	17	7	15	*6	14
Scotch pine-----	---	22	---	---	---	---	---	---
Deciduous trees:								
Boxelder-----	---	20	---	---	---	---	---	16
Golden willow-----	---	29	---	---	---	---	---	---
Green ash-----	**12	26	**11	27	**9	22	---	23
Honeylocust-----	12	26	11	28	9	23	---	21
Plains cottonwood-----	---	41	---	41	---	35	---	28
Russian olive-----	11	23	9	23	8	21	8	18
Siberian crabapple-----	---	19	---	---	---	---	---	14
Siberian elm-----	**17	33	**16	33	**15	30	**12	26
Shrubs:								
American plum-----	---	10	---	10	---	8	---	6
Basin big sagebrush-----	3	---	3	---	3	---	3	---
Common chokecherry-----	**6	11	---	11	---	9	---	7
Fourwing saltbush-----	2	---	2	---	2	---	2	---
Golden currant-----	---	6	---	---	---	---	---	5
Greasewood-----	---	---	3	---	3	---	---	---
Lilac-----	**5	10	**4	10	**4	8	---	7
Nanking cherry-----	---	8	---	---	---	---	---	6
Peking cotoneaster-----	---	8	---	---	---	---	---	7
Redosier dogwood-----	---	8	---	---	---	---	---	6
Rubber rabbitbrush-----	3	---	2	---	2	---	3	---
Rugosa rose-----	2	6	---	---	---	---	2	5
Saskatoon serviceberry--	---	5	---	---	---	---	---	4
Siberian peashrub-----	5	12	4	12	3	10	3	9
Silver buffaloberry-----	---	12	---	11	---	9	---	9
Skunkbush sumac-----	3	8	3	8	3	7	3	7
Tatarian honeysuckle----	5	11	4	11	3	9	---	8
Western sandcherry-----	2	3	---	---	---	---	---	3

See footnotes at end of table.

TABLE 8B.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20,
BY SUITABILITY GROUP, IN PLANTING ZONE II

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 6D		Group 6DK		Group 6G		Group 6GK	
	10-14"	Irrigation	10-14"	Irrigation	10-14"	Irrigation	10-14"	Irrigation
	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft
Conifers:								
Austrian pine-----	---	20	---	---	---	20	---	---
Blue spruce-----	---	17	---	17	---	18	---	19
Eastern redcedar-----	7	16	8	17	8	17	7	17
Ponderosa pine-----	**11	22	**11	22	**10	20	**10	22
Rocky Mountain juniper--	7	15	8	15	7	15	7	15
Scotch pine-----	---	---	---	---	---	---	---	---
Deciduous trees:								
Boxelder-----	---	18	---	---	---	18	---	---
Golden willow-----	---	29	---	29	---	---	---	28
Green ash-----	**11	26	**9	25	---	26	---	26
Honeylocust-----	12	26	10	24	---	26	---	26
Plains cottonwood-----	---	35	---	35	---	35	---	35
Russian olive-----	11	22	11	22	10	22	10	22
Siberian crabapple-----	---	19	---	---	---	19	---	---
Siberian elm-----	**17	30	**15	30	**15	32	**15	30
Shrubs:								
American plum-----	---	10	---	10	---	10	---	8
Basin big sagebrush-----	3	---	3	---	3	---	3	---
Common chokecherry-----	---	11	---	11	---	11	---	10
Fourwing saltbush-----	2	---	2	---	2	---	2	---
Golden currant-----	---	6	---	---	---	6	---	---
Greasewood-----	---	---	---	---	---	---	---	---
Lilac-----	---	9	---	9	---	9	---	9
Nanking cherry-----	---	8	---	---	---	7	---	---
Peking cotoneaster-----	---	7	---	---	---	8	---	---
Redosier dogwood-----	---	7	---	---	---	7	---	---
Rubber rabbitbrush-----	3	---	3	---	3	---	3	---
Rugosa rose-----	2	6	---	---	2	6	---	---
Saskatoon serviceberry--	---	5	---	---	---	5	---	---
Siberian peashrub-----	6	12	5	11	5	12	4	11
Silver buffaloberry-----	---	11	---	11	---	11	---	11
Skunkbush sumac-----	**3	8	**3	8	4	8	**3	8
Tatarian honeysuckle-----	**6	11	**6	11	---	11	**5	11
Western sandcherry-----	---	3	---	---	---	3	---	3

See footnotes at end of table.

TABLE 8B.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20,
BY SUITABILITY GROUP, IN PLANTING ZONE II

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 6GKK		Group 6K		Group 6KK		Group 7	
	10-14" precipi- tation	Irri- gated	10-14" precipi- tation	Irri- gated	10-14" precipi- tation	Irri- gated	10-14" precipi- tation	Irri- gated
	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft
Conifers:								
Austrian pine-----	---	---	---	---	---	---	---	22
Blue spruce-----	---	15	---	17	---	16	---	21
Eastern redcedar-----	6	14	6	16	**6	16	**8	20
Ponderosa pine-----	**8	18	**9	16	**7	17	---	22
Rocky Mountain juniper--	6	14	*6	14	**6	15	**6	18
Scotch pine-----	---	---	---	---	---	---	---	---
Deciduous trees:								
Boxelder-----	---	---	---	---	---	---	---	20
Golden willow-----	---	22	---	---	---	---	---	---
Green ash-----	---	21	---	20	**7	20	---	28
Honeylocust-----	---	21	---	21	**8	21	---	26
Plains cottonwood-----	---	28	---	28	---	28	---	30
Russian olive-----	8	22	8	18	**8	18	---	23
Siberian crabapple-----	---	---	---	14	---	---	---	19
Siberian elm-----	13	29	**12	26	**12	26	---	32
Shrubs:								
American plum-----	**7	8	---	6	---	6	---	10
Basin big sagebrush-----	2	---	3	---	**2	---	---	---
Common chokecherry-----	**8	8	---	7	---	7	---	11
Fourwing saltbush-----	2	---	2	---	2	---	---	---
Golden currant-----	---	---	---	5	---	---	---	6
Greasewood-----	---	---	---	---	---	---	---	---
Lilac-----	**6	6	---	6	---	6	---	9
Nanking cherry-----	---	---	---	6	---	---	---	7
Peking cotoneaster-----	---	---	---	7	---	---	---	8
Redosier dogwood-----	---	---	---	6	---	---	---	7
Rubber rabbitbrush-----	2	---	3	---	2	---	3	---
Rugosa rose-----	---	---	---	---	---	---	---	6
Saskatoon serviceberry--	---	---	---	---	---	---	---	5
Siberian peashrub-----	**3	9	**3	9	**3	9	---	12
Silver buffaloberry-----	---	8	---	8	---	8	---	11
Skunkbush sumac-----	**3	7	**3	7	**3	7	---	8
Tatarian honeysuckle-----	---	9	---	8	---	9	---	11
Western sandcherry-----	---	3	---	3	---	3	---	3

See footnotes at end of table.

TABLE 8B.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE II

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 8		Group 8K		Group 9C		Group 9L		Group 9W	
	10-14" precipi- tation	Irri- gated								
	Ft	Ft								
Conifers:										
Austrian pine-----	---	---	---	---	---	---	---	---	---	---
Blue spruce-----	---	21	---	19	---	---	---	---	---	---
Eastern redcedar-----	8	20	6	16	---	15	---	17	---	16
Ponderosa pine-----	**11	22	**9	18	**9	16	**10	21	---	---
Rocky Mountain juniper--	8	17	7	15	**4	14	**5	16	**7	15
Scotch pine-----	---	---	---	---	---	---	---	---	---	---
Deciduous trees:										
Boxelder-----	---	---	---	---	---	---	---	---	---	---
Golden willow-----	---	30	---	28	---	---	---	---	---	---
Green ash-----	11	30	9	26	---	21	---	22	---	25
Honeylocust-----	11	29	9	26	---	---	---	---	14	27
Plains cottonwood-----	---	41	---	35	---	35	---	35	---	41
Russian olive-----	12	23	7	22	8	22	9	22	13	23
Siberian crabapple-----	---	---	---	---	---	---	---	---	---	---
Siberian elm-----	17	33	13	30	**9	30	**10	33	15	32
Shrubs:										
American plum-----	---	10	---	8	---	---	---	---	---	---
Basin big sagebrush-----	3	---	2	---	2	---	3	---	---	---
Common chokecherry-----	---	11	---	9	---	---	---	---	---	---
Fourwing saltbush-----	2	---	2	---	2	---	2	---	2	---
Golden currant-----	---	---	---	---	---	---	---	---	---	---
Greasewood-----	---	---	---	---	---	---	2	---	4	---
Lilac-----	4	10	3	9	---	8	---	8	**5	10
Nanking cherry-----	---	---	---	---	---	---	---	---	---	---
Peking cotoneaster-----	---	---	---	---	---	---	---	---	---	---
Redosier dogwood-----	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	3	---	3	---	2	---	2	---	3	---
Rugosa rose-----	---	---	---	---	---	---	---	---	---	---
Saskatoon serviceberry--	---	---	---	---	---	---	---	---	---	---
Siberian peashrub-----	5	12	4	---	3	10	4	10	6	12
Silver buffaloberry-----	---	12	---	11	---	10	---	10	---	11
Skunkbush sumac-----	3	9	---	6	---	7	3	7	3	8
Tatarian honeysuckle-----	5	11	4	10	3	9	4	9	6	10
Western sandcherry-----	---	---	---	---	---	---	---	---	---	---

* New plantings in areas that are prone to high wind need protection from the wind during the 3- to 5- year establishment period. A midwinter watering is also recommended to prevent foliar dessication.

** Supplemental water is needed during the 3- to 5- year establishment period.

TABLE 8C.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP, IN PLANTING ZONE III

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 1				Group 1KW				Group 2				Group 2KW				Group 3			
	Precipitation				Precipitation				Precipitation				Precipitation				Precipitation			
	10-14"	15-19"	20+"	Irrigated																
	Ft	Ft	Ft	Ft																
Conifers:																				
Blue spruce-----	**14	16	20	22	**13	16	20	22	**15	17	21	22	**14	17	21	22	---	16	18	22
Douglas fir-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	20	25	26
Englemann spruce-----	**14	16	25	26	---	---	---	---	**15	17	26	26	---	---	---	---	---	16	18	22
Lodgepole pine-----	---	---	---	---	---	---	---	---	---	---	19	---	---	---	---	---	---	20	25	26
Ponderosa pine-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**12	16	18	24
Rocky Mountain juniper--	**10	14	18	21	**10	14	18	21	---	---	---	---	---	---	---	---	9	10	12	20
Scotch pine-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	15	18	22
Subalpine fir-----	**12	15	19	15	---	---	---	---	**12	**13	15	15	---	---	---	---	---	---	13	13
White fir-----	**14	17	22	26	---	---	---	---	**15	18	23	26	---	---	---	---	---	---	---	---
Deciduous trees:																				
Boxelder-----	---	16	18	22	---	---	---	---	**14	17	19	22	---	---	---	---	---	14	16	22
Golden willow-----	**21	24	26	32	**19	23	26	32	**22	25	27	32	**21	24	27	32	---	---	---	32
Green ash-----	14	18	22	30	14	18	22	30	15	19	23	30	15	19	23	30	12	16	18	30
Narrowleaf cottonwood--	**22	27	36	42	---	---	---	---	**25	29	38	42	---	---	---	---	---	---	---	38
Plains cottonwood-----	**22	27	36	42	**20	25	36	42	**25	29	38	42	**23	27	38	42	---	---	---	35
Russian olive-----	15	18	22	25	15	18	20	25	16	19	23	25	16	19	23	25	13	15	16	25
Siberian crabapple-----	**11	12	15	19	---	---	---	---	**12	13	16	19	---	---	---	---	---	12	15	19
Siberian elm-----	**20	27	28	36	**20	27	28	35	**22	29	30	36	**22	29	30	35	**20	26	28	35
White willow-----	**21	24	26	32	**19	23	26	32	**23	26	28	32	**23	26	28	32	---	---	---	32
Shrubs:																				
American plum-----	---	**6	7	11	---	**6	7	11	**4	**7	7	11	**4	**7	7	11	---	**6	7	11
Basin big sagebrush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Common chokecherry-----	**7	8	8	12	**7	8	8	12	**8	9	9	12	**8	9	9	12	**7	8	9	12
Common snowberry-----	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Fourwing saltbush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Golden currant-----	---	**4	4	4	---	---	---	---	**4	**4	4	4	---	---	---	---	---	4	4	4
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	**4	6	6	10	**4	6	6	10	**5	7	7	10	**5	7	7	10	**4	6	7	10
Redosier dogwood-----	---	---	6	8	---	---	---	---	---	**6	7	8	---	---	---	---	---	---	5	6
Rocky Mountain maple-----	---	7	9	10	---	---	---	---	**7	8	9	10	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rugosa rose-----	3	4	4	4	3	4	4	4	**4	4	4	4	**4	4	4	4	4	4	4	4
Saskatoon serviceberry--	---	4	4	4	---	---	---	---	**4	4	4	4	---	---	---	---	---	4	4	5
Siberian peashrub-----	5	7	7	10	5	7	7	10	6	8	8	10	6	8	8	10	5	7	7	9
Silver buffaloberry-----	---	**7	9	11	---	**7	9	11	**5	**8	9	11	**5	8	9	11	---	**7	8	11
Skunkbush sumac-----	3	5	6	7	3	5	6	7	4	6	6	7	4	6	6	7	3	5	6	7
Tatarian honeysuckle-----	5	6	7	11	5	6	7	11	6	7	8	11	6	7	8	11	5	7	8	11
Woods rose-----	3	4	4	4	3	4	4	4	---	4	4	4	4	4	4	4	4	---	---	---

See footnote at end of table.

TABLE 8C.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE III--Continued

Woody species	Group 4				Group 4C				Group 4CK				Group 4K			
	Precipitation				Precipitation				Precipitation				Precipitation			
	10- 14"	15- 19"	20+"	Irri- gated												
	Ft	Ft	Ft	Ft												
Conifers:																
Blue spruce-----	---	14	17	22	---	---	16	20	---	---	15	19	---	13	16	21
Douglas fir-----	---	16	20	26	---	---	---	---	---	---	---	---	---	---	---	---
Englemann spruce-----	---	14	16	22	---	---	17	20	---	---	---	---	---	---	---	---
Lodgepole pine-----	---	16	20	26	---	---	---	---	---	---	---	---	---	---	---	---
Ponderosa pine-----	**12	15	17	24	**10	12	14	22	**9	11	13	21	**11	14	16	23
Rocky Mountain juniper--	9	11	13	20	9	10	12	20	9	10	12	20	9	11	13	20
Scotch pine-----	---	---	15	22	---	---	---	20	---	---	---	---	---	---	---	---
Subalpine fir-----	---	---	12	12	---	---	---	---	---	---	---	---	---	---	---	---
White fir-----	---	---	12	12	---	---	---	---	---	---	---	---	---	---	---	---
Deciduous trees:																
Boxelder-----	---	**13	15	22	---	---	---	20	---	---	---	---	---	---	---	---
Golden willow-----	---	---	---	32	---	---	---	28	---	---	---	26	---	---	---	30
Green ash-----	13	15	17	30	11	12	14	27	10	11	13	25	12	14	16	28
Narrowleaf cottonwood---	---	---	---	35	---	---	---	32	---	---	---	---	---	---	---	---
Plains cottonwood-----	---	---	---	36	---	---	---	33	---	---	---	33	---	---	---	36
Russian olive-----	11	13	16	25	10	11	13	22	10	11	13	25	11	13	16	22
Siberian crabapple-----	---	13	16	20	---	12	15	19	---	---	---	---	---	---	---	---
Siberian elm-----	**19	24	26	36	**19	21	24	32	**19	21	24	32	**19	24	26	36
White willow-----	---	---	---	32	---	---	---	27	---	---	---	25	---	---	---	30
Shrubs:																
American plum-----	---	**6	7	11	---	**6	6	9	---	**6	6	9	---	**6	7	11
Basin big sagebrush-----	---	---	---	---	2	3	---	---	2	3	---	---	---	---	---	---
Common chokecherry-----	**7	8	8	12	**7	8	8	11	**7	8	8	11	**7	8	8	12
Common snowberry-----	3	3	3	3	---	---	---	---	---	---	---	---	3	3	3	3
Fourwing saltbush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Golden currant-----	---	3	4	4	---	3	3	4	---	---	---	---	---	---	---	4
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	**4	6	7	10	**4	5	6	10	**4	5	6	10	**4	6	7	10
Redosier dogwood-----	---	---	6	7	---	---	---	7	---	---	---	---	---	---	---	7
Rocky Mountain Maple-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	---	---	---	---	2	3	---	---	2	3	3	---	---	---	---	---
Rugosa rose-----	3	4	4	4	---	3	3	4	---	3	3	4	3	4	4	4
Saskatoon serviceberry---	---	---	4	5	---	---	---	---	---	---	---	---	---	---	---	5
Siberian peashrub-----	6	7	8	9	4	5	7	8	---	---	---	---	---	---	---	---
Silver buffaloberry-----	---	**7	9	11	---	**5	7	11	---	**5	8	11	---	**7	9	11
Skunkbush sumac-----	4	6	6	7	3	4	5	6	3	4	5	6	4	6	6	7
Tatarian honeysuckle---	5	6	9	11	4	6	8	11	4	6	8	11	5	6	9	11
Woods rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 8C.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP, IN PLANTING ZONE III--Continued

Woody species	Group 5				Group 5K				Group 5KK				Group 6			
	Precipitation				Precipitation				Precipitation				Precipitation			
	10- 14"	15- 19"	20+"	Irrig- gated												
	Ft	Ft	Ft	Ft												
Conifers:																
Blue spruce-----	---	16	20	22	---	---	16	20	---	---	16	20	---	---	11	14
Douglas fir-----	---	---	18	24	---	---	---	---	---	---	---	---	---	---	---	---
Englemann spruce-----	---	17	21	24	---	---	---	---	---	---	---	---	---	---	11	14
Lodgepole pine-----	---	17	22	26	---	---	---	---	---	---	---	---	---	---	13	18
Ponderosa pine-----	**12	17	19	24	**10	12	14	22	**10	12	14	22	**8	**11	13	18
Rocky Mountain juniper--	9	11	13	18	9	10	12	17	9	10	12	17	**7	**8	9	14
Scotch pine-----	---	---	18	22	---	---	---	---	---	---	---	---	---	---	---	17
Subalpine fir-----	---	---	13	13	---	---	---	---	---	---	---	---	---	---	---	---
White fir-----	---	---	18	24	---	---	---	---	---	---	---	---	---	---	---	18
Deciduous trees:																
Boxelder-----	---	---	16	20	---	---	---	---	---	---	---	---	---	---	---	18
Golden willow-----	---	---	---	25	---	---	---	25	---	---	---	25	---	---	---	---
Green ash-----	12	16	18	26	11	14	16	26	10	12	14	26	---	**9	13	21
Narrowleaf cottonwood---	---	---	---	33	---	---	---	31	---	---	---	31	---	---	---	---
Plains cottonwood---	---	---	---	33	---	---	---	31	---	---	---	31	---	---	---	26
Russian olive-----	12	14	18	25	11	13	17	25	10	12	16	25	**8	**9	13	19
Siberian crabapple-----	---	12	14	18	---	---	---	---	---	---	---	---	---	---	---	---
Siberian elm-----	**18	24	26	33	**17	21	24	31	**17	21	24	31	---	**15	19	23
White willow-----	---	---	---	27	---	---	---	27	---	---	---	27	---	---	---	---
Shrubs:																
American plum-----	---	**5	7	10	---	---	---	11	---	---	---	11	---	---	6	7
Basin big sagebrush---	2	3	---	---	3	3	---	---	3	3	---	---	2	2	2	---
Common chokecherry-----	**7	8	9	11	---	7	9	10	---	7	9	10	---	**7	7	9
Common snowberry-----	---	3	3	3	---	3	3	3	---	3	3	3	---	---	---	---
Fourwing saltbush-----	---	---	---	---	2	2	---	---	2	2	---	---	---	---	---	---
Golden currant-----	---	**3	4	4	---	---	---	---	---	---	---	---	---	---	3	3
Greasewood-----	---	---	---	---	3	3	---	---	3	3	---	---	---	---	---	---
Lilac-----	**5	6	7	9	**5	6	7	9	**5	6	7	9	---	**3	5	7
Redosier dogwood-----	---	---	6	6	---	---	---	---	---	---	---	---	---	---	---	---
Rocky Mountain Maple---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	---	---	---	---	2	---	---	---	2	---	---	---	---	---	---	---
Rugosa rose-----	3	4	4	4	4	---	---	---	4	---	---	---	---	---	3	3
Saskatoon serviceberry---	---	---	4	5	---	---	---	---	---	---	---	---	---	---	3	5
Siberian peashrub-----	6	7	8	9	6	7	7	9	6	7	7	9	**4	**5	5	7
Silver buffaloberry-----	---	**7	8	11	---	**6	8	11	---	**6	8	11	---	**5	6	8
Skunkbush sumac-----	3	5	6	6	4	5	5	6	4	5	5	6	---	**3	5	6
Tatarian honeysuckle---	4	6	8	11	5	7	8	11	5	7	8	11	**4	**6	6	9
Woods rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 8C.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE III--Continued

Woody species	Group 6D				Group 6DK				Group 6G				Group 6GK			
	Precipitation				Precipitation				Precipitation				Precipitation			
	10- 14"	15- 19"	20+"	Irri- gated												
	Ft	Ft	Ft	Ft												
Conifers:																
Blue spruce-----	---	---	14	18	---	---	13	16	---	---	14	18	---	---	13	16
Douglas fir-----	---	---	18	20	---	---	---	---	---	---	18	20	---	---	---	---
Englemann spruce-----	---	---	16	20	---	---	---	---	---	---	14	18	---	---	---	---
Lodgepole pine-----	---	16	19	25	---	---	---	---	---	---	16	22	---	---	---	---
Ponderosa pine-----	**10	14	15	20	**10	14	15	20	**10	14	15	20	9	12	14	18
Rocky Mountain juniper--	9	11	13	18	8	10	12	18	9	11	13	18	9	10	12	18
Scotch pine-----	---	---	18	21	---	---	---	---	---	---	18	21	---	---	---	---
Subalpine fir-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
White fir-----	---	---	17	21	---	---	---	---	---	---	17	22	---	---	---	---
Deciduous trees:																
Boxelder-----	---	---	---	20	---	---	---	---	---	---	---	18	---	---	---	---
Golden willow-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Green ash-----	9	11	13	22	9	11	13	22	9	11	13	22	9	11	13	22
Narrowleaf cottonwood---	---	---	---	30	---	---	---	30	---	---	---	30	---	---	---	30
Plains cottonwood-----	---	---	---	32	---	---	---	29	---	---	---	30	---	---	---	29
Russian olive-----	11	13	15	22	11	13	15	22	10	12	14	23	10	12	14	23
Siberian crabapple-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Siberian elm-----	**16	20	24	29	**16	20	24	29	**16	20	24	29	**16	20	24	29
White willow-----	---	---	---	27	---	---	---	24	---	---	---	27	---	---	---	27
Shrubs:																
American plum-----	---	---	6	8	---	---	6	8	---	---	6	8	---	---	6	8
Basin big sagebrush-----	3	3	---	---	3	3	---	---	3	3	---	---	3	3	---	---
Common chokecherry-----	---	7	8	11	---	7	8	11	---	7	8	11	---	7	8	11
Common snowberry-----	---	2	3	3	---	2	3	3	---	---	---	---	---	---	---	---
Fourwing saltbush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Golden currant-----	---	3	3	4	---	---	---	---	---	---	4	4	---	---	---	---
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	**5	5	6	9	---	5	6	9	---	5	6	9	---	5	6	9
Redosier dogwood-----	---	---	6	8	---	---	---	---	---	---	6	8	---	---	---	---
Rocky Mountain Maple-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	2	3	---	---	---	---	---	---	2	3	---	---	2	3	---	---
Rugosa rose-----	---	3	3	4	---	---	---	---	---	3	4	4	---	---	---	---
Saskatoon serviceberry--	---	---	4	5	---	---	---	---	---	4	6	---	---	---	---	---
Siberian peashrub-----	**4	5	7	8	**4	5	7	8	**4	5	6	8	**4	5	6	8
Silver buffaloberry-----	---	**7	8	11	---	**7	8	11	---	**7	8	11	---	**7	8	11
Skunkbush sumac-----	**3	4	5	8	3	4	5	8	---	3	5	6	---	3	5	6
Tatarian honeysuckle----	**5	7	8	11	**4	6	7	10	**5	7	8	11	**4	6	7	10
Woods rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 8C.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP,
IN PLANTING ZONE III--Continued

Woody species	Group 6GKK				Group 6K				Group 6KK				Group 7			
	Precipitation				Precipitation				Precipitation				Precipitation			
	10- 14"	15- 19"	20+"	Irrig- gated												
	Ft	Ft	Ft	Ft												
Conifers:																
Blue spruce-----	---	---	---	14	---	---	11	14	---	---	---	---	---	13	15	19
Douglas fir-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Englemann spruce-----	---	---	---	---	---	---	---	---	---	---	---	---	---	13	15	19
Lodgepole pine-----	---	---	---	---	---	---	---	---	---	---	---	---	---	13	15	20
Ponderosa pine-----	9	12	14	19	8	11	13	19	**8	11	13	18	**10	**13	17	22
Rocky Mountain juniper--	8	9	11	17	7	8	9	14	7	8	9	14	**8	**9	11	16
Scotch pine-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	17	20
Subalpine fir-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	11	12
White fir-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16	22
Deciduous trees:																
Boxelder-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	14	19
Golden willow-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	25
Green ash-----	8	10	12	21	---	**9	11	20	---	**8	11	20	---	**10	14	23
Narrowleaf cottonwood--	---	---	---	27	---	---	---	27	---	---	---	25	---	---	---	---
Plains cottonwood-----	---	---	---	26	---	---	---	26	---	---	---	25	---	---	---	26
Russian olive-----	9	11	13	22	8	10	14	30	8	10	12	20	---	**9	13	19
Siberian crabapple-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Siberian elm-----	**15	19	23	28	---	15	20	25	---	15	20	25	---	**15	19	23
White willow-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	25
Shrubs:																
American plum-----	---	---	6	8	---	---	6	8	---	---	5	7	---	5	6	9
Basin big sagebrush-----	3	3	---	---	3	3	---	---	3	3	---	---	2	3	3	---
Common chokecherry-----	---	**6	7	10	---	**5	7	10	---	**5	7	10	**6	7	8	10
Common snowberry-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3	3
Fourwing saltbush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Golden currant-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3	3
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	---	**4	6	8	---	**4	6	8	---	**4	6	8	**3	4	6	8
Redosier dogwood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rocky Mountain Maple-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	2	3	---	---	2	3	---	---	2	3	---	---	---	---	---	---
Rugosa rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3	3
Saskatoon serviceberry--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3	5
Siberian peashrub-----	**3	4	5	7	---	4	5	7	---	**5	5	7	**5	**6	6	7
Silver buffaloberry-----	---	**6	7	10	---	**6	8	10	---	**6	8	10	---	**6	7	10
Skunkbush sumac-----	---	**3	5	6	---	**3	5	6	---	**3	5	6	---	**4	4	6
Tatarian honeysuckle-----	**4	6	7	10	---	4	5	8	---	5	5	8	**4	**6	7	10
Woods rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 8C.--EXPECTED HEIGHTS OF SELECTED WOODY SPECIES AT AGE 20, BY SUITABILITY GROUP, IN PLANTING ZONE III

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 8				Group 8K				Group 9C				Group 9L				Group 9W			
	Precipitation			Irri- gated																
	10- 14"	15- 19"	20+"		10- 14"	15- 19"	20+"		10- 14"	15- 19"	20+"		10- 14"	15- 19"	20+"		10- 14"	15- 19"	20+"	
Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	
Conifers:																				
Blue spruce-----	---	14	16	21	---	---	16	21	---	---	---	---	---	---	---	---	---	---	---	
Douglas fir-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Englemann spruce-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Lodgepole pine-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Ponderosa pine-----	**11	12	17	22	**10	12	17	22	---	---	---	---	---	---	---	---	---	---	---	
Rocky Mountain juniper--	8	10	13	18	8	10	13	18	**7	8	9	16	**7	8	9	16	**8	9	10	16
Scotch pine-----	---	14	17	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Subalpine fir-----	---	---	13	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
White fir-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Deciduous trees:																				
Boxelder-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Golden willow-----	---	---	---	27	---	---	---	26	---	---	---	23	---	---	---	23	---	---	23	28
Green ash-----	12	15	17	29	11	13	16	29	---	**11	14	26	---	**11	14	26	---	13	17	28
Narrowleaf cottonwood---	---	---	---	32	---	---	---	32	---	---	---	30	---	---	---	30	---	---	---	33
Plains cottonwood-----	---	---	---	35	---	---	---	35	---	---	---	35	---	---	---	35	---	---	---	42
Russian olive-----	13	15	16	25	13	15	16	25	**9	12	16	24	**9	12	16	24	12	14	18	26
Siberian crabapple-----	---	12	15	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Siberian elm-----	**18	24	28	33	**18	20	28	33	**15	20	22	28	**15	20	22	28	**16	22	24	30
White willow-----	---	---	---	30	---	---	---	28	---	---	---	27	---	---	---	27	---	---	27	30
Shrubs:																				
American plum-----	---	**6	7	11	---	**5	7	10	---	---	---	---	---	---	---	---	---	---	---	
Basin big sagebrush-----	3	3	---	---	3	3	---	---	---	---	---	---	---	---	---	---	---	---	---	
Common chokecherry-----	**7	8	9	12	**7	8	9	12	---	---	---	---	---	---	---	---	---	---	---	
Common snowberry-----	---	3	3	3	---	3	3	3	---	---	---	---	---	---	---	---	---	---	---	
Fourwing saltbush-----	2	---	---	---	2	2	---	---	2	2	---	---	2	2	---	---	3	3	---	
Golden currant-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Greasewood-----	---	---	---	---	---	---	---	---	2	4	---	---	2	4	---	---	3	4	---	
Lilac-----	**5	6	7	10	**5	6	7	10	**5	6	7	10	**4	5	6	9	**5	6	8	10
Redosier dogwood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Rocky Mountain maple-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Rubber rabbitbrush-----	2	---	---	---	2	3	---	---	2	2	---	---	2	2	---	---	2	2	---	
Rugosa rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Saskatoon serviceberry--	---	---	5	6	---	---	4	6	---	---	---	---	---	---	---	---	---	---	---	
Siberian peashrub-----	6	7	8	9	5	6	7	9	---	---	---	---	---	---	---	---	---	---	---	
Silver buffaloberry-----	---	**7	8	11	---	**5	7	10	---	7	8	11	---	**6	7	11	---	**6	7	10
Skunkbush sumac-----	3	5	6	7	3	5	6	7	---	5	6	7	---	5	6	7	---	5	6	7
Tatarian honeysuckle-----	5	7	8	11	5	7	8	11	4	5	6	10	4	5	6	10	4	5	6	10
Woods rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

** Supplemental water is needed during the 3- to 5-year establishment period.

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES

Soil name and map symbol	Suitability group	Planting zone
100: Aberone-----	6KK	I
101: Abston-----	10	II
Bullock-----	10	II
102: Alcova-----	6G	II
Borollic Camborthids----	---	---
103: Alcova, shallow substratum-----	6G	II
Lupinto-----	6GKK	II
Dahlquist-----	6	II
104: Alcova, calcareous subsoil-----	6G	II
Rock River-----	5	II
105-----	3	II
Almy		
106*: Almy-----	3	II
Urban land-----	---	---
107*: Almy-----	8	II
Tismid-----	9L	II
108-----	9W	II
Alogia		
109*: Alogia-----	9W	II
Urban land-----	---	---
110-----	8	II
Anchutz		
111: Ansel-----	5	III
Granile-----	6	III
112*: Bateson-----	6G	II
Shirleybasin-----	4CK	II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
113: Blackhall-----	10	II
Browline, moist-----	6KK	II
114*: Blackhall-----	10	II
Santanka-----	6DK	II
Rock outcrop.		
115: Blazon-----	10	II
Chaperton-----	6DK	II
116: Blazon-----	10	II
Delphill-----	6DK	II
117*: Bonjea-----	10	III
Chugcreek-----	6D	III
Rock outcrop.		
118: Bonjea-----	10	III
Rock outcrop.		
Chugcreek-----	6D	III
119-----	2KW	II
Bosler, wet substratum		
120: Bosler-----	6GK	II
Borollic Camborthids----	6G	II
121*: Bosler, wet substratum---	2KW	II
Urban land-----	---	---
122: Boyle-----	10	III
Alderon-----	6D	III
Cathedral-----	10	III
123: Boyle-----	10	III
Boyle, thin solum-----	10	III

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
124*: Boyle-----	10	III
Rock outcrop.		
125*: Boyle-----	10	III
Lininger-----	6D	III
126-----	6KK	II
Browtine		
127: Browtine-----	6KK	II
Hilltoppe-----	10	II
128*: Bruja-----	10	II
Canwall-----	10	II
Telecan-----	8	II
129: Buffork-----	6	III
Bucklon-----	10	III
130*: Byrnie-----	10	II
Rock outcrop.		
131-----	6GKK	II
Calciborolls		
132-----	10	II
Canburn		
133-----	10	II
Cantle		
134*: Carbol-----	10	III
Rock outcrop.		
135: Carmody-----	6K	II
Edlin-----	3	II
136: Carmody-----	6K	II
Ryan Park-----	3	II
137*: Cathedral-----	10	II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
137*: Spinekop----- Rock outcrop.	8	II
138----- Center Creek	2	II
139: Chaperton, moderately saline----- Blazon-----	6DK 10	II II
140: Chaperton----- Poposhia-----	6DK 8	II II
141*: Cheadle----- Passcreek, cobbly subsoil----- Rock outcrop.	10 6K	III III
142: Cheadle----- Rock outcrop. Miracle-----	10 6D	III III
143. Cryaquolls-----	10	III
144. Cryoborolls-----	3	III
145: Cushool----- Cutback-----	6D 6K	II II
146: Cushool----- Diamondville-----	6D 6D	II II
147: Cutback----- Pinelli-----	6K 4C	II II
148: Dahlquist----- Rawlins----- Browtine-----	6 5K 5KK	II II II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
149: Dalecreek-----	2KW	III
Kovich-----	10	III
150: Delphill-----	6DK	II
Blazon-----	10	II
151: Diamondville-----	6D	II
Cushool-----	6D	II
152: Diamonkit-----	9L	II
Stylite-----	5K	II
153----- Elkol	9C	II
154*, 155*: Elkol-----	9C	II
Gerdrum Family-----	10	II
156----- Evanston	3	III
157: Evanston-----	3	III
Bonjea-----	10	III
158: Fiveoh-----	5K	II
Fiveoh, cobbly substratum-----	5KK	II
Ryan Park-----	5	II
159*: Fiveoh-----	5K	II
Fiveoh, cobbly substratum-----	5KK	II
Urban land.		
160: Fiveoh, cobbly substratum-----	5KK	II
Joemre-----	8	II
161----- Folavar	10	II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
162: Folavar-----	10	II
Borollic Camborthids-----	10	II
163----- Forelle	3	II
164*: Forelle-----	3	II
Urban land.		
165*: Forelle-----	3	II
Diamondville-----	6D	II
166: Glendive-----	1K	II
Redrob-----	2KW	II
Grenoble-----	6	II
167: Grenoble-----	6	II
Gerrard-----	10	II
168----- Greyback	10	III
169----- Gypla	10	II
170*: Gypla-----	10	II
Urban land.		
171: Hanson-----	5K	III
Quander-----	5	III
172: Hapjack-----	10	III
Rogert-----	10	III
Amesmont-----	6	III
173: Ipson-----	5	III
Evanston-----	3	III
174, 175----- Joemre	8	II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
176*:		
Kezar-----	6	III
Carbol-----	10	III
Rock outcrop.		
177:		
Kildor-----	4	III
Rock outcrop.		
178:		
Kiltabar-----	10	II
Tismid-----	9L	II
179:		
Lakehelen-----	6	III
Redfeather-----	10	III
Amesmont-----	6	III
180-----	5	III
Leavitt		
181:		
Leavitt-----	5	III
Granile-----	6	III
182:		
Leavitt-----	3	III
Hanson-----	5K	III
183:		
Leavitt-----	3	III
Quander-----	5	III
184-----	8K	II
Luhon		
185:		
Luvar-----	9L	II
Stylite-----	9L	II
Diamonkit-----	9L	II
186:		
Lymanson loam-----	6D	III
Lymanson cobbly loam-----	6D	III
187-----	1KW	II
Manada		
188-----	5K	II
McFadden		

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
189*: Miracle-----	6D	III
Cheadle-----	10	III
190: Moyerson-----	10	II
Kemmerer-----	4CK	II
191*: Nathale-----	10	III
Passcreek, cobbly subsoil-----	6K	III
Rock outcrop.		
192----- Pahlow	10	II
193: Pilotpeak-----	10	II
Canwall-----	10	II
194----- Pahlow	4C	II
195*----- Pits, mine.		
196*: Poin-----	10	III
Bowen-----	6	III
Rock outcrop.		
197: Poposhia-----	8	II
Blazon-----	10	II
198: Poposhia-----	8	II
Forelle-----	3	II
199*: Poposhia-----	8	II
Chaperton-----	6DK	II
200*: Rainbolt-----	6DK	III
Morset-----	5K	III
201: Redfeather-----	10	III

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
201: Lakehelen-----	6	III
Rogert-----	10	III
202----- Redrob	2KW	II
203: Redrob, frequently flooded-----	10	II
Grenoble-----	6	II
Redrob-----	2KW	II
204: Redrob, frequently flooded-----	10	II
Redrob-----	2KW	II
205*: Redrob, frequently flooded-----	10	II
Redrob-----	2KW	II
Urban land.		
206: Rentsac-----	10	II
Wycolo-----	6K	II
207: Renvers-----	10	II
Chalkhill-----	10	II
208: Rimton-----	6D	III
Passcreek, cobbly subsoil-----	6K	III
Miracle-----	6D	III
209*----- Riverwash	---	---
210: Rock outcrop.		
Bonjea-----	10	II
211: Rock outcrop.		
Bruja-----	10	II
Byrnie-----	10	II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
212: Rock outcrop.		
Cathedral-----	10	III
213: Rock outcrop.		
Cathedral-----	10	III
Alderon-----	6D	III
214: Rock outcrop.		
Pilotpeak-----	10	II
215: Rock outcrop.		
Rogert-----	10	II
216, 217----- Rock River	3	II
218*: Rock River-----	3	II
Urban land.		
219*: Rogert-----	10	III
Lakehelen-----	6	III
Rock outcrop.		
220: Rogert-----	10	III
Rock outcrop.		
Amesmont-----	6	III
221----- Rohonda	6R	II
222: Rohonda-----	6DK	II
Tieside-----	10	II
223*: Rohonda-----	6DK	II
Cheadle-----	10	III
Rock outcrop.		
224----- Ryark	5	II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
225: Shirleybasin-----	4CK	II
Twocabin-----	6G	II
Lahtida-----	4CK	II
226----- Silas	2	III
227: Silas, gravelly substratum-----	2	III
Vensora-----	10	III
228----- Stunner	3	II
229: Stunner-----	3	II
Borollic Camborthids----	5K	II
230: Stunner-----	8	II
Tisworth-----	9L	II
Blazon-----	10	II
231*: Stunner-----	3	II
Urban land.		
232----- Teeler	5	III
233: Thiel-----	10	III
Lymanson-----	6DK	III
Leavitt-----	3	III
234*: Tieside-----	10	II
Pilotpeak-----	10	II
Rock outcrop.		
235----- Tismid	9L	II
236*, 237*: Tisworth-----	9L	II
Gerdrum Family-----	10	II

TABLE 9.--WINDBREAK SUITABILITY GROUPS
AND PLANTING ZONES--Continued

Soil name and map symbol	Suitability group	Planting zone
238:		
Tule-----	10	II
Chalkville-----	10	II
239*:		
Tyzak-----	10	III
Rock outcrop.		
240-----	6D	II
Wycolo		
241:		
Wycolo-----	6D	II
Alcova-----	6G	II
242*:		
Wycolo-----	6D	II
Alcova-----	6G	II
Urban land.		
243:		
Wycolo-----	6DK	II
Tieside-----	10	II
244*:		
Wycolo-----	6K	II
Thermopolis-----	10	II
Rock outcrop.		

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--RECREATIONAL DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
100----- Aberone	Moderate: small stones.	Moderate: small stones.	Severe: slope, small stones.	Slight.
101*: Abston-----	Severe: slope, excess sodium.	Severe: slope, excess sodium.	Severe: slope, excess sodium.	Moderate: slope, dusty.
Bullock-----	Severe: slope, excess sodium.	Severe: slope, excess sodium.	Severe: slope, excess sodium.	Moderate: slope.
102*: Alcova-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Borollic Camborthids.				
103*: Alcova, shallow substratum-----	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
Lupinto-----	Moderate: small stones.	Moderate: small stones.	Severe: small stones.	Slight.
Dahlquist-----	Severe: small stones.	Severe: small stones.	Severe: small stones.	Moderate: dusty.
104*: Alcova, calcareous subsoil-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Rock River-----	Severe: small stones.	Severe: small stones.	Severe: small stones.	Severe: small stones.
105----- Almy	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
106*: Almy-----	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.
Urban land.				
107*: Almy-----	Slight-----	Slight-----	Slight-----	Slight.
Tismid-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
108----- Alogia	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.
109*: Alogia----- Urban land.	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.
110----- Anchutz	Slight-----	Slight-----	Moderate: slope.	Slight.
111*: Ansel-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.
Granile-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.
112*: Bateson-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight.
Shirleybasin-----	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
113*: Blackhall-----	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.
Browtime, moist-----	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope.
114*: Blackhall-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
Satanka----- Rock outcrop.	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
115*: Blazon-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
Chaperton-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
116*: Blazon-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
Delphill-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.
117*: Bonjea-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
Chugcreek-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Rock outcrop.				
118*: Bonjea-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
Rock outcrop.				
Chugcreek-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
119-----	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Bosler, wet substratum				
120*: Bosler-----	Slight-----	Slight-----	Moderate: slope, small stones.	Slight.
Borollic Camborthids.				
121*: Bosler, wet substratum-----	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Urban land.				
122*: Boyle-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.
Alderon-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
122*: Cathedral-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones.	Moderate: slope.
123*: Boyle-----	Severe: depth to rock.	Severe: depth to rock.	Severe: small stones, depth to rock.	Slight.
Boyle, thin solum----	Severe: depth to rock.	Severe: depth to rock.	Severe: small stones, depth to rock.	Slight.
124*: Boyle-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.
Rock outcrop.				
125*: Boyle-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, small stones, depth to rock.	Slight.
Lining-----	Slight-----	Slight-----	Moderate: slope, depth to rock.	Slight.
126----- Browline	Severe: small stones.	Severe: small stones.	Severe: small stones.	Severe: small stones.
127*: Browline-----	Severe: small stones.	Severe: small stones.	Severe: small stones.	Severe: small stones.
Hilltoppe-----	Severe: small stones, cemented pan.	Severe: small stones, cemented pan.	Severe: small stones, cemented pan.	Slight.
128*: Bruja-----	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.
Canwall-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.
Telecan-----	Slight-----	Slight-----	Moderate: slope, small stones.	Slight.
129*: Buffork-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
129*: Bucklon-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
130*: Byrnie-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
Rock outcrop.				
131. Calciborolls				
132-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
133-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
134*: Carbol-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
Rock outcrop.				
135*: Carmody-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Edlin-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
136*: Carmody-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Ryan Park-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
137*: Cathedral-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones.	Severe: slope.
Spinekop-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Rock outcrop.				
138----- Center Creek	Severe: flooding.	Moderate: wetness.	Moderate: wetness.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
139*: Chaperton, moderately saline---	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Moderate: dusty.
Blazon-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: erodes easily.
140*: Chaperton-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.
Poposhia-----	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.	Moderate: large stones, slope.
141*: Cheadle-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: large stones, slope, depth to rock.	Moderate: slope.
Passcreek, cobbly subsoil-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Rock outcrop.				
142*: Cheadle-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.
Rock outcrop.				
Miracle-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
143. Cryaquolls				
144. Cryoborolls				
145*: Cushool-----	Slight-----	Slight-----	Severe: slope.	Slight.
Cutback-----	Slight-----	Slight-----	Severe: slope.	Slight.
146*: Cushool-----	Slight-----	Slight-----	Moderate: small stones.	Slight.
Diamondville-----	Slight-----	Slight-----	Slight-----	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
147*: Cutback-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight.
Pinelli-----	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
148*: Dahlquist-----	Severe: small stones.	Severe: small stones.	Severe: small stones.	Slight.
Rawlins-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Browtine-----	Severe: large stones.	Severe: large stones.	Severe: large stones, slope, small stones.	Moderate: large stones.
149*: Dalecreek-----	Severe: flooding.	Slight-----	Moderate: slope.	Slight.
Kovich-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
150*: Delphill-----	Moderate: slope, dusty.	Moderate: slope, dusty.	Severe: slope.	Slight.
Blazon-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: erodes easily.
151*: Diamondville-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Cushool-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
152*: Diamonkit-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Stylite-----	Slight-----	Slight-----	Moderate: slope.	Slight.
153----- Elkol	Moderate: excess salt.	Moderate: excess salt.	Moderate: slope, excess salt.	Slight.
154*: Elkol-----	Moderate: excess salt.	Moderate: excess salt.	Moderate: slope, excess salt.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
154*: Gerdrum Family-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Moderate: dusty.
155*: Elkol-----	Moderate: excess salt.	Moderate: excess salt.	Moderate: excess salt.	Slight.
Gerdrum Family-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Moderate: dusty.
156----- Evanston	Slight-----	Slight-----	Moderate: slope.	Slight.
157*: Evanston-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope, dusty.
Bonjea-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
158*: Fiveoh-----	Slight-----	Slight-----	Moderate: slope, small stones.	Slight.
Fiveoh, cobbly substratum-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Ryan Park-----	Slight-----	Slight-----	Moderate: slope.	Slight.
159*: Fiveoh, cobbly substratum-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Fiveoh-----	Slight-----	Slight-----	Moderate: slope, small stones.	Slight.
Urban land.				
160*: Fiveoh, cobbly substratum-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Joemre-----	Slight-----	Slight-----	Moderate: slope.	Slight.
161----- Folavar	Severe: small stones, wetness.	Severe: wetness, small stones.	Severe: small stones, wetness.	Severe: wetness.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
162*: Folavar----- Borollic Camborthids.	Severe: small stones, wetness.	Severe: wetness, small stones.	Severe: small stones, wetness.	Severe: wetness.
163----- Forelle	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
164*: Forelle----- Urban land.	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.	Moderate: dusty.
165*: Forelle----- Diamondville-----	Slight----- Moderate: slope.	Slight----- Moderate: slope.	Moderate: slope. Severe: slope.	Slight. Slight.
166*: Glendive----- Redrob----- Grenoble-----	Severe: flooding. Severe: flooding, wetness. Severe: flooding.	Moderate: dusty. Moderate: wetness. Moderate: flooding, wetness, small stones.	Moderate: dusty. Severe: wetness. Severe: small stones, flooding.	Moderate: dusty. Moderate: wetness. Moderate: flooding.
167*: Grenoble----- Gerrard-----	Severe: flooding. Severe: flooding, wetness.	Moderate: flooding, wetness, small stones. Severe: wetness.	Severe: small stones, flooding. Severe: wetness, flooding.	Moderate: flooding. Severe: wetness.
168----- Greyback	Severe: large stones.	Severe: large stones.	Severe: large stones, small stones.	Moderate: large stones.
169----- Gypla	Severe: excess salt.	Severe: excess salt.	Severe: excess salt.	Moderate: wetness, dusty.
170*: Gypla-----	Severe: excess salt.	Severe: excess salt.	Severe: excess salt.	Moderate: wetness, dusty.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
170*: Urban land.				
171*: Hanson-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight.
Quander-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight.
172*: Hapjack-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.
Rogert-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.
Amesmont-----	Slight-----	Slight-----	Severe: slope.	Slight.
173*: Ipson-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.
Evanston-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
174----- Joemre	Slight-----	Slight-----	Moderate: slope.	Slight.
175----- Joemre	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
176*: Kezar-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Carbol-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Moderate: slope.
Rock outcrop.				
177*: Kildor-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.
Rock outcrop.				

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
178*: Kiltabar-----	Severe: flooding, excess salt.	Severe: excess salt.	Severe: excess salt.	Slight.
Tismid-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Slight.
179*: Lakehelen-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Redfeather-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, small stones, depth to rock.	Slight.
Amesmont-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
180----- Leavitt	Moderate: small stones.	Moderate: small stones.	Severe: small stones.	Slight.
181*: Leavitt-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.
Granile-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.
182*: Leavitt-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Hanson-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight.
183*: Leavitt-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Quander-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.
184----- Luhon	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
185*: Luvar-----	Moderate: dusty.	Moderate: dusty.	Moderate: slope, small stones, dusty.	Moderate: dusty.
Stylite-----	Slight-----	Slight-----	Moderate: slope.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
185*: Diamonkit-----	Slight-----	Slight-----	Moderate: slope, depth to rock.	Slight.
186*: Lymanson loam-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Lymanson cobbly loam-	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Moderate: large stones.
187----- Manada	Moderate: wetness.	Moderate: wetness.	Moderate: slope, small stones, wetness.	Slight.
188----- McFadden	Moderate: small stones.	Moderate: small stones.	Severe: small stones.	Slight.
189*: Miracle-----	Slight-----	Slight-----	Severe: slope.	Slight.
Cheadle-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
190*: Moyerson-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
Kemmerer-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
191*: Nathale-----	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.
Passcreek, cobbly subsoil-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop.				
192----- Pahlow	Slight-----	Slight-----	Moderate: small stones.	Slight.
193*: Pilotpeak-----	Severe: depth to rock.	Severe: depth to rock.	Severe: large stones, slope, depth to rock.	Moderate: large stones, dusty.
Canwall-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
194----- Pinelli	Slight-----	Slight-----	Moderate: slope.	Slight.
195*. Pits, mine				
196*: Poin-----	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: large stones, slope.
Bowen----- Rock outcrop.	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.
197*: Poposhia-----	Slight-----	Slight-----	Severe: slope.	Slight.
Blazon-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
198*: Poposhia-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Forelle-----	Slight-----	Slight-----	Moderate: slope.	Slight.
199*: Poposhia-----	Slight-----	Slight-----	Severe: slope.	Slight.
Chaperton-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
200*: Rainbolt-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight.
Morset-----	Moderate: small stones.	Moderate: small stones.	Severe: slope, small stones.	Slight.
201*: Redfeather-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
Lakehelen-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
201*: Rogert-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.
202----- Redrob	Severe: flooding, wetness.	Moderate: wetness, excess salt.	Severe: wetness.	Moderate: wetness.
203*: Redrob, frequently flooded-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Grenoble-----	Severe: flooding.	Moderate: flooding, wetness, small stones.	Severe: small stones, flooding.	Moderate: flooding.
Redrob-----	Severe: flooding, wetness.	Moderate: wetness, excess salt.	Severe: wetness.	Moderate: wetness.
204*: Redrob, frequently flooded-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Redrob-----	Severe: flooding, wetness.	Moderate: wetness, excess salt.	Severe: wetness.	Moderate: wetness.
205*: Redrob, frequently flooded-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.
Redrob-----	Severe: flooding, wetness.	Moderate: wetness, excess salt.	Severe: wetness.	Moderate: wetness.
Urban land.				
206*: Rentsac-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, small stones, depth to rock.	Slight.
Wycolo-----	Slight-----	Slight-----	Severe: slope.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
207*: Renvers-----	Severe: depth to rock.	Severe: depth to rock.	Severe: large stones, slope, small stones.	Moderate: dusty.
Chalkhill-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
208*: Rimton-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Passcreek, cobbly subsoil-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Miracle-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
209*. Riverwash				
210*: Rock outcrop.				
Bonjea-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
211*: Rock outcrop.				
Bruja-----	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope, small stones.	Severe: slope.
Byrnie-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.
212*: Rock outcrop.				
Cathedral-----	Severe: slope, small stones.	Severe: slope, small stones.	Severe: large stones, slope, small stones.	Severe: slope.
213*: Rock outcrop.				
Cathedral-----	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
213*: Alderon-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
214*: Rock outcrop.				
Pilotpeak-----	Severe: depth to rock.	Severe: depth to rock.	Severe: large stones, slope, depth to rock.	Moderate: large stones.
215*: Rock outcrop.				
Rogert-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope.
216----- Rock River	Slight-----	Slight-----	Moderate: slope.	Slight.
217----- Rock River	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
218*: Rock River-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Urban land.				
219*: Rogert-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.
Lakehelen----- Rock outcrop.	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
220*: Rogert-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, small stones, depth to rock.	Moderate: slope.
Rock outcrop.				
Amesmont-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
221----- Rohonda	Slight-----	Slight-----	Moderate: slope, depth to rock.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
222*: Rohonda-----	Slight-----	Slight-----	Severe: slope.	Slight.
Tieside-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, small stones, depth to rock.	Slight.
223*: Rohonda-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Cheadle-----	Severe: slope, large stones, depth to rock.	Severe: slope, large stones, depth to rock.	Severe: large stones, slope, small stones.	Severe: large stones, slope.
Rock outcrop.				
224----- Ryark	Slight-----	Slight-----	Moderate: slope.	Slight.
225*: Shirleybasin-----	Moderate: dusty.	Moderate: dusty.	Moderate: slope, dusty.	Moderate: dusty.
Twocabin-----	Moderate: slope, small stones, dusty.	Moderate: slope, small stones, dusty.	Severe: slope, small stones.	Moderate: dusty.
Lahtida-----	Moderate: dusty.	Moderate: dusty.	Severe: slope.	Moderate: dusty.
226----- Silas	Severe: flooding.	Slight-----	Moderate: slope, small stones.	Slight.
227*: Silas, gravelly substratum-----	Slight-----	Slight-----	Moderate: slope, small stones.	Slight.
Vensora-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
228----- Stunner	Slight-----	Slight-----	Moderate: slope.	Slight.
229*: Stunner-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Borollic Camborthids.				

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
230*: Stunner-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Tisworth-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Slight.
Blazon-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight.
231*: Stunner-----	Slight-----	Slight-----	Moderate: slope.	Slight.
Urban land.				
232----- Teeler	Severe: slope, small stones.	Severe: slope, small stones.	Severe: slope, small stones.	Moderate: slope.
233*: Thiel-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Slight.
Lymanson-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
Leavitt-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
234*: Tieside-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
Pilotpeak-----	Severe: depth to rock.	Severe: depth to rock.	Severe: large stones, slope, depth to rock.	Slight.
Rock outcrop.				
235----- Tismid	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Slight.
236*: Tisworth-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Moderate: dusty.
Gerdrum Family-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Moderate: dusty.
237*: Tisworth-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Slight.
Gerdrum Family-----	Severe: excess sodium.	Severe: excess sodium.	Severe: excess sodium.	Slight.

See footnote at end of table.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
238*: Tule-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Moderate: dusty.
Chalkville-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Moderate: dusty.
239*: Tyzak-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: large stones, slope, small stones.	Severe: slope.
Rock outcrop.				
240----- Wycolo	Slight-----	Slight-----	Moderate: slope, small stones, depth to rock.	Slight.
241*: Wycolo-----	Slight-----	Slight-----	Severe: slope.	Slight.
Alcova-----	Moderate: small stones.	Moderate: small stones.	Severe: slope, small stones.	Slight.
242*: Wycolo-----	Slight-----	Slight-----	Moderate: slope, small stones, depth to rock.	Slight.
Alcova-----	Moderate: small stones.	Moderate: small stones.	Severe: small stones.	Slight.
Urban land.				
243*: Wycolo-----	Slight-----	Slight-----	Severe: slope.	Slight.
Tieside-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Slight.
244*: Wycolo-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.
Thermopolis-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope.
Rock outcrop.				

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--BUILDING SITE DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
100----- Aberone	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Severe: droughty.
101*: Abston-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: excess sodium, slope.
Bullock-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: excess sodium, slope.
102*: Alcova-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
Borollic Camborthids.						
103*: Alcova, shallow substratum-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Moderate: droughty.
Lupinto-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Moderate: small stones, droughty.
Dahlquist-----	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: slope, large stones.	Moderate: frost action, large stones.	Severe: small stones.
104*: Alcova, calcareous subsoil-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Moderate: droughty.
Rock River-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Severe: small stones.
105----- Almy	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
106*: Almy-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
Urban land.						

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
107*: Almy-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
Tismid-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Severe: excess sodium.
108----- Alogia	Moderate: wetness.	Slight-----	Moderate: wetness.	Slight-----	Moderate: frost action.	Slight.
109*: Alogia-----	Moderate: wetness.	Slight-----	Moderate: wetness.	Slight-----	Moderate: frost action.	Slight.
Urban land.						
110----- Anchutz	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength, frost action.	Slight.
111*: Ansel-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Granile-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
112*: Bateson-----	Severe: cutbanks cave.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Moderate: shrink-swell, slope.	Moderate: small stones, droughty, slope.
Shirleybasin----	Moderate: too clayey.	Severe: shrink-swell.	Moderate: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
113*: Blackhall-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope, depth to rock.
Browtine, moist--	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, droughty, slope.
114*: Blackhall-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Severe: depth to rock.
Satanka-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: slope, depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
114*: Rock outcrop.						
115*: Blazon-----	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Severe: low strength.	Severe: depth to rock.
Chaperton-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
116*: Blazon-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope, depth to rock.
Delphill-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
117*: Bonjea-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Chugcreek-----	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, shrink-swell, slope.	Moderate: slope, depth to rock.
Rock outcrop.						
118*: Bonjea-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Rock outcrop.						
Chugcreek-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
119----- Bosler, wet substratum	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, frost action.	Moderate: wetness, droughty.
120*: Bosler-----	Severe: cutbanks cave.	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Slight.
Borollic Camborthids.						

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
121*: Bosler, wet substratum----- Urban land.	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, frost action.	Moderate: wetness, droughty.
122*: Boyle----- Alderon----- Cathedral-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
123*: Boyle----- Boyle, thin solum	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock, frost action.	Severe: depth to rock.
124*: Boyle----- Rock outcrop.	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
125*: Boyle----- Lininger-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, frost action.	Severe: depth to rock.
126----- Browtine	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Slight-----	Moderate: depth to rock.
127*: Browtine----- Hilltoppe-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Severe: small stones, droughty.
	Severe: cemented pan.	Moderate: cemented pan.	Severe: cemented pan.	Moderate: slope, cemented pan.	Moderate: cemented pan.	Severe: small stones, droughty, cemented pan.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
128*: Bruja-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, droughty, slope.
Canwall-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Telecan-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Slight.
129*: Buffork-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Bucklon-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
130*: Byrnie-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Rock outcrop.						
131. Calciborolls						
132----- Canburn	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
133----- Cantle	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding, frost action.	Severe: wetness, flooding.
134*: Carbol-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Rock outcrop.						
135*: Carmody-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Edlin-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
136*: Carmody-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
136*: Ryan Park-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
137*: Cathedral-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Spinekop----- Rock outcrop.	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
138----- Center Creek	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength.	Slight.
139*: Chaperton, moderately saline-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: slope, depth to rock.
Blazon-----	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Severe: low strength.	Severe: depth to rock.
140*: Chaperton-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Poposhia-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
141*: Cheadle-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Passcreek, cobblely subsoil-- Rock outcrop.	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
142*: Cheadle----- Rock outcrop.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
142*: Miracle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
143. Cryaquolls						
144. Cryoborolls						
145*: Cushool-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.
Cutback-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Slight-----	Moderate: depth to rock.
146*: Cushool-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Slight-----	Moderate: frost action.	Moderate: depth to rock.
Diamondville-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Slight-----	Moderate: frost action.	Moderate: depth to rock.
147*: Cutback-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, large stones, slope.
Pinelli-----	Moderate: too clayey.	Severe: shrink-swell.	Moderate: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
148*: Dahlquist-----	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: slope, large stones.	Moderate: frost action, large stones.	Severe: small stones.
Rawlins-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
Browline-----	Moderate: large stones, slope.	Moderate: slope, large stones.	Moderate: slope, shrink-swell, large stones.	Severe: slope.	Moderate: slope, frost action, large stones.	Severe: large stones.
149*: Dalecreek-----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: shrink-swell, flooding.	Slight.
Kovich-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding, frost action.	Severe: wetness.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
150*: Delphill-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
Blazon-----	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Severe: low strength.	Severe: depth to rock.
151*: Diamondville-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.
Cushool-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.
152*: Diamonkit-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, slope.	Moderate: slope, depth to rock.
Stylite-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
153----- Elkol	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: excess salt, droughty.
154*: Elkol-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: excess salt, droughty.
Gerdrum Family---	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
155*: Elkol-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: excess salt, droughty.
Gerdrum Family---	Moderate: too clayey, wetness.	Moderate: shrink-swell.	Moderate: wetness, shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Severe: excess sodium.
156----- Evanston	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength.	Slight.
157*: Evanston-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
157*: Bonjea-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
158*: Fiveoh-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
Fiveoh, cobbly substratum-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Moderate: droughty.
Ryan Park-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Slight.
159*: Fiveoh, cobbly substratum-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: droughty.
Fiveoh-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight.
Urban land.						
160*: Fiveoh, cobbly substratum-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: droughty.
Joemre-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight.
161----- Folavar	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: small stones, wetness.
162*: Folavar-----	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: small stones, wetness.
Borollic Camborthids.						
163----- Forelle	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Slight.
164*: Forelle-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Slight.
Urban land.						
165*: Forelle-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Slight.
Diamondville-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
166*: Glendive-----	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding, frost action.	Slight.
Redrob-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Moderate: wetness, flooding.	Moderate: wetness, droughty.
Grenoble-----	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: droughty, flooding.
167*: Grenoble-----	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: droughty, flooding.
Gerrard-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
168----- Greyback	Severe: cutbanks cave.	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: frost action, large stones.	Severe: large stones, droughty.
169----- Gypla	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: frost action.	Severe: excess salt.
170*: Gypla-----	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Severe: frost action.	Severe: excess salt.
Urban land.						
171*: Hanson-----	Moderate: large stones, slope.	Moderate: shrink-swell, slope, large stones.	Moderate: slope, shrink-swell, large stones.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: small stones, large stones, droughty.
Quander-----	Moderate: large stones, slope.	Moderate: shrink-swell, slope, large stones.	Moderate: slope, shrink-swell, large stones.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: small stones, large stones, slope.
172*: Hapjack-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
Rogert-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Amesmont-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Slight-----	Moderate: droughty, depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
173*: Ipson-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Evanston-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
174----- Joemre	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
175----- Joemre	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
176*: Kezar-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Carbol----- Rock outcrop.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
177*: Kildor----- Rock outcrop.	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
178*: Kiltabar-----	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength.	Severe: excess salt.
Tismid-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Severe: excess sodium.
179*: Lakehelen-----	Severe: depth to rock.	Moderate: shrink-swell, slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, shrink-swell, slope.	Moderate: droughty, slope, depth to rock.
Redfeather-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Amesmont-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, depth to rock.
180----- Leavitt	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Moderate: small stones, droughty.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
181*: Leavitt-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Granile-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
182*: Leavitt-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Hanson-----	Moderate: large stones, slope.	Moderate: shrink-swell, slope, large stones.	Moderate: slope, shrink-swell, large stones.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: small stones, large stones, droughty.
183*: Leavitt-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Quander-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
184----- Luhon	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
185*: Luvar-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Stylite-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Diamonkit-----	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Moderate: depth to rock.
186*: Lymanson loam---	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope, depth to rock.
Lymanson cobbly loam-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Severe: large stones.
187----- Manada	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
188----- McFadden	Slight-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: small stones.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
189*: Miracle-----	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock, frost action.	Moderate: depth to rock.
Cheadle-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.
190*: Moyerson-----	Severe: depth to rock.	Severe: shrink-swell.	Severe: depth to rock, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Severe: depth to rock.
Kemmerer-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
191*: Nathale-----	Severe: depth to rock, large stones, slope.	Severe: slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: droughty, slope.
Passcreek, cobblely subsoil--	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop.						
192----- Pahlow	Severe: cutbanks cave.	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Severe: droughty.
193*: Pilotpeak-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Canwall-----	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, large stones.	Moderate: droughty, slope.
194----- Pinelli	Moderate: too clayey.	Severe: shrink-swell.	Moderate: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
195*. Pits, mine						
196*: Poin-----	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: large stones, droughty, slope.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
196*: Bowen----- Rock outcrop.	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
197*: Poposhia----- Blazon-----	Slight----- Severe: depth to rock.	Moderate: shrink-swell. Moderate: shrink-swell, slope, depth to rock.	Moderate: shrink-swell. Severe: depth to rock.	Moderate: shrink-swell, slope. Severe: slope.	Moderate: shrink-swell, low strength. Severe: low strength.	Slight. Severe: depth to rock.
198*: Poposhia----- Forelle-----	Slight----- Slight-----	Moderate: shrink-swell. Slight-----	Moderate: shrink-swell. Slight-----	Moderate: shrink-swell, slope. Slight-----	Moderate: shrink-swell, low strength. Moderate: frost action.	Slight. Slight.
199*: Poposhia----- Chaperton-----	Slight----- Moderate: depth to rock, slope.	Moderate: shrink-swell. Moderate: shrink-swell, slope.	Moderate: shrink-swell. Moderate: depth to rock, slope, shrink-swell.	Moderate: shrink-swell, slope. Severe: slope.	Moderate: shrink-swell, low strength. Severe: low strength.	Slight. Moderate: slope, depth to rock.
200*: Rainbolt----- Morset-----	Moderate: depth to rock, slope. Slight-----	Moderate: shrink-swell, slope. Moderate: shrink-swell.	Moderate: depth to rock, slope, shrink-swell. Moderate: shrink-swell.	Severe: slope. Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope. Moderate: shrink-swell, frost action.	Moderate: small stones, slope, depth to rock. Moderate: small stones, droughty.
201*: Redfeather----- Lakehelen----- Rogert-----	Severe: depth to rock, slope. Severe: depth to rock, slope. Severe: depth to rock, slope.	Severe: slope, depth to rock. Severe: slope. Severe: slope, depth to rock.	Severe: depth to rock, slope. Severe: depth to rock, slope. Severe: depth to rock, slope.	Severe: slope, depth to rock. Severe: slope. Severe: slope, depth to rock.	Severe: depth to rock, slope. Severe: slope. Severe: depth to rock, slope.	Severe: slope, depth to rock. Severe: slope. Severe: droughty, slope, depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
202----- Redrob	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Moderate: wetness, flooding.	Moderate: excess salt, wetness.
203*: Redrob, frequently flooded-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Grenoble-----	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: droughty, flooding.
Redrob-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Moderate: wetness, flooding.	Moderate: excess salt, wetness.
204*: Redrob, frequently flooded-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Redrob-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Moderate: wetness, flooding.	Moderate: excess salt, wetness.
205*: Redrob, frequently flooded-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
Redrob-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Moderate: wetness, flooding.	Moderate: excess salt, wetness.
Urban land.						
206*: Rentsac-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: droughty, depth to rock.
Wycolo-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Slight-----	Moderate: depth to rock.
207*: Renvers-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Chalkhill-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
208*: Rimton-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Passcreek, cobblely subsoil--	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Miracle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
209*. Riverwash						
210*: Rock outcrop.						
Bonjea-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.
211*: Rock outcrop.						
Bruja-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, droughty, slope.
Byrnie-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
212*: Rock outcrop.						
Cathedral-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope.
213*: Rock outcrop.						
Cathedral-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: small stones, slope.
Alderon-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
214*: Rock outcrop.						
Pilotpeak-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
215*: Rock outcrop.						
Rogert-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
216, 217----- Rock River	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Slight.
218*: Rock River-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Slight.
Urban land.						
219*: Rogert-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Lakehelen-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop.						
220*: Rogert-----	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, depth to rock.	Severe: depth to rock, slope.	Severe: droughty, slope, depth to rock.
Rock outcrop.						
Amesmont-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, depth to rock.
221----- Rohonda	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.
222*: Rohonda-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.
Tieside-----	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock.	Severe: depth to rock.
223*: Rohonda-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
223*: Cheadle----- Rock outcrop.	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: large stones, slope, depth to rock.
224----- Ryark	Severe: cutbanks cave.	Slight-----	slight-----	slight-----	Slight-----	Slight.
225*: Shirleybasin----	Moderate: too clayey.	Severe: shrink-swell.	Moderate: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Twocabin-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: small stones, large stones, slope.
Lahtida-----	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Moderate: depth to rock.
226----- Silas	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding, frost action.	Slight.
227*: Silas, gravelly substratum-----	Severe: cutbanks cave.	Slight-----	Moderate: wetness.	Slight-----	Moderate: frost action.	Slight.
Vensora-----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, frost action.	Severe: wetness.
228----- Stunner	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
229*: Stunner----- Borollic Camborthids.	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength.	Slight.
230*: Stunner-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
Tisworth-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength, frost action.	Severe: excess sodium.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
230*: Blazon-----	Severe: depth to rock.	Moderate: shrink-swell, depth to rock.	Severe: depth to rock.	Moderate: shrink-swell, depth to rock.	Severe: low strength.	Severe: depth to rock.
231*: Stunner----- Urban land.	Slight-----	Slight-----	Slight-----	Slight-----	Slight-----	Slight.
232----- Teeler	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
233*: Thiel-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Severe: droughty.
Lymanson-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: droughty, slope, depth to rock.
Leavitt-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope.
234*: Tieside-----	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock.	Severe: depth to rock.
Pilotpeak----- Rock outcrop.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
235----- Tismid	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Severe: excess sodium.
236*: Tisworth-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength, frost action.	Severe: excess sodium.
Gerdrum Family---	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
237*: Tisworth-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength, frost action.	Severe: excess sodium.

See footnote at end of table.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
237*: Gerdrum Family---	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
238*: Tule-----	Severe: depth to rock.	Severe: depth to rock.				
Chalkville-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock, frost action.	Severe: depth to rock.
239*: Tyzak-----	Severe: depth to rock, large stones, slope.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock, large stones.	Severe: depth to rock, slope, large stones.	Severe: slope, depth to rock.
Rock outcrop.						
240----- Wycolo	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Moderate: depth to rock.
241*: Wycolo-----	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Moderate: depth to rock.
Alcova-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Moderate: small stones.
242*: Wycolo-----	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Moderate: depth to rock.
Alcova-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Moderate: small stones.
Urban land.						
243*: Wycolo-----	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Moderate: depth to rock.
Tieside-----	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock.	Severe: depth to rock.
244*: Wycolo-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
244*: Thermopolis----- Rock outcrop.	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
100----- Aberone	Severe: poor filter.	Severe: seepage, slope.	Moderate: large stones.
101*: Abston-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Bullock-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
102*: Alcova-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Borollic Camborthids.			
103*: Alcova, shallow substratum-----	Severe: poor filter.	Severe: seepage.	Slight.
Lupinto-----	Severe: poor filter.	Severe: seepage.	Slight.
Dahlquist-----	Severe: poor filter.	Severe: seepage.	Moderate: large stones.
104*: Alcova, calcareous subsoil-----	Severe: poor filter.	Severe: seepage.	Slight.
Rock River-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
105----- Almy	Moderate: percs slowly.	Severe: seepage.	Slight.
106*: Almy-----	Moderate: percs slowly.	Severe: seepage.	Slight.
Urban land.			
107*: Almy-----	Moderate: percs slowly.	Severe: seepage.	Slight.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
107*: Tismid-----	Severe: percs slowly.	Moderate: slope.	Slight.
108----- Alogia	Severe: wetness.	Severe: wetness.	Severe: wetness.
109*: Alogia-----	Severe: wetness.	Severe: wetness.	Severe: wetness.
Urban land.			
110----- Anchutz	Moderate: percs slowly.	Severe: seepage.	Slight.
111*: Ansel-----	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.
Granile-----	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.
112*: Bateson-----	Severe: poor filter.	Severe: seepage, slope.	Moderate: slope, too sandy.
Shirleybasin-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight.
113*: Blackhall-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope.
Browtine, moist----	Severe: slope.	Severe: seepage, slope.	Severe: slope.
114*: Blackhall-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
Satanka-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Rock outcrop.			
115*: Blazon-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
115*: Chaperton-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
116*: Blazon-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Delphill-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
117*: Bonjea-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Chugcreek-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
Rock outcrop.			
118*: Bonjea-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Rock outcrop.			
Chugcreek-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope.
119-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.
Bosler, wet substratum			
120*: Bosler-----	Severe: poor filter.	Severe: seepage.	Severe: too sandy.
Borollic Camborthids.			
121*: Bosler, wet substratum-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.
Urban land.			

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
122*: Boyle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Alderon-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Cathedral-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
123*: Boyle-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Boyle, thin solum--	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
124*: Boyle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Rock outcrop.			
125*: Boyle-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Lininger-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock, seepage.
126----- Browtine	Slight-----	Severe: seepage.	Slight.
127*: Browtine-----	Slight-----	Severe: seepage.	Slight.
Hilltoppe-----	Severe: cemented pan.	Severe: seepage, cemented pan.	Moderate: cemented pan, large stones.
128*: Bruja-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope, large stones.
Canwall-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
128*: Telecan-----	Slight-----	Severe: seepage.	Severe: seepage.
129*: Buffork-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Bucklon-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
130*: Byrnie-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Rock outcrop.			
131. Calciborolls			
132----- Canburn	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
133----- Cantle	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.
134*: Carbol-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Rock outcrop.			
135*: Carmody-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope.
Edlin-----	Severe: slope.	Severe: seepage, slope.	Severe: slope.
136*: Carmody-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
Ryan Park-----	Moderate: slope.	Severe: seepage, slope.	Moderate: slope.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
137*: Cathedral-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Spinekop-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight.
Rock outcrop.			
138----- Center Creek	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.
139*: Chaperton, moderately saline-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Blazon-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
140*: Chaperton-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Poposhia-----	Severe: slope.	Severe: slope.	Severe: slope.
141*: Cheadle-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Passcreek, cobbly subsoil-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rock outcrop.			
142*: Cheadle-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rock outcrop.			

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
142*: Miracle-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
143. Cryaquolls			
144. Cryoborolls			
145*: Cushool-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
Cutback-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
146*: Cushool-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
Diamondville-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
147*: Cutback-----	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
Pinelli-----	Severe: percs slowly.	Moderate: slope.	Slight.
148*: Dahlquist-----	Severe: poor filter.	Severe: seepage.	Moderate: large stones.
Rawlins-----	Slight-----	Severe: seepage.	Slight.
Browtine-----	Severe: percs slowly.	Severe: seepage, slope, large stones.	Moderate: slope, large stones.
149*: Dalecreek-----	Severe: wetness.	Severe: wetness.	Severe: wetness.
Kovich-----	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
150*: Delphill-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Blazon-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
151*: Diamondville-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Cushool-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
152*: Diamonkit-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Stylite-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
153----- Elkol	Severe: percs slowly.	Moderate: slope.	Slight.
154*: Elkol-----	Severe: percs slowly.	Moderate: slope.	Slight.
Gerdrum Family----	Severe: percs slowly.	Moderate: slope.	Slight.
155*: Elkol-----	Severe: percs slowly.	Slight-----	Slight.
Gerdrum Family----	Severe: percs slowly.	Moderate: wetness.	Severe: wetness.
156----- Evanston	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
157*: Evanston-----	Severe: slope.	Severe: slope.	Severe: slope.
Bonjea-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
158*: Fiveoh-----	Slight-----	Severe: seepage.	Slight.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
158*: Fiveoh, cobbly substratum-----	Slight-----	Severe: seepage.	Slight.
Ryan Park-----	Slight-----	Severe: seepage.	Slight.
159*: Fiveoh, cobbly substratum-----	Slight-----	Severe: seepage.	Slight.
Fiveoh-----	Slight-----	Severe: seepage.	Slight.
Urban land.			
160*: Fiveoh, cobbly substratum-----	Slight-----	Severe: seepage.	Slight.
Joemre-----	Slight-----	Severe: seepage.	Slight.
161----- Folavar	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.
162*: Folavar-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: wetness, too sandy.
Borollic Camborthids.			
163----- Forelle	Slight-----	Severe: seepage.	Slight.
164*: Forelle-----	Slight-----	Severe: seepage.	Slight.
Urban land.			
165*: Forelle-----	Moderate: percs slowly.	Moderate: seepage.	Slight.
Diamondville-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
166*: Glendive-----	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
166*: Redrob-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness.
Grenoble-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
167*: Grenoble-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
Gerrard-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
168----- Greyback	Severe: poor filter.	Severe: seepage, large stones.	Severe: seepage, large stones.
169----- Gypla	Severe: wetness.	Severe: wetness.	Severe: wetness, excess salt.
170*: Gypla-----	Severe: wetness.	Severe: wetness.	Severe: wetness, excess salt.
Urban land.			
171*: Hanson-----	Moderate: percs slowly, slope, large stones.	Severe: slope, large stones.	Severe: large stones.
Quander-----	Moderate: percs slowly, slope, large stones.	Severe: slope.	Severe: large stones.
172*: Hapjack-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rogert-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Amesmont-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
173*: Ipson-----	Severe: slope.	Severe: seepage, slope.	Severe: slope.
Evanston-----	Severe: slope.	Severe: slope.	Severe: slope.
174----- Joemre	Slight-----	Severe: seepage.	Slight.
175----- Joemre	Moderate: slope.	Severe: seepage, slope.	Moderate: slope.
176*: Kezar-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Carbol-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Rock outcrop.			
177*: Kildor-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.
Rock outcrop.			
178*: Kiltabar-----	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, excess salt.
Tismid-----	Severe: percs slowly.	Slight-----	Slight.
179*: Lakehelen-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.
Redfeather-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
Amesmont-----	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.
180----- Leavitt	Slight-----	Severe: seepage.	Severe: seepage.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
181*: Leavitt-----	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.
Granile-----	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.
182*: Leavitt-----	Severe: slope.	Severe: slope.	Severe: slope.
Hanson-----	Moderate: percs slowly, slope, large stones.	Severe: slope, large stones.	Severe: large stones.
183*: Leavitt-----	Severe: slope.	Severe: slope.	Severe: slope.
Quander-----	Severe: slope.	Severe: slope.	Severe: slope, large stones.
184----- Luhon	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
185*: Luvar-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Stylite-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Diamonkit-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
186*: Lymanson loam-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Lymanson cobbly loam-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
187----- Manada	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.
188----- McFadden	Slight-----	Severe: seepage.	Slight.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
189*: Miracle-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.
Cheadle-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.
190*: Moyerson-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Kemmerer-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.
191*: Nathale-----	Severe: depth to rock, slope, large stones.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Passcreek, cobbly subsoil-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rock outcrop.			
192----- Pahlow	Severe: poor filter.	Severe: seepage.	Moderate: too sandy, large stones.
193*: Pilotpeak-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, large stones.
Canwall-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
194----- Pinelli	Severe: percs slowly.	Moderate: slope.	Slight.
195*. Pits, mine			
196*: Poin-----	Severe: depth to rock, slope, large stones.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
196*: Bowen-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rock outcrop.			
197*: Poposhia-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Blazon-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
198*: Poposhia-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Forelle-----	Moderate: percs slowly.	Moderate: seepage.	Slight.
199*: Poposhia-----	Moderate: percs slowly.	Severe: slope.	Slight.
Chaperton-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
200*: Rainbolt-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Morset-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
201*: Redfeather-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope.
Lakehelen-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rogert-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
202----- Redrob	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.
203*: Redrob, frequently flooded-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
Grenoble-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
Redrob-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.
204*: Redrob, frequently flooded-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
Redrob-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.
205*: Redrob, frequently flooded-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.
Redrob-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.
Urban land.			
206*: Rentsac-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
Wycolo-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
207*: Renvers-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Chalkhill-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
208*: Rimton-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
Passcreek, cobbly subsoil-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Miracle-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
209*. Riverwash			
210*: Rock outcrop.			
Bonjea-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
211*: Rock outcrop.			
Bruja-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope, large stones.
Byrnie-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.
212*: Rock outcrop.			
Cathedral-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
213*: Rock outcrop.			

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
213*: Cathedral-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Alderon-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
214*: Rock outcrop.			
Pilotpeak-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, large stones, slope.
215*: Rock outcrop.			
Rogert-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
216, 217----- Rock River	Slight-----	Severe: seepage.	Slight.
218*: Rock River-----	Slight-----	Severe: seepage.	Slight.
Urban land.			
219*: Rogert-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Lakehelen-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rock outcrop.			
220*: Rogert-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.
Rock outcrop.			

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
220*: Amesmont-----	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.
221----- Rohonda	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
222*: Rohonda-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
Tieside-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
223*: Rohonda-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
Cheadle-----	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, seepage, slope.
Rock outcrop.			
224----- Ryark	Severe: poor filter.	Severe: seepage.	Slight.
225*: Shirleybasin-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight.
Twocabin-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.
Lahtida-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.
226----- Silas	Severe: wetness.	Severe: wetness.	Severe: wetness.
227*: Silas, gravelly substratum-----	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.
Venscra-----	Severe: wetness.	Severe: wetness.	Severe: wetness.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
228----- Stunner	Moderate: percs slowly.	Severe: seepage.	Slight.
229*: Stunner-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Borollic Camborthids.			
230*: Stunner-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Tisworth-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Blazon-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
231*: Stunner-----	Moderate: percs slowly.	Severe: seepage.	Slight.
Urban land.			
232----- Teeler	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.
233*: Thiel-----	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage.
Lymanson-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.
Leavitt-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.
234*: Tieside-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
Pilotpeak-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Rock outcrop.			
235----- Tismid	Severe: percs slowly.	Moderate: slope.	Slight.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
236*, 237*: Tisworth-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Gerdrum Family----	Severe: percs slowly.	Moderate: slope.	Slight.
238*: Tule-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.
Chalkville-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.
239*: Tyzak-----	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.	Severe: depth to rock, slope, large stones.
Rock outcrop.			
240----- Wycolo	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
241*: Wycolo-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Alcova-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
242*: Wycolo-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Alcova-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight.
Urban land.			
243*: Wycolo-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
Tieside-----	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock.
244*: Wycolo-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.

See footnote at end of table.

TABLE 12.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill
244*: Thermopolis----- Rock outcrop.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--CONSTRUCTION MATERIALS

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
100----- Aberone	Good-----	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim.
101*: Abston-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess sodium, slope.
Bullock-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess sodium, slope.
102*: Alcova----- Borollic Camborthids.	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
103*: Alcova, shallow substratum-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
Lupinto-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
Dahlquist-----	Fair: large stones.	Probable-----	Probable-----	Poor: small stones, area reclaim.
104*: Alcova, calcareous subsoil-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
Rock River-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
105----- Almy	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
106*: Almy-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Urban land.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
107*: Almy-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Tismid-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt, excess sodium.
108----- Alogia	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Fair: excess salt.
109*: Alogia-----	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Fair: excess salt.
Urban land.				
110----- Anchutz	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
111*: Ansel-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Granile-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
112*: Bateson-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
Shirleybasin-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
113*: Blackhall-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Browtine, moist-----	Poor: slope.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones, area reclaim, slope.
114*: Blackhall-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Satanka-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
114*: Rock outcrop.				
115*: Blazon-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Chaperton-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
116*: Blazon-----	Poor: depth to rock, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Delphill-----	Poor: depth to rock, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
117*: Bonjea-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
Chugcreek-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Rock outcrop.				
118*: Bonjea-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop.				
Chugcreek-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
119----- Bosler, wet substratum	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
120*: Bosler-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
Borollic Camborthids.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
121*: Bosler, wet substratum----- Urban land.	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
122*: Boyle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Alderon-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Cathedral-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
123*: Boyle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
Boyle, thin solum---	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
124*: Boyle----- Rock outcrop.	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
125*: Boyle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
Lininger-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
126----- Browline	Good-----	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim.
127*: Browline-----	Good-----	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
127*: Hilltoppe-----	Good-----	Improbable: small stones.	Probable-----	Poor: cemented pan, small stones, area reclaim.
128*: Bruja-----	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Canwall-----	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Telecan-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
129*: Buffork-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Bucklon-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
130*: Byrnie-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop.				
131. Calciborolls				
132----- Canburn	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
133----- Cantle	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
134*: Carbol-----	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, large stones, slope.
Rock outcrop.				
135*: Carmody-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Edlin-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
136*: Carmody-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, thin layer, slope.
Ryan Park-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, area reclaim, slope.
137*: Cathedral-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Spinekop-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Rock outcrop.				
138----- Center Creek	Fair: wetness.	Probable-----	Probable-----	Poor: area reclaim.
139*: Chaperton, moderately saline---	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, small stones, slope.
Blazon-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
140*: Chaperton-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Poposhia-----	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
141*: Cheadle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Passcreek, cobbly subsoil-----	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Rock outcrop.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
142*: Cheadle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop.				
Miracle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
143. Cryaquolls				
144. Cryoborolls				
145*: Cushool-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
Cutback-----	Poor: depth to rock.	Improbable: small stones.	Improbable: thin layer.	Poor: small stones.
146*: Cushool-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
Diamondville-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, small stones, thin layer.
147*: Cutback-----	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones.
Pinelli-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
148*: Dahlquist-----	Fair: large stones.	Probable-----	Probable-----	Poor: small stones, area reclaim.
Rawlins-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Browtine-----	Fair: shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
149*: Dalecreek-----	Fair: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Kovich-----	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, wetness.
150*: Delphill-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Blazon-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
151*: Diamondville-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, small stones, thin layer.
Cushool-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
152*: Diamonkit-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Stylite-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, thin layer.
153----- Elkol	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
154*: Elkol-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Gerdrum Family-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess salt, excess sodium.
155*: Elkol-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Gerdrum Family-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess sodium.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
156----- Evanston	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
157*: Evanston-----	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Bonjea-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
158*: Fiveoh-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Fiveoh, cobbly substratum-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
Ryan Park-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, area reclaim.
159*: Fiveoh, cobbly substratum-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
Fiveoh-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Urban land.				
160*: Fiveoh, cobbly substratum-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
Joemre-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
161----- Folavar	Poor: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
162*: Folavar-----	Poor: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
Borollic Camborthids.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
163----- Forelle	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
164*: Forelle-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Urban land.				
165*: Forelle-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Diamondville-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, small stones, thin layer.
166*: Glendive-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Good.
Redrob-----	Fair: wetness.	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim.
Grenoble-----	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
167*: Grenoble-----	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
Gerrard-----	Poor: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
168----- Greyback	Fair: large stones.	Probable-----	Probable-----	Poor: small stones, area reclaim.
169----- Gypla	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt.
170*: Gypla-----	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt.
Urban land.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
171*: Hanson-----	Fair: shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, small stones.
Quander-----	Fair: shrink-swell, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones.
172*: Hapjack-----	Poor: depth to rock.	Improbable: thin layer.	Improbable: too sandy.	Poor: depth to rock, small stones, slope.
Rogert-----	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Amesmont-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
173*: Ipson-----	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Evanston-----	Fair: shrink-swell, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
174----- Joemre	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
175----- Joemre	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
176*: Kezar-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Carbol-----	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, large stones, slope.
Rock outcrop.				
177*: Kildor-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Rock outcrop.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
178*: Kiltabar-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt.
Tismid-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt, excess sodium.
179*: Lakehelen-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Redfeather-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
Amesmont-----	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones.
180----- Leavitt	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
181*: Leavitt-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Granile-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
182*: Leavitt-----	Fair: shrink-swell, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Hanson-----	Fair: shrink-swell, large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: area reclaim, small stones.
183*: Leavitt-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Quander-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones, slope.
184----- Luhon	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
185*: Luvar-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, excess salt, thin layer.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
185*: Stylite-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, thin layer.
Diamonkit-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
186*: Lymanson loam-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Lymanson cobbly loam-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
187----- Manada	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
188----- McFadden	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
189*: Miracle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey.
Cheadle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
190*: Moyerson-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey.
Kammerer-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
191*: Nathale-----	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Passcreek, cobbly subsoil-----	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Rock outcrop.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
192----- Pahlow	Fair: large stones.	Probable-----	Probable-----	Poor: small stones, area reclaim.
193*: Pilotpeak-----	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, large stones.
Canwall-----	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones.
194----- Pinelli	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
195*. Pits, mine				
196*: Poin-----	Poor: depth to rock, large stones, slope.	Improbable: large stones.	Improbable: large stones.	Poor: depth to rock, large stones, slope.
Bowen-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rock outcrop.				
197*: Poposhia-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Blazon-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
198*: Poposhia-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Forelle-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
199*: Poposhia-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Chaperton-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
200*: Rainbolt-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Morset-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
201*: Redfeather-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Lakehelen-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rogert-----	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
202----- Redrob	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
203*: Redrob, frequently flooded-----	Poor: wetness.	Probable-----	Probable-----	Poor: small stones, area reclaim, wetness.
Grenoble-----	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
Redrob-----	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
204*: Redrob, frequently flooded-----	Poor: wetness.	Probable-----	Probable-----	Poor: small stones, area reclaim, wetness.
Redrob-----	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
205*: Redrob, frequently flooded-----	Poor: wetness.	Probable-----	Probable-----	Poor: small stones, area reclaim, wetness.
Redrob-----	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
Urban land.				
206*: Rentsac-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
Wycolo-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
207*: Renvers-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
Chalkhill-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
208*: Rimton-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, slope.
Passcreek, cobbly subsoil-----	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.
Miracle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
209*. Riverwash				
210*: Rock outcrop.				
Bonjea-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
211*: Rock outcrop.				

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
211*: Bruja-----	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Byrnie-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
212*: Rock outcrop.				
Cathedral-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
213*: Rock outcrop.				
Cathedral-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Alderon-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
214*: Rock outcrop.				
Pilotpeak-----	Poor: depth to rock.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, large stones.
215*: Rock outcrop.				
Rogert-----	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
216, 217----- Rock River	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
218*: Rock River-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Urban land.				
219*: Rogert-----	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
219*: Lakehelen----- Rock outcrop.	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
220*: Rogert----- Rock outcrop.	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: depth to rock, small stones, slope.
Amesmont-----	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones.
221----- Rohonda	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, small stones.
222*: Rohonda-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, small stones.
Tieside-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
223*: Rohonda-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, small stones, slope.
Cheadle----- Rock outcrop.	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, large stones, slope.
224----- Ryark	Good-----	Improbable: excess fines.	Improbable: excess fines.	Good.
225*: Shirleybasin-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Twocabin-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Lahtida-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
226----- Silas	Fair: shrink-swell, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
227*: Silas, gravelly substratum-----	Fair: wetness.	Probable-----	Probable-----	Poor: area reclaim.
Vensora-----	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, wetness.
228----- Stunner	Good-----	Improbable: excess fines.	Improbable: excess fines.	Good.
229*: Stunner-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Borollic Camborthids.				
230*: Stunner-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Tisworth-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt, excess sodium.
Blazon-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
231*: Stunner-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Good.
Urban land.				
232----- Teeler	Fair: large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
233*: Thiel-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
Lymanson-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Leavitt-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
234*: Tieside-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
234*: Pilotpeak----- Rock outcrop.	Poor: depth to rock.	Improbable: small stones.	Improbable: thin layer.	Poor: depth to rock, small stones.
235----- Tismid	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt, excess sodium.
236*, 237*: Tisworth-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt, excess sodium.
Gerdrum Family-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess salt, excess sodium.
238*: Tule-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
Chalkville-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones.
239*: Tyzak----- Rock outcrop.	Poor: depth to rock, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: depth to rock, large stones, slope.
240----- Wycolo	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey.
241*: Wycolo-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey.
Alcova-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
242*: Wycolo-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey.
Alcova-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.

See footnote at end of table.

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
242*: Urban land.				
243*: Wycolo-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey.
Tieside-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
244*: Wycolo-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Thermopolis-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Rock outcrop.				

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--WATER MANAGEMENT

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
100----- Aberone	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
101*: Abston-----	Severe: slope.	Severe: excess sodium.	Severe: no water.	Deep to water----	Slope, percs slowly.
Bullock-----	Severe: slope.	Severe: piping, excess sodium.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
102*: Alcova----- Borollic Camborthids.	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope, soil blowing.
103*: Alcova, shallow substratum-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
Lupinto-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
Dahlquist-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
104*: Alcova, calcareous subsoil-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Rock River-----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope, droughty.
105----- Almy	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope.
106*: Almy----- Urban land.	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Favorable.
107*: Almy-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Soil blowing.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
107*: Tismid-----	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Deep to water----	Slope, excess sodium.
108----- Alogia	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water----	Excess salt.
109*: Alogia-----	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water----	Excess salt.
Urban land.					
110----- Anchutz	Severe: seepage.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
111*: Ansel-----	Severe: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope, droughty.
Granile-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
112*: Bateson-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
Shirleybasin----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope, percs slowly.
113*: Blackhall-----	Severe: depth to rock, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water----	Slope, depth to rock.
Browtine, moist--	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
114*: Blackhall-----	Severe: depth to rock, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Satanka-----	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Rock outcrop.					

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
115*: Blazon-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Chaperton-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
116*: Blazon-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Delphill-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock, erodes easily.
117*: Bonjea-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Chugcreek-----	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Rock outcrop.					
118*: Bonjea-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Rock outcrop.					
Chugcreek-----	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
119----- Bosler, wet substratum	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, droughty, soil blowing.
120*: Bosler-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, soil blowing.
Borollic Camborthids.					
121*: Bosler, wet substratum-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, droughty, soil blowing.
Urban land.					

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
122*: Boyle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Alderon-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty.
Cathedral-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
123*: Boyle-----	Severe: depth to rock.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Boyle, thin solum-----	Severe: depth to rock.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
124*: Boyle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Rock outcrop.					
125*: Boyle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Lininger-----	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
126----- Browtine	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
127*: Browtine-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
Hilltoppe-----	Severe: seepage, cemented pan.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, cemented pan.
128*: Bruja-----	Severe: seepage, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Canwall-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, large stones, droughty.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
128*: Telecan-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
129*: Buffork-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Bucklon-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
130*: Byrnie-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Rock outcrop.					
131. Calciborolls					
132----- Canburn	Severe: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding-----	Wetness, flooding.
133----- Cantle	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding, frost action.	Wetness, flooding.
134*: Carbol-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Rock outcrop.					
135*: Carmody-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Edlin-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
136*: Carmody-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Ryan Park-----	Severe: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
137*: Cathedral-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
137*: Spinekop----- Rock outcrop.	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
138----- Center Creek	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Cutbanks cave----	Wetness.
139*: Chaperton, moderately saline-----	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, depth to rock, excess salt.
Blazon-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock, erodes easily.
140*: Chaperton-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Poposhia-----	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope.
141*: Cheadle----- Passcreek, cobble subsoil----- Rock outcrop.	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Severe: seepage, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.	
142*: Cheadle----- Rock outcrop.	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty.
Miracle-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
143. Cryaquolls					
144. Cryoborolls					

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
145*: Cushool-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Cutback-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
146*: Cushool-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Soil blowing, depth to rock.
Diamondville----	Moderate: seepage, depth to rock.	Severe: piping.	Severe: no water.	Deep to water----	Soil blowing, depth to rock.
147*: Cutback-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Pinelli-----	Moderate: slope.	Slight-----	Severe: no water.	Deep to water----	Slope, percs slowly.
148*: Dahlquist-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Rawlins-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
Browtine-----	Severe: seepage, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
149*: Dalecreek-----	Moderate: seepage, slope.	Moderate: piping, wetness.	Severe: cutbanks cave.	Slope, cutbanks cave.	Slope, wetness, soil blowing.
Kovich-----	Moderate: seepage.	Severe: wetness.	Severe: cutbanks cave.	Flooding, frost action.	Wetness, flooding.
150*: Delphill-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Blazon-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock, erodes easily.
151*: Diamondville----	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
151*: Cushool-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
152*: Diamonkit-----	Severe: slope, seepage, piping.	Severe: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Stylite-----	Severe: seepage, piping.	Severe: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, excess salt.
153----- Elkol	Moderate: slope.	Slight-----	Severe: no water.	Deep to water----	Slope, droughty, percs slowly.
154*: Elkol-----	Slight-----	Slight-----	Severe: no water.	Deep to water----	Droughty, percs slowly.
Gerdrum Family---	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Deep to water----	Slope, droughty.
155*: Elkol-----	Slight-----	Slight-----	Severe: no water.	Deep to water----	Droughty, percs slowly.
Gerdrum Family---	Slight-----	Severe: excess sodium.	Severe: slow refill.	Deep to water----	Percs slowly, excess sodium, excess salt.
156----- Evanston	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
157*: Evanston-----	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope.
Bonjea-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
158*: Fiveoh-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
Fiveoh, cobbly substratum-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Ryan Park-----	Severe: seepage.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
159*: Fiveoh, cobbly substratum-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Fiveoh----- Urban land.	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
160*: Fiveoh, cobbly substratum-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Droughty, soil blowing.
Joemre-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
161----- Folavar	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, droughty.
162*: Folavar----- Borollic Camborthids.	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, droughty.
163----- Forelle	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope.
164*: Forelle----- Urban land.	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Favorable.
165*: Forelle-----	Moderate: slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
Diamondville-----	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
166*: Glendive-----	Severe: seepage.	Severe: piping.	Moderate: deep to water.	Deep to water----	Favorable.
Redrob-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, droughty, erodes easily.
Grenoble-----	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
167*: Grenoble-----	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, fast intake.
Gerrard-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty, flooding.
168----- Greyback	Severe: seepage.	Severe: seepage, large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
169----- Gypla	Severe: seepage.	Severe: wetness, excess salt.	Severe: salty water.	Frost action, excess salt.	Wetness, droughty, erodes easily.
170*: Gypla-----	Severe: seepage.	Severe: wetness, excess salt.	Severe: salty water.	Frost action, excess salt.	Wetness, droughty, erodes easily.
Urban land.					
171*: Hanson-----	Severe: slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Quander-----	Severe: slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
172*: Hapjack-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Rogert-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Amesmont-----	Moderate: seepage, depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
173*: Ipson-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
Evanston-----	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
174----- Joemre	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
175----- Joemre	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
176*: Kezar-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Carbol----- Rock outcrop.	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
177*: Kildor----- Rock outcrop.	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, percs slowly, depth to rock.
178*: Kiltabar-----	Slight-----	Severe: excess salt.	Severe: slow refill, salty water.	Excess salt-----	Wetness, droughty, erodes easily.
Tismid-----	Slight-----	Severe: excess sodium.	Severe: no water.	Deep to water----	Soil blowing, excess sodium.
179*: Lakehelen-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Redfeather-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Amesmont-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
180----- Leavitt	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
181*: Leavitt-----	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water----	Slope, percs slowly.
Granile-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
182*: Leavitt-----	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
182*: Hanson-----	Severe: slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
183*: Leavitt-----	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope.
Quander-----	Severe: slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
184----- Luhon	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope, erodes easily.
185*: Luvar-----	Severe: seepage, piping.	Moderate: thin layer, piping, excess salt.	Severe: no water.	Deep to water----	Slope, excess salt.
Stylite-----	Severe: seepage, piping.	Severe: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, excess salt.
Diamonkit-----	Severe: seepage, piping.	Severe: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
186*: Lymanson loam----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Lymanson cobbly loam-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
187----- Manada	Severe: seepage.	Moderate: seepage, wetness.	Moderate: deep to water.	Slope-----	Slope, wetness, soil blowing.
188----- McFadden	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope.
189*: Miracle-----	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Cheadle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty.
190*: Moyerson-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, percs slowly, depth to rock.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
190*: Kemmerer-----	Severe: slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Deep to water----	Slope, percs slowly, depth to rock.
191*: Nathale-----	Severe: seepage, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Passcreek, cobble subscil-----	Severe: seepage, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Rock outcrop.					
192----- Pahlow	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water----	Large stones, droughty.
193*: Pilotpeak-----	Severe: depth to rock, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Canwall-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
194----- Pinelli	Moderate: slope.	Slight-----	Severe: no water.	Deep to water----	Slope, percs slowly, erodes easily.
195*. Pits, mine					
196*: Poin-----	Severe: depth to rock, slope.	Severe: seepage, large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Bowen-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Rock outcrop.					
197*: Poposhia-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
Blazon-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
198*: Poposhia-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope.
Forelle-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
199*: Poposhia-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope.
Chaperton-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
200*: Rainbolt-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Morset-----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope, droughty.
201*: Redfeather-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Lakehelen-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Rogert-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
202----- Redrob	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, excess salt.
203*: Redrob, frequently flooded-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, flooding, excess salt.
Grenoble-----	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, droughty.
Redrob-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, soil blowing, excess salt.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
204*: Redrob, frequently flooded-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, flooding, excess salt.
Redrob-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, excess salt.
205*: Redrob, frequently flooded-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, flooding, excess salt.
Redrob-----	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Cutbanks cave----	Wetness, soil blowing, excess salt.
Urban land.					
206*: Rentsac-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Wycolo-----	Moderate: seepage, depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
207*: Renvers-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Chalkhill-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
208*: Rimton-----	Severe: slope.	Moderate: thin layer, large stones.	Severe: no water.	Deep to water----	Slope, large stones, soil blowing.
Passcreek, cobble subsoil-----	Severe: seepage, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Miracle-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
209*. Riverwash					

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
210*: Rock outcrop.					
Bonjea-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
211*: Rock outcrop.					
Bruja-----	Severe: seepage, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Byrnie-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty.
212*: Rock outcrop.					
Cathedral-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
213*: Rock outcrop.					
Cathedral-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Alderon-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
214*: Rock outcrop.					
Pilotpeak-----	Severe: depth to rock, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
215*: Rock outcrop.					
Rogert-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
216-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
217-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope.
218*: Rock River-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
218*: Urban land.					
219*: Rogert-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Lakehelen-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Rock outcrop.					
220*: Rogert-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Rock outcrop.					
Amesmont-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
221----- Rohonda	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
222*: Rohonda-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Tieside-----	Severe: depth to rock.	Severe: piping.	Severe: no water.	Deep to water----	Slope, droughty.
223*: Rohonda-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Cheadle-----	Severe: depth to rock, slope.	Severe: seepage, large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Rock outcrop.					
224----- Ryark	Severe: seepage.	Moderate: thin layer.	Severe: no water.	Deep to water----	Slope, fast intake, soil blowing.
225*: Shirleybasin----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope, percs slowly.
Twocabin-----	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
225*: Lahtida-----	Moderate: depth to rock, slope.	Severe: piping.	Severe: no water.	Deep to water----	Slope, percs slowly, depth to rock.
226----- Silas	Moderate: seepage, slope.	Moderate: piping, wetness.	Moderate: deep to water, slow refill.	Slope-----	Slope, wetness.
227*: Silas, gravelly substratum-----	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Slope, cutbanks cave.	Slope, wetness.
Vensora-----	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Frost action----	Wetness.
228----- Stunner	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
229*: Stunner-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
Borollic Camborthids.					
230*: Stunner-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
Tisworth-----	Moderate: seepage.	Severe: excess sodium.	Severe: no water.	Deep to water----	Droughty, soil blowing.
Blazon-----	Severe: depth to rock.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
231*: Stunner-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water----	Slope, soil blowing.
Urban land.					
232----- Teeler	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
233*: Thiel-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty.
Lymanson-----	Severe: seepage, slope.	Moderate: thin layer.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Leavitt-----	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water----	Slope.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
234*: Tieside-----	Severe: depth to rock.	Severe: piping.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
Pilotpeak-----	Severe: depth to rock.	Severe: seepage.	Severe: no water.	Deep to water----	Slope, droughty, depth to rock.
Rock outcrop.					
235----- Tismid	Slight-----	Severe: excess sodium.	Severe: no water.	Deep to water----	Soil blowing, excess sodium.
236*: Tisworth-----	Moderate: seepage, slope.	Severe: excess sodium.	Severe: no water.	Deep to water----	Slope, droughty.
Gerdrum Family---	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Deep to water----	Slope, droughty.
237*: Tisworth-----	Moderate: seepage, slope.	Severe: excess sodium.	Severe: no water.	Deep to water----	Slope, droughty.
Gerdrum Family---	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
238*: Tule-----	Severe: depth to rock.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
Chalkville-----	Severe: depth to rock.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, depth to rock.
239*: Tyzak-----	Severe: depth to rock, slope.	Severe: large stones.	Severe: no water.	Deep to water----	Slope, large stones, droughty.
Rock outcrop.					
240----- Wycolo	Moderate: seepage, depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
241*: Wycolo-----	Moderate: seepage, depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Alcova-----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope.

See footnote at end of table.

TABLE 14.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--	
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation
242*: Wycolo-----	Moderate: seepage, depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Alcova----- Urban land.	Moderate: seepage, slope.	Slight-----	Severe: no water.	Deep to water----	Slope.
243*: Wycolo-----	Moderate: seepage, depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Tieside-----	Severe: depth to rock.	Severe: piping.	Severe: no water.	Deep to water----	Slope, droughty, soil blowing.
244*: Wycolo-----	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.
Thermopolis----- Rock outcrop.	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water----	Slope, soil blowing, depth to rock.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--ENGINEERING INDEX PROPERTIES

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
100----- Aberone	0-8	Gravelly sandy loam.	SM	A-2, A-1-B	0	0	65-85	55-75	35-55	20-35	<25	NP-5
	8-15	Very gravelly sandy loam.	GM	A-1-B	0	0-15	50-60	40-50	25-35	15-25	<25	NP-5
	15-60	Extremely gravelly coarse sandy loam.	GP-GM	A-1-A	0	0-30	25-35	20-25	13-15	5-10	<20	NP
101*: Abston-----	0-2	Loam-----	CL-ML	A-4	0	0	90-100	90-100	65-80	50-60	25-30	5-10
	2-25	Clay, clay loam, silty clay loam.	CL, CH	A-7	0	0	90-100	90-100	85-95	70-85	40-55	15-30
	25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bullock-----	0-2	Sandy loam----	SM	A-2	0	0	100	100	70-80	25-35	<25	NP-5
	2-16	Sandy clay loam, clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	100	100	85-95	50-60	25-40	5-15
	16-24	Sandy clay loam, loam.	CL-ML, CL	A-4	0	0	100	95-100	85-90	50-60	25-30	5-10
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
102*: Alcova-----	0-3	Sandy loam----	SM, SC-SM	A-4	0	0	100	100	65-75	35-45	20-30	NP-10
	3-15	Sandy clay loam, clay loam.	CL, SC	A-6	0	0	90-100	85-100	60-80	35-60	30-40	10-20
	15-37	Sandy clay loam.	SC	A-6, A-4	0	0	90-100	85-100	60-85	35-50	25-35	5-15
	37-60	Very gravelly sandy clay loam, very gravelly loam.	GP-GC, GC	A-2	0	0-15	30-55	25-50	15-40	10-30	30-35	10-15
Borollic Camborthids.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
103*: Alcova, shallow substratum--	0-2	Loam-----	CL-ML	A-4	0	0	90-100	90-100	75-85	55-65	20-30	5-10
	2-16	Sandy clay loam, clay loam.	CL, SC	A-6	0	0	90-100	85-100	60-80	35-60	30-40	10-20
	16-27	Very gravelly sandy clay loam, very gravelly loam.	GP-GC, GC	A-2	0	0-15	30-55	25-50	15-40	10-30	30-35	10-15
	27-60	Very gravelly sandy loam, extremely gravelly sandy loam.	GP-GM, GM, GM-GC	A-2, A-1	0	0-15	25-55	20-50	10-35	5-20	15-30	NP-10
Lupinto-----	0-2	Gravelly fine sandy loam.	GM	A-2, A-1-B	0	0	55-65	50-60	40-50	20-30	15-25	NP-5
	2-7	Sandy clay loam, gravelly sandy clay loam.	SC	A-6	0	0	80-95	70-90	60-70	35-50	30-35	10-15
	7-24	Very gravelly loam, very gravelly sandy clay loam.	GC	A-2	0	0	40-50	35-45	30-40	20-35	25-35	10-15
	24-60	Very gravelly sandy loam, extremely gravelly sandy loam.	GM, GP-GM	A-1	0	0-15	25-50	20-50	13-30	10-20	15-25	NP-5
Dahlquist----	0-4	Very gravelly loam.	GM-GC, GC, SC-SM, SC	A-4, A-2-4	0-10	15-25	50-75	45-65	40-60	30-50	25-30	5-10
	4-20	Very gravelly sandy clay loam, extremely gravelly sandy clay loam.	GC	A-2	0-10	15-25	30-60	25-55	20-45	10-30	30-35	10-15
	20-60	Extremely gravelly sandy loam.	GM, GP-GM	A-1	0-10	15-35	25-35	15-30	11-22	5-15	15-25	NP-5

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
104*: Alcova, calcareous subsoil-----	0-2	Sandy loam----	SM, SC-SM	A-4	0	0	100	100	65-75	35-45	15-30	NP-10
	2-16	Sandy clay loam, clay loam.	CL, SC	A-6	0	0	90-100	85-100	60-80	35-60	30-40	10-20
	16-28	Clay loam, sandy clay loam.	CL, SC	A-6	0	0	90-100	85-100	60-85	35-60	30-35	10-15
	28-60	Very gravelly sandy loam, extremely gravelly sandy loam.	GP-GM, GM, GM-GC	A-2, A-1	0	0-15	25-55	20-50	10-35	5-20	15-30	NP-10
Rock River----	0-2	Very gravelly sandy loam.	GP-GM, GM	A-1	0	0	35-55	30-50	20-35	10-25	15-25	NP-5
	2-10	Gravelly sandy clay loam.	SC, GC	A-6, A-2-6	0	0	60-80	55-75	45-60	30-45	30-40	10-15
	10-60	Gravelly sandy clay loam.	SC, GC	A-6, A-2-6	0	0	60-80	55-75	45-60	30-40	30-40	10-15
105----- Almy	0-2	Loam-----	CL-ML	A-4	0	0	100	90-100	70-85	50-70	20-30	5-10
	2-11	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	75-90	50-75	25-35	5-15
	11-35	Sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-4, A-6	0	0-5	100	90-100	70-85	45-65	25-35	5-15
	35-60	Sandy loam, very fine sandy loam.	SM, SC-SM	A-2, A-4	0	0-5	100	90-100	50-70	30-50	20-30	NP-10
106*: Almy-----	0-2	Loam-----	CL-ML	A-4	0	0	100	90-100	70-85	50-70	20-30	5-10
	2-16	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	75-90	50-75	25-35	5-15
	16-29	Sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-4, A-6	0	0-5	100	90-100	70-85	45-65	25-35	5-15
	29-60	Sandy loam, very fine sandy loam.	SM, SC-SM	A-2, A-4	0	0-5	100	90-100	50-70	30-50	20-30	NP-10
Urban land.												
107*: Almy-----	0-2	Fine sandy loam.	SM	A-2	0	0	100	90-100	60-75	20-35	15-20	NP-5
	2-14	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	75-90	50-75	25-35	5-15
	14-38	Sandy clay loam, loam.	SC-SM, SC, CL, CL-ML	A-4, A-6	0	0-5	100	90-100	70-85	45-65	25-35	5-15
	38-60	Sandy loam, very fine sandy loam.	SM, SC-SM	A-2, A-4	0	0-5	100	90-100	50-70	30-50	20-30	NP-10

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
107*: Tismid-----	0-2	Sandy clay loam.	SC, CL	A-6	0	0	100	100	85-90	45-55	25-30	10-15
	2-7	Sandy clay loam, clay loam.	SC, CL	A-6	0	0	100	100	85-90	45-65	30-40	10-20
	7-14	Sandy clay loam, clay loam.	SC, CL	A-6	0	0	100	100	85-90	45-65	30-40	10-20
	14-60	Sandy clay loam, loam.	SC, CL	A-6	0	0	90-100	85-100	75-90	40-60	30-40	10-20
108----- Alogia	0-3	Loam-----	ML	A-4	0	0	100	100	75-85	50-70	---	NP
	3-21	Loam, clay loam, silty clay loam.	CL	A-6	0	0	100	100	80-90	75-85	30-40	10-15
	21-41	Loam, silt loam.	ML	A-4	0	0	100	100	75-85	65-75	30-35	5-10
	41-60	Clay loam, loam, silt loam.	CL	A-6	0	0	100	100	80-90	60-80	30-40	10-20
109*: Alogia-----	0-3	Loam-----	ML	A-4	0	0	100	100	75-85	50-70	---	NP
	3-21	Loam, clay loam, silty clay loam.	CL	A-6	0	0	100	100	80-90	75-85	30-40	10-15
	21-41	Loam, silt loam.	ML	A-4	0	0	100	100	75-85	65-75	30-35	5-10
	41-60	Clay loam, loam, silt loam.	CL	A-6	0	0	100	100	80-90	60-80	30-40	10-20
Urban land.												
110----- Anchutz	0-2	Sandy loam----	SM, SC-SM	A-4	0	0	100	100	65-75	35-50	15-25	NP-5
	2-15	Sandy clay loam.	SC, CL	A-6	0	0	100	100	80-90	45-60	30-40	10-20
	15-39	Sandy clay loam, clay loam.	CL	A-6	0	0	100	100	85-90	50-70	30-40	10-20
	39-60	Sandy loam, sandy clay loam.	SM, SC-SM	A-4	0	0	95-100	90-100	65-75	35-50	15-30	NP-10
111*: Ansel-----	0-6	Gravelly sandy loam.	SM	A-2, A-1	0	0-10	70-85	60-75	40-55	20-35	---	NP
	6-24	Gravelly sandy clay loam.	SC, GC	A-6	0	0-10	65-85	55-75	50-65	35-50	35-40	15-20
	24-60	Very gravelly sandy loam.	GM-GC	A-2, A-1	0	0-10	40-55	35-50	25-40	10-25	20-30	5-10

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
111*: Granile-----	0-2	Gravelly sandy loam.	SM	A-2, A-1	0-5	5-15	75-85	65-75	45-55	20-35	15-25	NP-5
	2-15	Very gravelly sandy loam.	GM, GP-GM	A-1	0-5	5-20	45-55	40-50	25-35	10-20	15-25	NP-5
	15-24	Very gravelly sandy clay loam, very gravelly clay loam, very cobbly clay loam.	GC	A-2	0-5	5-30	40-50	30-50	25-40	15-35	35-40	15-20
	24-60	Very gravelly sandy loam, very cobbly sandy loam.	GM	A-1	0-5	5-30	40-50	30-50	20-35	10-25	15-25	NP-5
112*: Bateson-----	0-2	Gravelly sandy clay loam.	SC	A-2	0	0	60-75	55-65	30-50	20-35	30-35	10-15
	2-21	Gravelly sandy clay loam.	SC	A-2	0	0	60-75	55-65	30-50	20-35	30-35	10-15
	21-29	Very gravelly sandy loam.	GM, GP-GM	A-1	0	0	40-55	25-35	15-35	5-15	<25	NP-5
	29-60	Very gravelly loamy sand.	GP, GP-GM	A-1	0	0	40-55	25-35	10-30	0-10	---	NP
Shirleybasin-	0-2	Loam-----	CL	A-6, A-7	0	0	100	90-100	75-90	50-75	35-45	15-25
	2-8	Sandy clay loam, clay loam.	CL, SC	A-7	0	0	100	90-100	75-90	45-65	40-50	20-30
	8-27	Clay, clay loam.	CH	A-7	0	0	80-100	75-100	70-95	60-80	50-60	30-35
	27-60	Clay loam, loam, sandy clay loam.	CL	A-6, A-7	0	0	95-100	85-100	75-90	50-75	35-50	15-30
113*: Blackhall----	0-2	Very gravelly fine sandy loam.	GP-GM, GM	A-1	0	0-5	40-55	30-50	30-45	10-25	15-25	NP-5
	2-18	Sandy loam, fine sandy loam.	SM	A-2	0	0-5	80-100	75-100	60-90	15-25	15-25	NP-5
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
113*: Browline, moist-----	0-3	Very gravelly sandy loam.	GM, GP-GM	A-2, A-1	0	0	35-55	30-50	20-40	10-30	15-25	NP-5
	3-19	Extremely gravelly sandy loam, very gravelly sandy loam.	GM, GP-GM	A-1	0	0-15	25-30	20-25	15-20	5-13	15-25	NP-5
	19-43	Very gravelly coarse sandy loam, extremely cobbly coarse sandy loam.	SC-SM, SM, GM, GM-GC	A-2, A-4, A-1-B	0	10-50	60-90	50-80	30-45	20-40	15-25	NP-5
	43-60	Extremely gravelly sandy clay loam.	GC	A-2-6	0	15-25	25-35	20-30	15-25	10-20	30-35	10-15
114*: Blackhall----	0-2	Sandy loam----	SM	A-2	0	0-5	90-100	90-100	65-90	25-35	15-25	NP-5
	2-16	Sandy loam, fine sandy loam.	SM	A-2	0	0-5	80-100	75-100	60-90	15-25	15-25	NP-5
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Satanka-----	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	75-85	35-45	---	NP
	4-9	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	75-90	45-60	30-40	10-15
	9-35	Sandy loam, sandy clay loam.	CL-ML, SC-SM, SC, CL	A-4, A-6	0	0	95-100	95-100	75-90	35-55	25-35	5-15
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
115*: Blazon-----	0-5	Loam-----	CL	A-6	0	0	90-100	90-100	70-90	60-75	30-35	10-15
	5-15	Clay loam----	CL	A-6	0	0	90-100	90-100	75-90	65-80	35-40	15-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Chaperton----	0-3	Clay loam----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
	3-15	Clay loam----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
	15-24	Clay loam----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
116*: Blazon-----	0-5	Loam-----	CL	A-6	0	0	90-100	90-100	70-90	60-75	30-35	10-15
	5-15	Clay loam----	CL	A-6	0	0	90-100	90-100	75-90	65-80	35-40	15-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
116*: Delphill----	0-3	Clay loam----	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	15-20
	3-28	Clay loam, loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
117*: Bonjea-----	0-4	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	90-100	90-100	60-90	30-40	20-30	NP-10
	4-10	Sandy clay loam, gravelly sandy clay loam.	SC	A-6	0	0	70-90	65-85	50-75	35-50	30-35	10-15
	10-15	Gravelly sandy clay loam, very gravelly sandy clay loam.	SC	A-2	0	0	75-90	35-75	25-45	15-35	30-35	10-15
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Chugcreek----	0-4	Sandy loam----	SM, SC-SM	A-4	0	0	90-100	75-100	50-75	35-50	15-25	NP-5
	4-19	Sandy loam----	SC-SM, SC	A-4	0	0	90-100	75-100	50-75	35-50	20-25	5-10
	19-29	Sandy clay loam, clay loam.	SC, CL	A-6	0	0	85-100	75-100	65-85	45-70	30-40	10-20
	29-38	Gravelly sandy clay loam, gravelly clay loam.	SC, CL	A-6	0	0	70-85	60-75	55-65	35-55	30-40	10-20
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
118*: Bonjea-----	0-4	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	90-100	90-100	60-90	30-40	20-30	NP-10
	4-10	Sandy clay loam, gravelly sandy clay loam.	SC	A-6	0	0	70-90	65-85	50-75	35-50	30-35	10-15
	10-15	Gravelly sandy clay loam, very gravelly sandy clay loam.	SC	A-2	0	0	75-90	35-75	25-45	15-35	30-35	10-15
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
118*: Chugcreek----	0-5	Sandy loam----	SM, SC-SM	A-4	0	0	90-100	75-100	50-75	35-50	15-25	NP-5
	5-34	Sandy clay loam, clay loam.	SC, CL	A-6	0	0	85-100	75-100	65-85	45-70	30-40	10-20
	34-36	Gravelly sandy clay loam, gravelly clay loam.	SC, CL	A-6	0	0	70-85	60-75	55-65	35-55	30-40	10-20
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
119----- Bosler, wet substratum	0-3	Fine sandy loam.	SM	A-2, A-4	0	0	100	100	85-90	30-45	15-25	NP-5
	3-20	Sandy clay loam.	SC	A-6	0	0	100	100	65-75	35-50	30-35	10-15
	20-60	Very gravelly sand, very gravelly loamy sand.	GP-GM, GP	A-1	0	0	40-55	35-50	20-30	0-10	---	NP
120*: Bosler-----	0-7	Fine sandy loam.	SM	A-4	0	0	85-100	85-100	75-85	35-50	<25	NP-5
	7-15	Sandy clay loam.	SC, SC-SM, CL, CL-ML	A-6, A-4	0	0	95-100	95-100	80-90	45-60	25-35	5-15
	15-30	Loam, sandy clay loam.	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0	75-100	75-85	60-75	40-60	25-35	5-15
	30-60	Very gravelly sand, very gravelly loamy sand.	GP, GP-GM	A-1	0	0	25-40	25-40	5-25	0-10	---	NP
Borollic Camborthids.												
121*: Bosler, wet substratum--	0-3	Fine sandy loam.	SM	A-2, A-4	0	0	100	100	85-90	30-45	15-25	NP-5
	3-20	Sandy clay loam.	SC	A-6	0	0	100	100	65-75	35-50	30-35	10-15
	20-60	Very gravelly sand, very gravelly loamy sand.	GP-GM, GP	A-1	0	0	40-55	35-50	20-30	0-10	---	NP
Urban land.												
122*: Boyle-----	0-2	Gravelly sandy loam.	SM, SC-SM	A-1	0	0-5	85-95	50-70	30-50	15-25	20-25	NP-5
	2-10	Very gravelly sandy clay loam.	SC	A-2	0	0-5	85-95	30-40	20-35	15-25	30-35	10-15
	10	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
122*: Alderon-----	0-6	Gravelly sandy loam.	SM, SC-SM	A-2, A-1	0	0	75-90	55-75	25-45	15-35	15-30	NP-10
	6-34	Gravelly sandy clay loam.	SC	A-2	0	0	70-80	50-65	30-40	20-35	30-35	10-15
	34-40	Very gravelly coarse sandy loam, very gravelly sandy loam.	GM, SM, GP-GM, SP-SM	A-1	0	0	50-60	35-50	20-35	10-20	15-25	NP-5
	40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cathedral----	0-7	Gravelly sandy loam.	SM, SC-SM	A-2-4, A-4	0-10	0-5	70-85	60-75	40-55	25-40	15-25	NP-5
	7-14	Very gravelly coarse sandy loam, very gravelly sandy loam.	GM, GM-GC	A-1	0-10	0-20	45-60	30-50	20-35	10-25	15-25	NP-5
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
123*: Boyle-----	0-3	Gravelly sandy loam.	SM, SC-SM	A-1	0	0-5	85-95	50-70	30-50	15-25	20-25	NP-5
	3-13	Very gravelly sandy clay loam.	SC	A-2	0	0-5	85-95	30-40	20-35	15-25	30-35	10-15
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Boyle, thin solum-----	0-2	Gravelly sandy loam.	SM, SC-SM	A-1	0	0-5	85-95	50-70	30-50	15-25	20-25	NP-5
	2-9	Very gravelly sandy clay loam.	SC	A-2	0	0-5	85-95	30-40	20-35	15-25	30-35	10-15
	9	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
124*: Boyle-----	0-3	Gravelly sandy loam.	SM, SC-SM	A-1	0	0-5	85-95	50-70	30-50	15-25	20-25	NP-5
	3-17	Very gravelly sandy clay loam.	SC	A-2	0	0-5	85-95	30-40	20-35	15-25	30-35	10-15
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
125*: Boyle-----	0-3	Gravelly sandy loam.	SM, SC-SM	A-1	0	0-5	85-95	50-70	30-50	15-25	20-25	NP-5
	3-6	Gravelly sandy clay loam.	SC	A-2	0	0-5	85-95	50-60	30-50	25-35	30-35	10-15
	6-12	Very gravelly sandy clay loam.	SC	A-2	0	0-5	85-95	30-40	20-35	15-25	30-35	10-15
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Lininger----	0-7	Loam-----	CL-ML	A-4	0	0	90-100	90-100	70-85	55-65	25-30	5-10
	7-14	Gravelly sandy clay loam.	SC, GC	A-2	0	0	60-80	55-75	35-55	20-35	30-35	10-15
	14-24	Very gravelly sandy clay loam.	GM-GC	A-2, A-1-B	0	0	45-55	40-50	25-35	15-25	25-30	5-10
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
126----- Browline	0-3	Very gravelly fine sandy loam.	GM, GP-GM	A-1	0	0	30-50	25-45	20-40	10-25	15-20	NP-5
	3-14	Very gravelly sandy loam, extremely gravelly sandy loam.	GM, GP-GM	A-1	0	0-40	30-45	25-40	20-25	10-17	15-25	NP-5
	14-31	Extremely gravelly loam, extremely gravelly sandy loam.	GP-GM, GM	A-1	0	0-25	30-40	15-25	13-21	5-15	15-25	NP-5
	31-60	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam.	GM, GP-GM	A-1	0	0-10	25-30	20-25	13-16	5-13	15-25	NP-5

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
127*: Browline-----	0-5	Very gravelly sandy loam.	GM, GP-GM	A-1	0	0	30-50	25-45	20-40	10-25	15-20	NP-5
	5-12	Very gravelly sandy loam, extremely gravelly sandy loam.	GM, GP-GM	A-1	0	0-40	30-45	25-40	20-25	10-17	15-25	NP-5
	12-42	Extremely gravelly loam, extremely gravelly sandy loam.	GP-GM, GM	A-1	0	0-25	30-40	15-25	13-21	5-15	15-25	NP-5
	42-60	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam.	GM, GP-GM	A-1	0	0-10	25-30	20-25	13-16	5-13	15-25	NP-5
Hilltoppe----	0-3	Very gravelly sandy loam.	GM, GM-GC	A-1	0	0-5	45-55	40-50	30-35	15-25	<25	NP-5
	3-14	Extremely gravelly sandy loam, very gravelly sandy loam.	GP-GM, GM	A-1	0	5-15	25-50	20-40	15-30	5-20	<25	NP-5
	14-33	Indurated-----	---	---	---	---	---	---	---	---	---	---
	33-60	Extremely gravelly sandy loam.	GP-GM, GM	A-1	0	25-40	25-35	20-30	15-22	5-15	<25	NP-5
128*: Bruja-----	0-5	Very cobbly very fine sandy loam.	SM, SC-SM, GM-GC	A-2-4, A-4	0	25-40	55-75	50-70	45-65	30-40	20-25	NP-5
	5+23	Very cobbly very fine sandy loam, extremely cobbly very fine sandy loam.	GM, GM-GC	A-2, A-1-B	0-15	30-60	50-60	40-55	35-50	20-30	20-25	NP-5
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
128*: Canwall-----	0-3	Gravelly fine sandy loam.	SM	A-2	0	0-5	75-80	70-75	50-70	20-30	15-20	NP-5
	3-12	Gravelly very fine sandy loam, gravelly fine sandy loam.	SM, GM	A-4	0	0-10	65-80	60-75	50-65	35-50	15-25	NP-5
	12-26	Very cobbly very fine sandy loam, very cobbly fine sandy loam.	SM	A-4, A-2-4	0-25	40-60	65-75	55-70	45-60	25-40	15-25	NP-5
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Telecan-----	0-16	Fine sandy loam.	SM	A-4	0	0	85-100	85-100	70-85	35-50	0-25	NP-5
	16-60	Very fine sandy loam, fine sandy loam.	SM, ML	A-4	0	0	80-100	75-100	65-75	40-55	0-25	NP-5
129*: Buffork-----	0-7	Sandy loam----	SM	A-2, A-4	0	0-10	85-95	80-90	60-65	30-45	15-25	NP-5
	7-17	Sandy clay loam.	SC	A-6	0	0-5	90-100	85-95	65-75	40-50	30-35	10-15
	17-26	Coarse sandy loam.	SM	A-2	0	0-5	80-90	75-85	35-45	25-35	---	NP
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bucklon-----	0-6	Sandy loam----	SM, SC-SM	A-4, A-2	0	0	100	85-100	60-80	25-45	<25	NP-10
	6-16	Loam-----	CL, SC	A-6	0	0	85-100	75-100	65-90	45-65	25-35	10-15
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
130*: Byrnie-----	0-2	Sandy loam----	SC-SM	A-2, A-4	0	0	80-95	75-90	60-70	30-50	20-25	5-10
	2-12	Gravelly sandy loam, gravelly fine sandy loam.	SM, GM	A-2, A-1, A-4	0	0-10	55-80	50-75	40-60	20-40	15-25	NP-5
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
131. Calciborolls												
132----- Canburn	0-23	Loam-----	CL	A-6	0	0	100	100	85-95	50-60	25-35	10-15
	23-50	Loam-----	CL	A-6	0	0	95-100	85-100	75-90	50-75	25-35	10-15
	50-60	Coarse sandy loam.	SM, SC-SM	A-4, A-2	0	0	100	85-100	55-75	25-45	<25	NP-10
133----- Cattle	0-27	Loam-----	CL	A-6	0	0	95-100	90-100	85-90	65-80	30-35	10-15
	27-60	Loam, silty clay loam.	CL	A-6	0	0	95-100	85-100	75-90	65-80	30-40	10-20

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
134*: Carbol-----	0-3	Sandy loam----	SM	A-2-4, A-4	0	0-15	100	85-100	65-75	30-50	15-25	NP-5
	3-10	Sandy clay loam.	SC, CL	A-6	0	0	100	85-100	75-90	40-55	30-35	10-15
	10-14	Very cobbly sandy clay loam, extremely cobbly sandy clay loam.	GC, SC	A-6, A-2-6	0-30	40-75	60-70	55-65	45-55	25-40	30-35	10-15
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
135*: Carmody-----	0-1	Fine sandy loam.	SM, ML	A-4	0	0	100	100	80-90	40-55	15-25	NP-5
	1-24	Fine sandy loam, very fine sandy loam.	SM, ML	A-4	0	0	100	100	85-95	40-60	15-25	NP-5
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Edlin-----	0-3	Fine sandy loam.	SM, ML	A-4	0	0	100	100	85-90	45-55	<25	NP-5
	3-23	Fine sandy loam.	SM, ML	A-4	0	0	100	100	85-90	45-55	<25	NP-5
	23-60	Fine sandy loam, sandy loam.	SM	A-4	0	0	95-100	95-100	75-85	35-50	<25	NP-5
136*: Carmody-----	0-5	Fine sandy loam.	SM, ML	A-4	0	0	100	100	80-90	40-55	15-25	NP-5
	5-29	Fine sandy loam, very fine sandy loam.	SM, ML	A-4	0	0	100	100	85-95	40-60	15-25	NP-5
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Ryan Park----	0-1	Fine sandy loam.	SM	A-4	0	0	100	100	85-90	35-50	<25	NP-5
	1-23	Fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	95-100	80-90	35-50	<25	NP-10
	23-60	Fine sandy loam.	SM	A-4	0	0	100	100	85-90	35-50	<25	NP-5

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
137*: Cathedral----	0-7	Gravelly sandy loam.	SM, SC-SM	A-2-4, A-4	0-10	0-5	70-85	60-75	40-55	25-40	15-25	NP-5
	7-16	Very gravelly coarse sandy loam, very gravelly sandy loam.	GM, GM-GC	A-1	0-10	0-20	45-60	30-50	20-35	10-25	15-25	NP-5
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Spinekop----	0-2	Sandy loam----	SM	A-2	0	0	100	90-100	70-80	25-35	15-25	NP-5
	2-31	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	100	90-95	70-85	25-40	5-15
	31-60	Loam, very fine sandy loam.	ML, CL-ML	A-4	0	0	100	100	90-95	60-75	20-30	NP-10
Rock outcrop.												
138-----	0-3	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	80-90	55-75	25-35	5-15
Center Creek	3-30	Clay loam-----	CL	A-6	0	0	90-100	90-100	85-95	60-85	35-40	15-20
	30-37	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	80-90	55-75	25-35	5-15
	37-60	Very gravelly sandy loam, very gravelly loamy sand.	GM, GP-GM	A-1	0	0	40-50	35-45	25-30	10-20	15-25	NP-5
139*: Chaperton, moderately saline-----	0-4	Loam-----	CL	A-6	0	0-5	95-100	90-100	75-90	50-70	25-30	10-15
	4-16	Loam-----	CL	A-6	0	0	95-100	90-100	75-90	50-70	25-30	10-15
	16-35	Loam-----	CL	A-6	0	0	95-100	90-100	75-90	50-70	25-30	10-15
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Blazon-----	0-2	Clay loam-----	CL	A-6	0	0	90-100	90-100	75-90	60-80	35-40	15-20
	2-16	Clay loam-----	CL	A-6	0	0	90-100	90-100	75-90	65-80	35-40	15-20
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
140*: Chaperton----	0-1	Cobbly sandy loam.	SC-SM	A-2, A-4	0-5	15-25	75-85	70-80	50-60	25-40	20-25	5-10
	1-10	Clay loam-----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
	10-28	Clay loam-----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Poposhia----	0-1	Very cobbly sandy loam.	GM, SM	A-2, A-1	0-5	25-30	50-70	45-65	35-50	20-35	15-25	NP-5
	1-7	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	60-80	25-35	10-20
	7-60	Loam, clay loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-70	25-35	10-20

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
141*: Cheadle-----	0-3	Cobbly very fine sandy loam.	SM, SC-SM	A-4	0-5	15-25	90-95	80-90	70-80	40-50	15-25	NP-5
	3-7	Very cobbly very fine sandy loam.	SM, SC-SM, GM, GM-GC	A-4	0-5	30-40	65-85	65-75	60-70	35-45	15-25	NP-5
	7-10	Very channery fine sandy loam, very cobbly sandy loam.	SM, GM	A-2, A-1-B	0-5	15-35	55-75	50-70	40-55	20-35	15-25	NP-5
	10	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Passcreek, cobbly subsoil-----	0-4	Fine sandy loam.	ML, CL-ML, SM, SC-SM	A-4	0-5	0-10	95-100	95-100	85-95	40-55	15-30	NP-10
	4-11	Sandy clay loam.	SC, CL	A-6	0-5	5-10	90-95	90-95	80-95	35-55	30-40	10-20
	11-22	Very cobbly fine sandy loam.	SM, SC-SM	A-2, A-1-B	0-5	50-65	60-80	50-70	40-60	20-35	15-30	NP-10
	22	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
142*: Cheadle-----	0-4	Sandy loam----	SM, SC-SM	A-4	0	5-20	90-100	85-95	65-75	35-50	15-25	NP-5
	4-10	Very channery fine sandy loam, very cobbly sandy loam.	SM, GM	A-2, A-1-B	0-5	15-35	55-75	50-70	40-55	20-35	15-25	NP-5
	10	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
Miracle-----	0-12	Fine sandy loam.	SM	A-2, A-4	0	0	90-100	85-100	65-85	25-45	<25	NP-5
	12-24	Sandy clay loam.	SC-SM	A-2, A-4	0	0	90-100	85-100	75-80	30-50	25-30	5-10
	24-38	Sandy loam----	SM	A-2, A-4	0	0	90-100	85-100	60-80	25-45	<25	NP-5
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
143. Cryaquolls												
144. Cryoborolls												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
145*: Cushool-----	0-3	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-85	30-50	20-30	NP-10
	3-16	Sandy clay loam.	SC	A-2, A-6	0	0	90-100	85-100	70-85	30-50	30-40	10-20
	16-32	Gravelly sandy loam.	SM, SC-SM	A-2, A-1-B	0	0	60-80	55-75	40-55	20-35	20-25	NP-5
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cutback-----	0-1	Fine sandy loam.	SC-SM	A-4	0	0	85-100	75-90	60-75	35-50	20-25	5-10
	1-7	Sandy clay loam, loam, clay loam.	CL, SC	A-6	0	0	90-100	85-95	60-80	40-70	30-35	10-15
	7-17	Sandy clay loam, loam, clay loam.	CL, SC	A-6	0	0	90-100	85-95	60-80	40-70	30-40	10-20
	17-31	Extremely gravelly sandy clay loam, very gravelly sandy loam.	GP-GM, GM	A-1	0	0-5	20-40	10-25	5-20	5-15	10-20	NP-5
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
146*: Cushool-----	0-2	Fine sandy loam.	SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-85	30-50	20-30	NP-10
	2-16	Sandy clay loam.	SC	A-2, A-6	0	0	90-100	85-100	70-85	30-50	30-40	10-20
	16-32	Sandy loam, fine sandy loam.	SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-85	30-50	20-30	NP-10
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Diamondville-	0-8	Fine sandy loam.	SM, ML	A-4	0	0	100	95-100	75-90	40-55	15-25	NP-5
	8-20	Clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	75-90	60-75	25-40	5-15
	20-38	Loam, fine sandy loam.	SM, ML, SC-SM, CL-ML	A-4	0	0	100	75-100	65-90	35-55	15-30	NP-10
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
147*: Cutback-----	0-2	Gravelly sandy clay loam.	SC	A-6, A-2-6	0	0-10	70-85	60-75	50-65	30-45	30-35	10-15
	2-10	Sandy clay loam, loam, clay loam.	CL, SC	A-6	0	0-5	90-100	85-95	70-85	40-70	30-40	10-20
	10-20	Extremely gravelly sandy clay loam, very gravelly sandy loam.	GP-GM, GM, GM-GC	A-1, A-2-4	0	0-5	20-40	15-30	10-24	5-15	10-20	NP-10
	20-37	Extremely gravelly loamy sand, very gravelly loamy sand.	GP-GM	A-1	0	0-10	25-40	20-35	15-25	5-10	---	NP
	37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Pinelli-----	0-2	Loam-----	CL	A-6	0	0	100	95-100	75-85	65-75	30-35	10-15
	2-17	Clay, silty clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	70-90	40-55	15-30
	17-60	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	75-90	65-80	35-45	15-20
148*: Dahlquist----	0-2	Very gravelly sandy loam.	GM, SM	A-2, A-1	0-10	15-25	50-75	45-55	30-50	15-30	20-25	NP-5
	2-15	Very cobbly sandy clay loam.	GC	A-2	10-20	25-40	55-65	50-60	40-50	25-35	30-35	10-15
	15-20	Very gravelly sandy clay loam, extremely gravelly sandy clay loam.	GC	A-2	0-10	15-25	30-60	25-55	20-45	10-30	30-35	10-15
	20-60	Very gravelly sandy loam.	GM, GP-GM	A-1	0-10	15-20	40-50	35-45	25-35	10-20	20-25	NP-5
Rawlins-----	0-2	Sandy loam----	SM	A-2, A-4	0	0	95-100	90-100	65-75	30-50	<25	NP-5
	2-9	Sandy clay loam.	SC	A-2, A-6	0	0	95-100	90-100	80-90	30-50	30-40	10-20
	9-18	Very fine sandy loam.	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	90-100	80-90	40-60	<30	NP-10
	18-60	Fine sandy loam.	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	90-100	80-90	35-55	<30	NP-10
Browtine-----	0-10	Very cobbly sandy loam.	SM	A-2	0	40-50	80-90	70-80	50-60	25-35	<25	NP-5
	10-32	Very cobbly sandy loam.	SM	A-2	0	40-50	80-90	70-80	50-60	25-35	<25	NP-5
	32-60	Gravelly clay loam.	CL	A-6	0	0-5	75-85	65-75	60-70	50-60	30-35	10-15

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
149*: Dalecreek----	0-8	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	95-100	90-100	70-85	30-40	15-25	NP-10
	8-32	Loam, sandy clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-85	50-65	25-35	5-15
	32-60	Stratified sandy clay loam to loamy coarse sand.	CL	A-6	0	0	90-100	90-100	70-85	50-65	30-40	10-20
Kovich-----	0-8	Loam-----	CL-ML	A-4	0	0	80-100	75-100	65-90	50-70	25-30	5-10
	8-31	Loam, sandy clay loam, clay loam.	SC, CL	A-6	0	0	85-100	75-100	65-85	40-70	25-35	10-20
	31-60	Stratified gravelly sand to gravelly sandy clay loam.	SC	A-6, A-2	0	0	70-85	60-75	40-60	30-50	25-35	10-20
150*: Delphill-----	0-1	Loam-----	CL	A-6	0	0	95-100	95-100	85-95	60-70	30-35	10-15
	1-21	Clay loam, loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	21	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Blazon-----	0-2	Clay loam-----	CL	A-6	0	0	90-100	90-100	75-90	60-80	35-40	15-20
	2-11	Clay loam-----	CL	A-6	0	0	90-100	90-100	75-90	65-80	35-40	15-20
	11	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
151*: Diamondville-	0-6	Fine sandy loam.	SM, ML	A-4	0	0	100	95-100	75-90	40-55	15-25	NP-5
	6-18	Clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	75-90	60-75	25-40	5-15
	18-35	Loam, fine sandy loam.	SM, ML, SC-SM, CL-ML	A-4	0	0	100	75-100	65-90	35-55	15-30	NP-10
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cushool-----	0-3	Sandy loam-----	SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-85	30-50	20-30	NP-10
	3-15	Sandy clay loam.	SC	A-2, A-6	0	0	90-100	85-100	70-85	30-50	30-40	10-20
	15-28	Sandy loam, fine sandy loam.	SM, SC-SM	A-2, A-4	0	0	90-100	85-100	70-85	30-50	20-30	NP-10
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
152*: Diamonkit----	0-1	Sandy loam----	SC-SM	A-2, A-4	0	0	100	90-100	65-80	25-45	25-30	5-10
	1-11	Loam, sandy clay loam.	CL, SC	A-6	0	0	100	90-100	80-90	45-65	25-35	10-15
	11-33	Gypsiferous clay loam, gypsiferous loam.	---	---	---	---	---	---	---	---	---	---
	33	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Stylite-----	0-2	Sandy loam----	SM, SC-SM	A-4	0	0	100	100	85-90	35-45	15-25	NP-10
	2-14	Loam, clay loam.	CL	A-6	0	0	100	95-100	85-90	60-75	30-35	10-15
	14-31	Clay loam, loam.	CL	A-6	0	0	100	95-100	85-90	60-75	35-40	15-20
	31-60	Gypsiferous loam.	---	---	0	0	100	95-100	---	---	---	---
153----- Elkol	0-3	Clay loam----	CL	A-6, A-7	0	0	95-100	95-100	90-95	70-90	35-45	15-25
	3-34	Clay, silty clay, silty clay loam.	CL	A-7	0	0	95-100	95-100	90-100	70-90	40-50	20-25
	34-60	Silty clay loam, clay loam.	CL	A-6, A-7	0	0	95-100	95-100	90-95	70-90	35-45	15-25
154*: Elkol-----	0-2	Silty clay loam.	CL	A-6, A-7	0	0	95-100	95-100	90-95	70-90	35-45	15-25
	2-30	Clay, silty clay, silty clay loam.	CL	A-7	0	0	95-100	95-100	90-100	70-90	40-50	20-25
	30-60	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	85-90	40-55	35-40	15-20
Gerdrum Family-----	0-1	Loam-----	CL	A-6	0	0	100	100	85-90	60-70	30-35	10-15
	1-16	Clay loam, clay, silty clay loam.	CL	A-7	0	0	100	100	85-95	80-90	45-50	20-25
	16-60	Clay loam, clay, silty clay loam.	CL	A-7	0	0	100	100	85-95	80-90	40-50	20-25
155*: Elkol-----	0-5	Silty clay loam.	CL	A-6, A-7	0	0	95-100	95-100	90-95	70-90	35-45	15-25
	5-60	Clay, silty clay, silty clay loam.	CL	A-7	0	0	95-100	95-100	90-100	70-90	40-50	20-25
Gerdrum Family-----	0-2	Loam-----	CL	A-6	0	0	95-100	90-100	80-90	60-75	30-35	10-15
	2-21	Silty clay loam, silty clay.	CL	A-7	0	0	95-100	90-100	85-95	75-90	40-50	20-25
	21-60	Clay loam----	CL	A-6	0	0	95-100	90-100	70-85	60-75	35-40	15-20

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
156----- Evanston	0-4	Fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	95-100	80-90	40-50	15-25	NP-5
	4-14	Loam, sandy clay loam, clay loam.	CL	A-6	0	0	95-100	95-100	85-95	55-75	25-35	10-15
	14-60	Loam, clay loam.	CL	A-6	0	0	85-100	75-100	65-95	50-75	25-35	10-15
157*: Evanston-----	0-7	Loam-----	CL, CL-ML	A-4	0	0	95-100	95-100	85-90	65-75	25-35	5-10
	7-20	Loam, sandy clay loam, clay loam.	CL	A-6	0	0	95-100	95-100	85-95	55-75	25-35	10-15
	20-60	Loam, clay loam.	CL	A-6	0	0	85-100	75-100	65-95	50-75	25-35	10-15
Bonjea-----	0-5	Fine sandy loam.	SM, SC-SM	A-2, A-4	0	0	90-100	90-100	60-90	30-40	20-30	NP-10
	5-15	Sandy clay loam, gravelly sandy clay loam.	SC	A-6	0	0	70-90	65-85	50-75	35-50	30-35	10-15
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
158*: Fiveoh-----	0-6	Sandy loam-----	SM	A-2, A-4	0	0	75-100	75-100	60-80	30-40	<25	NP-5
	6-16	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	0	75-100	75-100	55-75	25-40	<25	NP-5
	16-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	0	75-100	75-100	60-80	30-40	<25	NP-5
Fiveoh, cobble substratum--	0-3	Sandy loam-----	SM	A-4	0	0	100	100	75-85	35-50	15-25	NP-5
	3-22	Fine sandy loam, sandy loam.	SM, SC-SM, CL-ML	A-4	0	0	90-100	85-100	70-85	35-55	15-30	NP-10
	22-31	Cobbly sandy loam.	SM, SC-SM	A-2, A-4	0	15-30	80-85	75-85	55-65	30-45	15-30	NP-10
	31-60	Very cobbly sandy loam.	GM, SM	A-2	0	45-50	60-70	55-65	40-50	25-35	15-25	NP-5
Ryan Park----	0-3	Fine sandy loam.	SM	A-4	0	0	100	100	85-90	35-50	<25	NP-5
	3-18	Fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	95-100	80-90	35-50	<25	NP-10
	18-60	Gravelly fine sandy loam, gravelly sandy loam.	SM	A-2, A-4	0	10-15	80-85	75-80	55-65	30-40	<25	NP-5

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
159*: Fiveoh, cobble substratum--	0-3	Fine sandy loam.	SM	A-4	0	0	100	100	75-85	35-50	15-25	NP-5
	3-18	Fine sandy loam, sandy loam.	SM, SC-SM, CL-ML	A-4	0	0	90-100	85-100	70-85	35-55	15-30	NP-10
	18-41	Fine sandy loam, gravelly fine sandy loam.	SM, SC-SM	A-4, A-2	0	0-10	70-100	65-85	50-70	30-50	15-30	NP-10
	41-60	Very cobbly sandy loam.	GM, SM	A-2	0	45-50	60-70	55-65	40-50	25-35	15-25	NP-5
Fiveoh-----	0-6	Sandy loam-----	SM	A-2, A-4	0	0	75-100	75-100	60-80	30-40	<25	NP-5
	6-16	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	0	75-100	75-100	55-75	25-40	<25	NP-5
	16-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	0	75-100	75-100	60-80	30-40	<25	NP-5
Urban land.												
160*: Fiveoh, cobble substratum--	0-3	Fine sandy loam.	SM	A-4	0	0	100	100	75-85	35-50	15-25	NP-5
	3-18	Fine sandy loam, sandy loam.	SM, SC-SM, CL-ML	A-4	0	0	90-100	85-100	70-85	35-55	15-30	NP-10
	18-41	Fine sandy loam, gravelly fine sandy loam.	SM, SC-SM	A-4, A-2	0	0-10	70-100	65-85	50-70	30-50	15-30	NP-10
	41-60	Very cobbly sandy loam.	GM, SM	A-2	0	45-50	60-70	55-65	40-50	25-35	15-25	NP-5
Joemre-----	0-4	Fine sandy loam.	ML, SM	A-4	0	0	95-100	90-100	70-90	40-55	---	NP
	4-18	Fine sandy loam, very fine sandy loam, loam.	CL-ML, ML, SM, SC-SM	A-4	0	0	95-100	90-100	70-90	40-65	<30	NP-10
	18-60	Fine sandy loam, very fine sandy loam, loam.	CL-ML, ML, SM, SC-SM	A-4	0	0	90-100	85-100	70-90	40-65	<30	NP-10

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
161----- Folavar	0-3	Very gravelly sandy loam.	GM	A-1	0	0-5	50-55	45-50	30-35	15-25	20-25	NP-5
	3-11	Very gravelly sandy loam.	GM, GM-GC	A-2, A-1	0	0-5	45-55	40-50	25-35	10-25	20-30	NP-10
	11-60	Very gravelly loamy sand, extremely gravelly loamy sand, extremely gravelly sand.	GP, GP-GM	A-1	0	0-5	25-35	20-30	11-18	0-7	0-0	NP
162*: Folavar-----	0-5	Very gravelly sandy loam.	GM	A-1	0	0-5	50-55	45-50	30-35	15-25	20-25	NP-5
	5-12	Gravelly sandy loam.	SM, SC-SM	A-2, A-1-B	0	0-5	65-75	55-70	40-50	15-35	20-30	NP-10
	12-60	Very gravelly loamy sand, extremely gravelly loamy sand, extremely gravelly sand.	GP, GP-GM	A-1	0	0-5	25-35	20-30	11-18	0-7	0-0	NP
Borollic Camborthids.												
163----- Forelle	0-2	Loam-----	CL, CL-ML	A-6, A-4	0	0	95-100	90-100	80-90	50-65	25-35	5-15
	2-22	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-20
	22-36	Loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-75	30-40	10-20
	36-60	Fine sandy loam, sandy loam.	SC-SM, SM	A-2, A-4	0	0	90-100	85-100	70-85	30-50	15-25	NP-10
164*: Forelle-----	0-5	Loam-----	CL, CL-ML	A-6, A-4	0	0	95-100	90-100	80-90	50-65	25-35	5-15
	5-24	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-20
	24-35	Loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-75	30-40	10-20
	35-60	Fine sandy loam, sandy loam.	SC-SM, SM	A-2, A-4	0	0	90-100	85-100	70-85	30-50	15-25	NP-10
Urban land.												
165*: Forelle-----	0-4	Fine sandy loam.	SC-SM, SM	A-4	0	0	95-100	90-100	70-80	35-50	15-25	NP-10
	4-15	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-20
	15-60	Loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-75	30-40	10-20

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
165*: Diamondville-	0-1	Fine sandy loam.	SM, ML	A-4	0	0	100	95-100	75-90	40-55	15-25	NP-5
	1-17	Clay loam, loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	75-90	60-75	25-40	5-15
	17-34	Loam, fine sandy loam.	SM, ML, SC-SM, CL-ML	A-4	0	0	100	75-100	65-90	35-55	15-30	NP-10
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
166*: Glendive-----	0-6	Loam-----	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	20-25	5-10
	6-60	Stratified sandy loam to loam.	ML, CL-ML, SM, SC-SM	A-4	0	0	100	100	75-85	45-65	15-25	NP-10
Redrob-----	0-9	Loam-----	CL	A-6	0	0	100	100	85-95	60-80	30-35	10-15
	9-19	Stratified loam to sandy loam.	ML, CL-ML	A-4	0	0	100	100	80-90	50-70	15-30	NP-10
	19-24	Very gravelly loam.	GC	A-2	0	0	40-55	35-50	30-40	20-35	30-35	10-15
	24-60	Extremely gravelly loamy sand.	GP, GP-GM	A-1	0	0	20-30	15-25	7-12	3-6	---	NP
Grenoble-----	0-9	Gravelly sandy loam.	SM	A-1, A-2	0	0	85-90	50-70	35-50	20-35	15-25	NP-5
	9-60	Very gravelly loamy sand, very gravelly sand.	SP-SM, GP, SM, GP-GM	A-1	0	0	50-65	35-50	25-35	0-20	---	NP
167*: Grenoble-----	0-9	Gravelly loamy sand.	SM	A-1	0	0	85-90	50-70	30-50	15-25	15-25	NP
	9-60	Very gravelly loamy sand, very gravelly sand.	SP-SM, SM, GP, GP-GM	A-1	0	0	50-65	35-50	25-35	0-20	---	NP
Gerrard-----	0-12	Loam-----	CL-ML	A-4	0	0	95-100	95-100	70-85	50-70	25-30	5-10
	12-24	Very gravelly loamy sand.	GP-GM, GM	A-1	0	0-15	30-55	25-50	15-35	5-15	---	NP
	24-60	Very gravelly sand.	GP, GP-GM	A-1	0	0-20	25-55	20-50	5-20	2-10	---	NP

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments: > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
168----- Greyback	0-9	Very cobbly sandy loam.	GM	A-1, A-2-4	0-10	30-45	60-85	50-75	35-50	15-30	15-25	NP-5
	9-16	Very cobbly sandy loam, very gravelly sandy loam.	GM	A-1	0-20	30-50	45-60	35-55	20-40	10-25	15-25	NP-5
	16-30	Very gravelly coarse sandy loam, very cobbly coarse sandy loam.	GM, GP-GM	A-1	0-5	25-55	45-60	35-60	15-30	10-20	---	NP
	30-60	Very gravelly loamy coarse sand, very cobbly coarse sandy loam, very gravelly coarse sandy loam.	GM, GP-GM	A-1	0-5	10-35	45-60	35-50	15-30	5-20	---	NP
169----- Gypla	0-5	Loam-----	CL-ML	A-4	0	0	95-100	90-100	85-100	75-85	25-30	5-10
	5-36	Gypsiferous silt loam.	---	---	---	---	---	---	---	---	---	---
	36-60	Gypsiferous gravelly silt loam.	---	---	---	---	---	---	---	---	---	---
170*: Gypla-----	0-5	Loam-----	CL-ML	A-4	0	0	95-100	90-100	85-100	75-85	25-30	5-10
	5-36	Gypsiferous silt loam.	---	---	---	---	---	---	---	---	---	---
	36-60	Gypsiferous gravelly silt loam.	---	---	---	---	---	---	---	---	---	---
Urban land.												
171*: Hanson-----	0-8	Gravelly sandy loam.	SM, SC-SM	A-2	0-5	0-15	75-85	65-75	45-55	25-35	15-25	NP-10
	8-25	Very cobbly loam, very gravelly loam, very cobbly clay loam.	GC	A-2, A-6	0-15	25-55	50-65	45-60	40-55	30-45	30-40	10-20
	25-60	Very cobbly clay loam.	GC	A-7	0-10	30-55	60-70	50-60	45-55	35-50	40-45	15-20
Quander-----	0-12	Gravelly loam	SC	A-6	0-5	10-15	75-80	65-75	50-65	35-50	30-35	10-15
	12-26	Very cobbly clay loam.	SC, CL	A-6	0-5	40-55	70-85	60-80	50-65	40-55	35-40	15-20
	26-60	Very cobbly clay loam, very cobbly sandy clay loam.	SC, GC	A-6	0-5	30-60	65-75	60-70	50-60	35-50	35-40	15-20

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
172*: Hapjack-----	0-3	Gravelly sandy loam.	SM	A-2	0	0	90-100	50-75	40-60	25-35	---	NP
	3-10	Gravelly sandy clay loam, gravelly sandy loam.	SC-SM, SC	A-4, A-2	0	0	90-100	50-75	35-50	25-45	25-30	5-10
	10-19	Extremely gravelly sandy loam, extremely gravelly loamy sand.	SP-SM	A-1	0	0	90-100	15-25	8-20	5-10	---	NP
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rogert-----	0-8	Gravelly sandy loam.	SM, SC-SM, GM, GM-GC	A-1, A-2	0	0-5	60-80	50-75	40-60	20-35	<25	NP-10
	8-16	Very gravelly sandy loam.	GP-GM, GM, GM-GC	A-1, A-2	0	0-5	35-55	25-40	15-25	10-15	<25	NP-10
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Amesmont-----	0-5	Fine sandy loam.	SM	A-2-4	0	0	100	90-100	60-80	25-35	20-25	NP-5
	5-14	Sandy clay loam.	SC	A-6	0	0	100	75-85	55-70	40-50	30-40	10-20
	14-20	Gravelly sandy clay loam.	SC	A-6, A-2-6	0	0	100	55-75	45-60	25-45	30-40	10-15
	20-33	Very gravelly sandy clay loam.	SC	A-2-6	0	0	100	25-50	20-30	10-25	30-40	10-15
	33	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
173*: Ipson-----	0-8	Gravelly sandy loam.	SM, SC-SM	A-2, A-4	0	0	70-85	60-75	40-55	25-40	<25	NP-10
	8-14	Very gravelly sandy clay loam.	GC	A-2	0	0	35-55	30-50	25-45	15-30	30-35	10-15
	14-60	Very gravelly coarse sandy loam.	GM	A-1	0	0	40-60	30-50	20-30	15-20	<25	NP-5
Evanston-----	0-3	Fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	95-100	80-90	40-50	15-25	NP-5
	3-17	Loam, sandy clay loam, clay loam.	CL	A-6	0	0	95-100	95-100	85-95	55-75	25-35	10-15
	17-60	Loam, clay loam.	CL	A-6	0	0	85-100	75-100	65-95	50-75	25-35	10-15

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
174----- Joemre	0-2	Fine sandy loam.	ML, SM	A-4	0	0	95-100	90-100	70-90	40-55	---	NP
	2-13	Fine sandy loam, very fine sandy loam, loam.	CL-ML, ML, SM, SC-SM	A-4	0	0	95-100	90-100	70-90	40-65	<30	NP-10
	13-60	Fine sandy loam, very fine sandy loam, loam.	CL-ML, ML, SM, SC-SM	A-4	0	0	90-100	85-100	70-90	40-65	<30	NP-10
175----- Joemre	0-2	Fine sandy loam.	ML, SM	A-4	0	0	95-100	90-100	70-90	40-55	---	NP
	2-16	Fine sandy loam, very fine sandy loam, loam.	CL-ML, ML, SM, SC-SM	A-4	0	0	95-100	90-100	70-90	40-65	<30	NP-10
	16-60	Fine sandy loam, very fine sandy loam, loam.	CL-ML, ML, SM, SC-SM	A-4	0	0	90-100	85-100	70-90	40-65	<30	NP-10
176*: Kezar-----	0-10	Sandy loam----	SM	A-4, A-2	0	0	100	100	70-80	30-50	<25	NP-5
	10-20	Sandy clay loam.	SC, CL	A-6	0	0-10	90-100	85-100	75-90	40-55	30-40	10-15
	20-31	Very cobbly sandy clay loam.	SC, GC	A-6, A-2	0	30-35	60-75	55-70	50-65	30-40	30-40	10-15
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Carbol-----	0-4	Sandy loam----	SM	A-2-4, A-4	0	0-15	100	85-100	65-75	30-50	15-25	NP-5
	4-13	Cobbly sandy clay loam.	SC	A-6	0	15-30	85-95	75-90	65-75	35-50	30-35	10-15
	13-19	Very cobbly sandy clay loam, extremely cobbly sandy clay loam.	GC, SC	A-6, A-2-6	0-30	40-75	60-70	55-65	45-55	25-40	30-35	10-15
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
177*: Kildor-----	0-10	Gravelly loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0-5	75-85	65-80	60-65	40-55	25-35	5-15
	10-22	Clay loam, clay.	CH	A-7	0	0	100	95-100	85-95	65-85	50-60	30-40
	22-38	Clay, clay loam.	CH	A-7	0	0	100	95-100	85-95	65-85	50-60	30-40
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
178*: Kiltabar-----	0-1	Silty clay loam.	CL	A-6	0	0	95-100	90-100	85-95	75-90	35-40	15-20
	1-40	Clay loam, silty clay loam, loam.	---	---	0	0	90-100	85-100	75-95	60-85	---	---
	40-60	Clay loam, silty clay loam.	CL	A-6	0	0	90-100	85-100	75-95	65-85	30-40	10-20
Tismid-----	0-4	Sandy loam	SM, SC-SM	A-4	0	0	100	100	75-80	35-50	<25	NP-10
	4-7	Sandy clay loam, clay loam.	SC, CL	A-6	0	0	100	100	85-90	45-65	30-40	10-20
	7-20	Sandy clay loam, clay loam.	SC, CL	A-6	0	0	100	100	85-90	45-65	30-40	10-20
	20-60	Sandy clay loam, loam.	SC, CL	A-6	0	0	90-100	85-100	75-90	40-60	30-35	10-15
179*: Lakehelen----	0-17	Fine sandy loam.	SM	A-4	0	0	90-100	85-100	70-80	35-50	<25	NP-5
	17-26	Very gravelly sandy clay loam.	GC	A-2	0	0	45-55	40-50	30-40	20-35	30-40	10-20
	26-38	Extremely gravelly sandy loam.	GP-GM, GM	A-1	0	0	25-30	20-25	14-17	5-15	<20	NP-5
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Redfeather---	0-14	Gravelly sandy loam.	SM	A-2, A-1-B	0	0	75-85	65-75	45-55	20-35	15-25	NP-5
	14-19	Very gravelly sandy clay loam.	GC, GP-GC	A-2	0	0	45-55	25-45	15-30	10-25	30-35	10-15
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Amesmont-----	0-5	Fine sandy loam.	SM	A-2	0	0	100	90-100	60-80	25-35	20-25	NP-5
	5-13	Gravelly sandy clay loam.	SC	A-6	0	0	80-90	50-75	40-60	35-45	30-40	10-15
	13-21	Very gravelly loamy sand, very gravelly sandy loam.	SP-SM, SM, GP-GM, GM	A-1	0	0	50-75	25-50	20-30	5-20	0-0	NP
	21	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
180----- Leavitt	0-6	Gravelly fine sandy loam.	SM, SC-SM	A-2, A-4	0	0	75-85	65-75	55-65	30-40	20-25	NP-5
	6-15	Gravelly loam	SC, CL	A-6	0	0	75-85	65-75	60-65	40-60	30-35	10-15
	15-22	Very gravelly clay loam.	GC	A-2-7, A-7	0	0	45-55	40-50	35-45	30-45	40-45	15-20
	22-60	Very gravelly coarse sandy loam.	GM	A-1	0	0	40-50	35-45	20-30	10-20	---	NP

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
181*: Leavitt-----	0-4	Gravelly loam	SM	A-4	0	0	70-80	65-75	55-65	40-50	15-25	NP-5
	4-17	Gravelly clay loam.	CL	A-6, A-7	0	0	70-80	65-75	55-65	50-60	35-45	15-20
	17-26	Very gravelly clay loam.	GC	A-2-7, A-7	0	0	45-55	40-50	35-45	30-40	40-45	15-20
	26-60	Clay-----	CH	A-7	0	0	100	100	85-95	70-80	55-65	30-40
Granite-----	0-4	Gravelly sandy loam.	SM	A-2, A-1	0-5	5-15	75-85	65-75	45-55	20-35	15-25	NP-5
	4-60	Very gravelly sandy clay loam, very gravelly clay loam, very cobbly clay loam.	GC	A-2	0-5	5-30	40-50	30-50	25-40	15-35	35-40	15-20
182*: Leavitt-----	0-10	Loam-----	CL, CL-ML	A-4	0	0	100	95-100	85-95	55-70	25-30	5-10
	10-26	Clay loam, sandy clay loam.	CL	A-6	0	0	100	95-100	85-95	50-75	30-35	10-15
	26-60	Sandy clay loam, loam, clay loam.	CL, SC	A-6	0	0	95-100	95-100	80-90	45-65	30-35	10-15
Hanson-----	0-8	Gravelly sandy loam.	SM, SC-SM	A-2	0-5	0-15	75-85	65-75	45-55	25-35	15-25	NP-10
	8-60	Very cobbly loam, very gravelly loam, very cobbly clay loam.	GC	A-2, A-6	0-15	25-55	50-65	45-60	40-55	30-45	30-40	10-20
183*: Leavitt-----	0-5	Loam-----	CL, CL-ML	A-4	0	0	100	95-100	85-95	55-70	25-30	5-10
	5-20	Clay loam, sandy clay loam.	CL	A-6	0	0	100	95-100	85-95	50-75	30-35	10-15
	20-60	Sandy clay loam, loam, clay loam.	CL, SC	A-6	0	0	95-100	95-100	80-90	45-65	30-35	10-15
Quander-----	0-10	Gravelly loam	SC	A-6	0-5	10-15	75-80	65-75	50-65	35-50	30-35	10-15
	10-30	Very cobbly clay loam.	SC, CL	A-6	0-5	40-55	70-85	60-80	50-65	40-55	35-40	15-20
	30-45	Very gravelly clay loam.	GC	A-6, A-2	0-5	10-20	55-60	50-55	40-50	30-40	35-40	15-20
	45-60	Very cobbly clay loam, very cobbly sandy clay loam.	SC, GC	A-6	0-5	30-60	65-75	60-70	50-60	35-50	35-40	15-20
184----- Luhon	0-8	Loam-----	CL-ML, CL	A-6, A-4	0	0	100	100	85-90	60-80	25-35	5-15
	8-60	Silt loam, clay loam.	CL	A-6	0	0	100	100	95-100	75-85	30-35	10-15

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
185*: Luvar-----	0-2	Loam-----	CL-ML	A-4	0	0	85-100	80-100	70-85	50-65	25-30	5-10
	2-12	Loam, clay loam.	CL	A-6	0	0	100	100	85-90	60-75	30-40	10-20
	12-32	Clay loam, loam.	CL	A-6	0	0	100	100	85-90	60-75	30-40	10-20
	32-60	Gypsiferous loam, gypsiferous clay loam.	---	---	0	0	95-100	85-100	---	---	---	---
Stylite-----	0-2	Fine sandy loam.	SM, SC-SM	A-4	0	0	100	100	80-90	40-50	15-25	NP-10
	2-14	Loam, clay loam.	CL	A-6	0	0	100	95-100	85-90	60-75	30-35	10-15
	14-30	Clay loam, loam.	CL	A-6	0	0	100	95-100	85-90	60-75	35-40	15-20
	30-60	Gypsiferous loam, gypsiferous clay loam.	---	---	0	0	100	95-100	---	---	---	---
Diamonkit----	0-1	Sandy loam----	SC-SM	A-2, A-4	0	0	100	90-100	65-80	25-45	25-30	5-10
	1-22	Loam, sandy clay loam.	CL, SC	A-6	0	0	100	90-100	80-90	45-65	25-35	10-15
	22-35	Gypsiferous clay loam.	---	---	---	---	---	---	---	---	---	---
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
186*: Lymanson loam	0-7	Loam-----	CL	A-6	0	0-5	100	90-100	80-90	50-70	25-35	10-15
	7-16	Clay loam-----	CL	A-6, A-7	0	0	100	90-100	75-90	65-75	35-45	15-20
	16-35	Clay loam, loam.	CL	A-6	0	0	100	90-100	80-90	60-75	30-35	10-15
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Lymanson cobble loam-	0-7	Cobbly loam---	CL, SC-SM, SC, CL-ML	A-4, A-6	0	20-35	90-100	85-95	75-85	45-65	25-35	5-15
	7-17	Clay loam-----	CL	A-6, A-7	0	0	100	90-100	75-90	65-75	35-45	15-20
	17-31	Clay loam, loam.	CL	A-6	0	0	100	90-100	80-90	60-75	30-35	10-15
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
187----- Manada	0-2	Sandy loam----	SM	A-2, A-4	0	0	100	85-90	65-70	25-40	15-25	NP-5
	2-9	Loam, sandy loam.	SM, SC-SM, ML, CL-ML	A-4	0	0	100	85-90	70-80	40-55	20-30	NP-10
	9-27	Gravelly sandy loam, sandy loam.	SM	A-2, A-4	0	0	80-95	70-85	55-65	25-50	15-25	NP-5
	27-35	Gravelly loam, gravelly sandy loam.	SM, SC-SM	A-4	0	0	80-95	65-75	55-65	35-50	15-30	NP-10
	35-60	Gravelly sandy loam.	SM	A-2, A-4	0	0	80-95	65-75	50-60	25-40	15-25	NP-5

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
188----- McFadden	0-5	Gravelly fine sandy loam.	SM	A-2, A-4	0	0	70-80	65-75	50-65	25-40	15-25	NP-5
	5-18	Gravelly fine sandy loam, gravelly loam.	SM	A-2, A-1	0	0	55-70	50-65	35-55	20-35	15-25	NP-5
	18-60	Loam, gravelly sandy loam.	SM, ML	A-4, A-2-4	0	0	55-90	50-85	40-70	25-55	15-25	NP-5
189*: Miracle-----	0-4	Fine sandy loam.	SM	A-2, A-4	0	0	90-100	85-100	65-85	25-45	<25	NP-5
	4-28	Sandy clay loam.	SC-SM	A-2, A-4	0	0	90-100	85-100	75-80	30-50	25-30	5-10
	28-33 33	Sandy loam----- Unweathered bedrock.	SM ---	A-2, A-4 ---	0 ---	0 ---	90-100 ---	85-100 ---	60-80 ---	25-45 ---	<25 ---	NP-5 ---
Cheadle-----	0-4	Fine sandy loam.	SM, SC-SM	A-4	0	5-20	90-100	85-95	65-75	35-50	15-25	NP-5
	4-9	Channery fine sandy loam.	SM, SC-SM	A-2	0	0-5	75-85	65-75	55-65	25-35	15-25	NP-5
	9-16	Very channery fine sandy loam, very cobbly sandy loam.	SM, GM	A-2, A-1-B	0-5	15-35	55-75	50-70	40-55	20-35	15-25	NP-5
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
190*: Moyerson-----	0-4	Silty clay loam.	CL, CH	A-7	0	0-5	95-100	95-100	85-95	80-90	45-55	20-30
	4-17	Silty clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	80-90	45-60	20-35
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Kemmerer-----	0-2	Clay loam-----	CL	A-7	0	0	95-100	90-100	85-95	60-75	45-50	25-30
	2-15	Clay loam, silty clay loam, silty clay.	CH	A-7	0	0	100	100	90-95	75-95	50-55	30-35
	15-34	Silty clay loam, silty clay, clay loam.	CH	A-7	0	0	95-100	90-100	85-100	75-95	50-60	30-35
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
191*: Nathale-----	0-4	Gravelly fine sandy loam.	GM, SM	A-2, A-1	0	0-5	50-75	50-75	40-60	20-30	---	NP
	4-11	Very cobbly very fine sandy loam, very cobbly loam, very cobbly sandy clay loam.	SC-SM, SC	A-4, A-2-4	0-5	40-60	60-80	55-75	40-60	30-50	25-30	5-10
	11-24	Very cobbly very fine sandy loam, very cobbly fine sandy loam.	SM	A-4, A-2-4, A-1	0-10	40-65	60-80	50-75	40-55	20-40	<30	NP-5
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Passcreek, cobbly subsoil-----	0-7	Very fine sandy loam.	ML, CL-ML, SM, SC-SM	A-4	0-5	0-5	95-100	95-100	85-95	45-60	15-30	NP-10
	7-16	Sandy clay loam.	SC, CL	A-6	0-5	5-10	90-95	90-95	80-95	35-55	30-40	10-20
	16-31	Very cobbly fine sandy loam.	SM, SC-SM	A-2, A-1-B	0-5	50-65	60-80	50-70	40-60	20-35	15-30	NP-10
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
192----- Pahlow	0-3	Gravelly sandy loam.	SM	A-2, A-4	0	0-10	80-90	75-85	55-65	30-45	15-25	NP-5
	3-15	Very gravelly sandy loam.	SM, GM	A-1	0	10-20	50-65	45-55	35-45	15-25	15-25	NP-5
	15-60	Extremely gravelly loamy sand, very gravelly loamy sand.	SM, SP, SP-SM	A-1	0	10-35	60-80	25-35	20-25	0-15	---	NP

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
193*: Pilotpeak----	0-4	Cobbly very fine sandy loam.	SM, ML	A-4	0-5	15-30	80-100	75-90	60-80	40-55	15-25	NP-5
	4-14	Very cobbly very fine sandy loam, very cobbly fine sandy loam.	SM, GM	A-4, A-2-4	0-5	30-45	65-75	60-70	50-60	30-45	15-25	NP-5
	14-18	Extremely cobbly very fine sandy loam, extremely cobbly fine sandy loam.	SM, GM	A-4, A-2-4	0-5	50-70	55-70	50-65	35-55	25-40	15-25	NP-5
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Canwall-----	0-3	Fine sandy loam.	SM	A-2	0	0-5	80-95	75-90	60-80	25-35	15-20	NP-5
	3-12	Very fine sandy loam, fine sandy loam.	SM, ML	A-4	0	0-10	80-90	75-90	65-75	45-55	15-25	NP-5
	12-24	Very cobbly very fine sandy loam, very cobbly fine sandy loam.	SM	A-4, A-2-4	0-25	40-60	65-75	55-70	45-60	25-40	15-25	NP-5
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
194----- Pinelli	0-6	Clay loam-----	CL	A-6, A-7	0	0	100	95-100	75-90	70-85	35-45	15-25
	6-28	Clay, silty clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	70-90	40-55	15-30
	28-60	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	75-90	65-80	35-45	15-20
195*. Pits, mine												
196*: Poin-----	0-6	Very cobbly sandy loam.	SM	A-2, A-4	0	45-55	85-95	70-80	50-65	20-40	15-25	NP-5
	6-15	Very channery sandy loam.	GP-GM, GM	A-1	0	45-55	40-55	35-50	20-35	10-20	15-25	NP-5
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
196*: Bowen-----	0-8	Gravelly sandy loam.	SM	A-2	0-5	0-10	70-80	65-75	45-50	25-35	15-25	NP-5
	8-22	Very gravelly sandy loam, very gravelly sandy clay loam.	SC, SC-SM, GC, GM-GC	A-2, A-1-B	0-5	10-20	45-65	35-55	25-45	15-30	25-35	5-15
	22-31	Very gravelly sandy loam, very cobbly sandy loam.	SM, GM	A-1	0-5	20-55	45-65	35-55	25-45	10-25	15-25	NP-5
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
197*: Poposhia-----	0-2	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	80-90	35-50	15-25	NP-5
	2-60	Loam, clay loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-70	25-35	10-20
	0-2	Loam-----	CL	A-6	0	0	90-100	90-100	70-90	60-75	30-35	10-15
Blazon-----	2-12	Clay loam-----	CL	A-6	0	0	90-100	90-100	75-90	65-80	35-40	15-20
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
198*: Poposhia-----	0-2	Loam-----	CL-ML	A-4	0	0	95-100	90-100	80-90	55-75	25-30	5-10
	2-60	Loam, clay loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-70	25-35	10-20
	0-2	Fine sandy loam.	SC-SM, SM	A-4	0	0	95-100	90-100	70-80	35-50	15-25	NP-10
Forelle-----	2-17	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-20
	17-60	Loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-75	30-40	10-20
199*: Poposhia-----	0-5	Loam-----	CL-ML	A-4	0	0	95-100	90-100	80-90	55-75	25-30	5-10
	5-60	Loam, clay loam, sandy clay loam.	CL	A-6	0	0	95-100	90-100	80-90	50-70	25-35	10-20
	0-3	Clay loam-----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
Chaperton----	3-13	Clay loam-----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
	13-25	Clay loam-----	CL	A-6	0	0	95-100	90-100	80-90	55-75	35-40	15-20
	25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
200*: Rainbolt-----	0-2	Gravelly sandy loam.	SC-SM	A-2	0	0	90-100	65-70	45-60	25-35	20-25	5-10
	2-16	Gravelly sandy clay loam, sandy clay loam.	SC	A-2, A-6	0	0	80-100	60-90	40-65	30-50	30-35	10-15
	16-28	Sandy clay loam.	SC, CL	A-6	0	0	100	85-100	70-80	40-60	30-35	10-15
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Morset-----	0-2	Gravelly sandy loam.	SC-SM	A-2, A-1-B	0	0	60-80	55-75	35-55	15-35	20-30	5-10
	2-13	Gravelly sandy clay loam.	GC, SC	A-2, A-6	0	0	55-80	50-75	35-55	20-45	30-40	10-20
	13-60	Gravelly sandy clay loam, gravelly sandy loam.	GC, SC, SC-SM, GM-GC	A-2, A-1-B	0	0	55-80	50-75	35-55	20-35	25-35	5-15
201*: Redfeather---	0-14	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0-5	85-95	75-85	60-75	25-40	15-30	NP-10
	14-19	Very gravelly sandy clay loam.	GC, GP-GC	A-2	0	0	45-55	25-45	15-30	10-25	30-35	10-15
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Lakehelen----	0-18	Fine sandy loam.	SM	A-4	0	0	90-100	85-100	70-80	35-50	<25	NP-5
	18-38	Very gravelly sandy clay loam.	GC	A-2	0	0	45-55	40-50	30-40	20-35	30-40	10-20
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rogert-----	0-4	Gravelly sandy loam.	SM, SC-SM, GM, GM-GC	A-1, A-2	0	0-5	60-80	50-75	40-60	20-35	<25	NP-10
	4-18	Very gravelly sandy loam.	GP-GM, GM, GM-GC	A-1, A-2	0	0-5	35-55	25-40	15-25	10-15	<25	NP-10
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
202----- Redrob	0-23	Loam-----	CL-ML	A-4	0	0	95-100	95-100	85-95	50-70	25-30	5-10
	23-33	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	45-65	30-40	10-15
	33-60	Very gravelly sand, very gravelly loamy sand.	SP, GP, SP-SM, GP-GM	A-1	0	0-20	40-55	35-50	20-40	2-15	---	NP

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
203*: Redrob, frequently flooded-----	0-14	Loam-----	CL-ML	A-4	0	0	95-100	95-100	70-85	50-70	25-30	5-10
	14-23	Stratified fine sandy loam to silt loam.	CL-ML, SC-SM, CL, SC	A-4, A-6	0	0	95-100	95-100	65-80	40-60	25-35	5-15
	23-60	Very gravelly sand, very gravelly loamy sand.	GM, GP-GM	A-1	0	0-20	40-55	35-50	20-35	5-15	---	NP
Grenoble-----	0-5	Gravelly sandy loam.	SM	A-1, A-2	0	0	85-90	50-70	35-50	20-35	15-25	NP-5
	5-60	Very gravelly loamy sand, very gravelly sand.	SP-SM, GP, SM, GP-GM	A-1	0	0	50-65	35-50	25-35	0-20	---	NP
Redrob-----	0-5	Very fine sandy loam.	SC-SM, CL-ML	A-4	0	0	95-100	90-100	85-95	40-55	20-25	5-10
	5-21	Loam-----	CL-ML	A-4	0	0	95-100	90-100	85-95	60-85	25-30	5-10
	21-38	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	45-65	30-40	10-15
	38-60	Very gravelly sand, very gravelly loamy sand.	SP, GP, SP-SM, GP-GM	A-1	0	0-20	40-55	35-50	20-40	2-15	---	NP
204*: Redrob, frequently flooded-----	0-23	Loam-----	CL-ML	A-4	0	0	95-100	95-100	70-85	50-70	25-30	5-10
	23-35	Sandy clay loam, loam.	CL	A-6	0	0	95-100	90-100	75-85	60-80	30-35	10-15
	35-60	Very gravelly sand, very gravelly loamy sand.	GM, GP-GM	A-1	0	0-20	40-55	35-50	20-35	5-15	---	NP
Redrob-----	0-18	Loam-----	CL-ML	A-4	0	0	95-100	95-100	85-95	50-70	25-30	5-10
	18-25	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	45-65	30-40	10-15
	25-60	Very gravelly sand, very gravelly loamy sand.	SP, GP, SP-SM, GP-GM	A-1	0	0-20	40-55	35-50	20-40	2-15	---	NP

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
205*: Redrob, frequently flooded-----	0-14	Loam-----	CL-ML	A-4	0	0	95-100	95-100	70-85	50-70	25-30	5-10
	14-23	Stratified fine sandy loam to silt loam.	CL-ML, SC-SM, CL, SC	A-4, A-6	0	0	95-100	95-100	65-80	40-60	25-35	5-15
	23-60	Very gravelly sand, very gravelly loamy sand.	GM, GP-GM	A-1	0	0-20	40-55	35-50	20-35	5-15	---	NP
Redrob-----	0-5	Very fine sandy loam.	SC-SM, CL-ML	A-4	0	0	95-100	90-100	85-95	40-55	20-25	5-10
	5-20	Loam-----	CL-ML	A-4	0	0	95-100	90-100	85-95	60-85	25-30	5-10
	20-38	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	45-65	30-40	10-15
	38-60	Very gravelly sand, very gravelly loamy sand.	SP, GP, SP-SM, GP-GM	A-1	0	0-20	40-55	35-50	20-40	2-15	---	NP
Urban land.												
206*: Rentsac-----	0-3	Channery sandy loam.	SM	A-2	0	5-15	90-95	70-85	55-65	25-35	<25	NP-5
	3-6	Very channery sandy loam, very channery loam.	GM-GC	A-2, A-1	0	5-15	40-55	35-50	25-40	10-30	25-30	5-10
	6-14	Extremely channery sandy loam, extremely channery loam.	GM-GC	A-2, A-1	0-15	30-45	25-40	20-35	15-30	10-25	25-30	5-10
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Wycolo-----	0-7	Sandy loam----	SM, SC-SM	A-4	0	0	90-100	85-100	70-80	35-50	15-25	NP-5
	7-16	Sandy clay loam.	CL, SC	A-6	0	0	90-100	85-100	75-90	35-55	30-40	10-20
	16-23	Sandy loam, sandy clay loam.	SC-SM, SC	A-4	0	0	85-95	75-90	65-75	35-50	25-30	5-10
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
207*: Renvers-----	0-1	Very stony loam.	SM, SC-SM, GM, GM-GC	A-4	25-50	10-20	65-85	60-80	50-75	40-50	<30	NP-10
	1-4	Very stony fine sandy loam.	SM, SC-SM, GM, GM-GC	A-2, A-4	25-50	10-20	65-85	60-85	50-75	25-40	<30	NP-10
	4	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
207*: Chalkhill----	0-2	Sandy loam----	SC-SM, SM	A-4, A-2	0	0	100	85-100	65-75	25-45	<25	NP-5
	2-11	Sandy clay loam, clay loam.	SC, CL	A-6	0	0-10	90-100	85-100	85-90	45-65	30-40	10-20
	11-14	Extremely channery sandy clay loam, extremely channery clay loam.	GC	A-2-6	0-5	40-60	25-45	20-40	17-35	10-30	30-40	10-20
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
208*: Rimton-----	0-4	Very fine sandy loam.	ML, CL-ML	A-4	0	0-5	90-100	80-95	70-90	50-65	20-30	NP-10
	4-15	Fine sandy loam.	SC-SM	A-2, A-4	0	0-5	90-100	80-95	70-85	25-50	20-25	5-10
	15-32	Sandy clay loam, cobbly sandy clay loam.	SC	A-6	0	10-30	85-95	80-90	70-90	35-50	30-40	10-20
	32-39	Very cobbly fine sandy loam, very cobbly sandy clay loam.	SC-SM, SC	A-4, A-6, A-2-4, A-2-6	0-10	30-55	70-80	60-70	50-60	30-40	25-35	5-15
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Passcreek, cobbly subsoil-----	0-7	Fine sandy loam.	ML, CL-ML, SM, SC-SM	A-4	0-5	0-10	95-100	95-100	85-95	40-55	15-30	NP-10
	7-17	Cobbly fine sandy loam, cobbly sandy clay loam.	SC-SM, SC	A-2-4, A-2-6, A-4, A-6	0-5	20-40	75-85	70-80	55-65	30-50	25-35	5-15
	17-26	Very cobbly fine sandy loam.	SM, SC-SM	A-2, A-1-B	0-5	50-65	60-80	50-70	40-60	20-35	15-30	NP-10
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Miracle-----	0-6	Fine sandy loam.	SM	A-2, A-4	0	0	90-100	85-100	65-85	25-45	<25	NP-5
	6-31	Sandy clay loam.	SC-SM	A-2, A-4	0	0	90-100	85-100	75-80	30-50	25-30	5-10
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
209*. Riverwash												
210*: Rock outcrop.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
210*: Bonjea-----	0-3	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	90-100	90-100	60-90	30-40	20-30	NP-10
	3-13	Sandy clay loam, gravelly sandy clay loam.	SC	A-6	0	0	70-90	65-85	50-75	35-50	30-35	10-15
	13-17	Gravelly sandy clay loam, very gravelly sandy clay loam.	SC	A-2	0	0	75-90	35-75	25-45	15-35	30-35	10-15
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
211*: Rock outcrop.												
Bruja-----	0-2	Very cobbly fine sandy loam.	SM, SC-SM, GM-GC	A-2	0	25-40	55-75	50-70	45-65	25-35	20-25	NP-5
	2-23	Very cobbly very fine sandy loam, very cobbly fine sandy loam.	SM, SC-SM, GM-GC	A-2	0-15	30-40	55-70	45-60	40-50	25-35	20-25	NP-5
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Byrnie-----	0-2	Gravelly fine sandy loam.	SC-SM, GC, SC, GM-GC	A-2, A-4	0	0-5	60-80	55-75	45-60	25-45	20-25	5-10
	2-12	Gravelly sandy loam, gravelly fine sandy loam.	SM, GM	A-2, A-1, A-4	0	0-10	55-80	50-75	40-60	20-40	15-25	NP-5
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
212*: Rock outcrop.												
Cathedral----	0-2	Very stony coarse sandy loam.	GM, GM-GC	A-1	40-50	0-15	50-60	35-45	25-30	10-25	15-25	NP-5
	2-13	Very gravelly coarse sandy loam, very gravelly sandy loam.	GM, GM-GC	A-1	0-10	0-20	45-60	30-50	20-35	10-25	15-25	NP-5
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
213*: Rock outcrop.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
213*: Cathedral----	0-2	Very gravelly sandy loam.	GM, GM-GC	A-1	0-10	0-20	45-60	30-50	25-35	10-25	15-25	NP-5
	2-10	Very gravelly coarse sandy loam, very gravelly sandy loam.	GM, GM-GC	A-1	0-10	0-20	45-60	30-50	20-35	10-25	15-25	NP-5
	10	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Alderon-----	0-2	Sandy loam----	SM, SC-SM	A-2, A-4	0	0	100	85-90	55-65	20-40	15-30	NP-10
	2-7	Sandy clay loam.	SC	A-6, A-2	0	0	100	85-90	45-60	30-50	30-35	10-15
	7-26	Gravelly sandy clay loam.	SC	A-2	0	0	70-80	50-65	30-40	20-35	30-35	10-15
	26-39	Very gravelly coarse sandy loam, very gravelly sandy loam.	GM, SM, GP-GM, SP-SM	A-1	0	0	50-60	35-50	20-35	10-20	15-25	NP-5
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
214*: Rock outcrop.												
Pilotpeak----	0-4	Cobbly fine sandy loam.	SM	A-2, A-4	0-5	15-30	80-100	75-90	60-80	30-50	15-25	NP-5
	4-11	Very cobbly very fine sandy loam, very cobbly fine sandy loam.	SM, GM	A-4, A-2-4	0-5	30-45	65-75	60-70	50-60	30-45	15-25	NP-5
	11	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
215*: Rock outcrop.												
Rogert-----	0-4	Gravelly fine sandy loam.	SM, SC-SM, GM, GM-GC	A-1, A-2	0	0-5	60-80	50-75	40-60	20-35	<25	NP-10
	4-11	Very gravelly sandy loam.	GP-GM, GM, GM-GC	A-1, A-2	0	0-5	35-55	25-40	15-25	10-15	<25	NP-10
	11	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
216----- Rock River	0-3	Sandy loam----	SC-SM	A-2, A-4	0	0	95-100	95-100	65-80	30-50	25-30	5-10
	3-17	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	75-90	40-60	30-40	10-20
	17-60	Fine sandy loam, sandy loam.	SM, SC-SM	A-4	0	0-5	95-100	95-100	75-85	35-50	20-30	NP-10

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
217----- Rock River	0-3	Loam-----	CL	A-6	0	0	95-100	95-100	75-90	50-70	25-30	10-15
	3-21	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	75-90	40-60	30-40	10-20
	21-60	Fine sandy loam, sandy loam.	SM, SC-SM	A-4	0	0-5	95-100	95-100	75-85	35-50	20-30	NP-10
218*: Rock River---	0-3	Sandy loam----	SC-SM	A-2, A-4	0	0	95-100	95-100	65-80	30-50	25-30	5-10
	3-17	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	75-90	40-60	30-40	10-20
	17-60	Fine sandy loam, sandy loam.	SM, SC-SM	A-4	0	0-5	95-100	95-100	75-85	35-50	20-30	NP-10
Urban land.												
219*: Rogert-----	0-3	Gravelly sandy loam.	SM, SC-SM, GM, GM-GC	A-1, A-2	0	0-5	60-80	50-75	40-60	20-35	<25	NP-10
	3-16	Very gravelly sandy loam.	GP-GM, GM, GM-GC	A-1, A-2	0	0-5	35-55	25-40	15-25	10-15	<25	NP-10
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Lakehelen----	0-15	Sandy loam----	SM	A-2, A-4	0	0	90-100	85-100	65-75	30-45	<25	NP-5
	15-27	Very gravelly sandy clay loam.	GC	A-2	0	0	45-55	40-50	30-40	20-35	30-40	10-20
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
220*: Rogert-----	0-4	Gravelly sandy loam.	SM, SC-SM, GM, GM-GC	A-1, A-2	0	0-5	60-80	50-75	40-60	20-35	<25	NP-10
	4-14	Very gravelly sandy loam.	GP-GM, GM, GM-GC	A-1, A-2	0	0-5	35-55	25-40	15-25	10-15	<25	NP-10
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
Amesmont-----	0-4	Sandy loam----	SM	A-2	0	0	100	90-100	60-80	25-35	20-25	NP-5
	4-18	Gravelly sandy clay loam.	SC	A-6	0	0	80-90	50-75	40-60	35-45	30-40	10-15
	18-36	Very gravelly loamy sand, very gravelly sandy loam.	SP-SM, SM, GP-GM, GM	A-1	0	0	50-75	25-50	20-30	5-20	0-0	NP
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
221----- Rohonda	0-3	Fine sandy loam.	SM	A-2, A-4	0	0	95-100	90-100	70-80	30-40	---	NP
	3-15	Sandy loam, fine sandy loam, very fine sandy loam.	SC-SM	A-4, A-2	0	0	85-100	75-100	60-90	30-50	20-25	5-10
	15-31	Fine sandy loam, sandy loam.	SM	A-2	0	0	85-100	75-90	60-80	25-35	<25	NP-5
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
222*: Rohonda-----	0-6	Fine sandy loam.	SM	A-2, A-4	0	0	95-100	90-100	70-80	30-40	---	NP
	6-21	Sandy loam, fine sandy loam, very fine sandy loam.	SC-SM	A-4, A-2	0	0	85-100	75-100	60-90	30-50	20-25	5-10
	21-38	Fine sandy loam, sandy loam.	SM	A-2	0	0	85-100	75-90	60-80	25-35	<25	NP-5
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Tieside-----	0-5	Gravelly sandy loam.	SM, GM	A-2	0	0	55-80	50-75	40-50	25-35	---	NP
	5-13	Sandy loam, fine sandy loam.	SM	A-2	0	0	75-90	75-90	60-80	20-30	---	NP
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
223*: Rohonda-----	0-7	Fine sandy loam.	SM	A-2, A-4	0	0	95-100	90-100	70-80	30-40	---	NP
	7-21	Sandy loam, fine sandy loam, very fine sandy loam.	SC-SM	A-4, A-2	0	0	85-100	75-100	60-90	30-50	20-25	5-10
	21-33	Fine sandy loam, sandy loam.	SM	A-2	0	0	85-100	75-90	60-80	25-35	<25	NP-5
	33	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Cheadle-----	0-7	Very cobbly fine sandy loam.	SM	A-2	0-5	50-65	75-90	65-80	50-65	20-35	---	NP
	7-12	Very cobbly loamy fine sand.	SM	A-2, A-1	0-5	50-65	60-85	55-75	40-55	15-30	---	NP
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
224----- Ryark	0-3	Loamy sand----	SM	A-2-4	0	0	95-100	95-100	60-70	15-30	---	NP
	3-36	Sandy loam----	SC-SM, SC	A-2-4, A-4	0	0	95-100	95-100	60-70	25-40	<30	5-10
	36-60	Loamy sand----	SM	A-2-4	0	0	95-100	95-100	60-70	15-30	<25	NP-5
225*: Shirleybasin-	0-2	Loam-----	CL	A-6, A-7	0	0	100	90-100	75-90	50-75	35-45	15-25
	2-8	Sandy clay loam, clay loam.	CL, SC	A-7	0	0	100	90-100	75-90	45-65	40-50	20-30
	8-27	Clay, clay loam.	CH	A-7	0	0	80-100	75-100	70-95	60-80	50-60	30-35
	27-52	Clay loam, loam, sandy clay loam.	CL	A-6, A-7	0	0	95-100	85-100	75-90	50-75	35-50	15-30
	52-60	Gravelly sandy clay loam.	SC	A-6, A-7, A-2	0	0-10	70-85	60-75	50-65	25-40	35-45	15-25
Twocabin-----	0-4	Gravelly loam	SC, SC-SM, GC, GM-GC	A-4, A-6	0	0-10	60-80	55-75	45-65	35-50	25-35	5-15
	4-11	Very gravelly sandy clay loam, very gravelly clay loam.	GC	A-2	0	0-25	40-50	35-45	30-40	20-35	30-35	10-15
	11-20	Very gravelly sandy clay loam, very gravelly loam.	GC	A-2	0	0-25	40-50	35-45	30-40	20-30	30-35	10-15
	20-60	Loam, clay loam, sandy clay loam.	CL, CL-ML	A-4, A-6	0	0	100	90-100	80-90	50-70	25-35	5-15
Lahtida-----	0-2	Loam-----	CL, CL-ML	A-4	0	0	100	90-100	80-90	50-70	25-30	5-10
	2-15	Clay loam, clay.	CL	A-7, A-6	0	0	100	90-100	80-90	55-80	35-50	20-30
	15-28	Loam, sandy clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	100	90-100	75-85	55-70	25-35	5-15
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
226----- Silas	0-22	Loam-----	CL-ML	A-4	0	0	95-100	85-100	75-95	65-75	25-30	5-10
	22-32	Gravelly sandy clay loam, gravelly clay loam.	CL, SC	A-6	0	0	85-90	65-75	45-65	35-55	30-35	10-15
	32-60	Sandy clay loam, clay loam, loam.	CL	A-6	0	0	80-100	75-100	65-85	50-65	30-35	10-15

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
227*: Silas, gravelly substratum--	0-22	Loam-----	CL-ML	A-4	0	0	95-100	85-100	75-95	65-75	25-30	5-10
	22-42	Gravelly sandy clay loam, gravelly clay loam.	CL, SC	A-6	0	0	85-90	65-75	45-65	35-55	30-35	10-15
	42-60	Stratified very gravelly sandy loam to gravelly loamy sand.	GM, SM, GP-GM, SP-SM	A-1	0	0	40-80	35-75	20-30	10-20	---	NP
Vensora-----	0-17	Loam-----	CL-ML	A-4	0	0	90-100	85-100	75-90	50-70	25-30	5-10
	17-30	Loam, gravelly loam, sandy clay loam.	CL	A-6	0	0-15	80-100	75-100	65-90	50-70	30-35	10-15
	30-60	Very gravelly sandy clay loam, very gravelly sandy loam.	GC, SC, GM-GC, SC-SM	A-2, A-1	0	0-15	60-70	45-55	35-45	15-30	25-35	5-15
228----- Stunner	0-3	Sandy loam----	SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	NP-5
	3-12	Loam, clay loam.	CL	A-6	0	0	100	100	90-95	60-75	30-40	15-20
	12-26	Loam, sandy clay loam, clay loam.	CL, SC	A-6	0	0	100	100	85-95	45-65	30-40	10-20
	26-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	NP-5
229*: Stunner-----	0-3	Sandy loam----	SM	A-2, A-4	0	0	100	100	70-80	30-45	15-25	NP-5
	3-13	Loam, clay loam.	CL	A-6	0	0	100	100	90-95	60-75	30-40	15-20
	13-25	Loam, sandy clay loam, clay loam.	CL, SC	A-6	0	0	100	100	85-95	45-65	30-40	10-20
	25-60	Loam, sandy clay loam.	CL, SC	A-6	0	0	100	100	80-90	40-60	30-40	10-20
Borollic Camborthids.												
230*: Stunner-----	0-1	Fine sandy loam.	SM	A-2, A-4	0	0	100	100	70-80	30-45	15-25	NP-5
	1-10	Loam, clay loam.	CL	A-6	0	0	100	100	90-95	60-75	30-40	15-20
	10-32	Loam, sandy clay loam, clay loam.	CL, SC	A-6	0	0	100	100	85-95	45-65	30-40	10-20
	32-60	Loam, sandy clay loam.	CL, SC	A-6	0	0	100	100	80-90	40-60	30-40	10-20

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
230*: Tisworth-----	0-4	Sandy loam----	SC-SM, SM	A-2, A-4	0	0	95-100	95-100	80-90	30-50	15-30	NP-10
	4-19	Clay loam, sandy clay loam.	CL	A-6	0	0	95-100	95-100	80-90	50-75	35-40	15-20
	19-60	Clay loam, sandy clay loam, loam.	CL	A-6	0	0	95-100	95-100	80-90	50-75	30-35	10-15
Blazon-----	0-2	Loam-----	CL	A-6	0	0	90-100	90-100	70-90	60-75	30-35	10-15
	2-12	Clay loam-----	CL	A-6	0	0	90-100	90-100	75-90	65-80	35-40	15-20
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
231*: Stunner-----	0-3	Sandy loam----	SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	NP-5
	3-12	Loam, clay loam.	CL	A-6	0	0	100	100	90-95	60-75	30-40	15-20
	12-26	Loam, sandy clay loam, clay loam.	CL, SC	A-6	0	0	100	100	85-95	45-65	30-40	10-20
	26-60	Sandy loam, fine sandy loam.	SM	A-2, A-4	0	0	100	100	70-80	30-45	20-25	NP-5
Urban land.												
232----- Teeler	0-6	Very gravelly sandy loam.	GM-GC, GM	A-1, A-2	0	0-15	45-55	40-50	30-40	15-25	20-30	NP-10
	6-14	Very gravelly sandy clay loam.	GC	A-2	0	10-20	35-45	30-40	25-35	10-20	35-40	15-20
	14-60	Very cobbly sandy loam, very gravelly sandy loam.	GM-GC, GM	A-1, A-2-4	0-5	20-35	50-60	40-50	30-40	10-20	20-30	NP-10
233*: Thiel-----	0-3	Gravelly sandy loam.	SM	A-1, A-2	0	0-10	65-70	55-65	40-45	20-30	---	NP
	3-12	Very gravelly sandy clay loam.	GC	A-2	0	0-20	45-55	40-50	35-45	20-30	30-35	10-15
	12-19	Very gravelly sandy loam.	GM	A-1	0	0-5	45-60	35-50	25-35	15-25	15-25	NP-5
	19-60	Very gravelly loamy sand, extremely gravelly loamy sand.	GP-GM	A-1	0	0-5	35-45	20-35	15-25	5-10	---	NP
Lymanson-----	0-3	Sandy loam----	SC-SM	A-4	0	0	100	85-100	60-80	35-50	25-30	5-10
	3-10	Gravelly sandy loam.	SC-SM	A-2, A-4	0	0	70-85	60-75	45-55	25-40	25-30	5-10
	10-18	Gravelly sandy clay loam.	SC	A-2, A-6	0	0	70-85	60-75	55-65	25-40	30-35	10-15
	18-33	Very gravelly loam.	GC	A-2	0	0	40-60	35-50	30-40	25-35	30-35	10-15
	33	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
233*: Leavitt-----	0-14	Sandy loam----	SM	A-4	0	0	100	95-100	70-75	40-50	20-25	NP-5
	14-22	Clay loam, sandy clay loam.	CL	A-6	0	0	100	95-100	85-95	50-75	30-35	10-15
	22-60	Sandy clay loam, loam, clay loam.	CL, SC	A-6	0	0	95-100	95-100	80-90	45-65	30-35	10-15
234*: Tieside-----	0-4	Sandy loam----	SM	A-2	0	0	90-100	90-100	70-80	25-35	---	NP
	4-13	Sandy loam, fine sandy loam.	SM	A-2	0	0	75-90	75-90	60-80	20-30	---	NP
	13-19	Sandy loam, coarse sandy loam.	SM	A-2	0	0	80-90	75-85	35-50	25-35	15-25	NP-5
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Pilotpeak----	0-1	Cobbly fine sandy loam.	SM	A-4	0-5	15-20	80-90	75-85	65-75	35-50	15-25	NP-5
	1-5	Very channery fine sandy loam.	GM	A-1-B	0-5	15-20	50-55	45-50	40-45	15-25	15-25	NP-5
	5-11	Extremely channery fine sandy loam.	GM, GP-GM	A-1	0-5	15-25	25-35	20-30	18-25	5-15	15-25	NP-5
	11	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
235----- Tismid	0-4	Sandy loam----	SM, SC-SM	A-4	0	0	100	100	75-80	35-50	<25	NP-10
	4-14	Sandy clay loam, clay loam.	SC, CL	A-6	0	0	100	100	85-90	45-65	30-40	10-20
	14-60	Sandy clay loam, loam.	SC, CL	A-6	0	0	90-100	85-100	75-90	40-60	30-40	10-20
236*: Tisworth-----	0-5	Loam-----	CL-ML	A-4	0	0	95-100	95-100	80-90	50-70	25-30	5-10
	5-15	Clay loam, sandy clay loam.	CL	A-6	0	0	95-100	95-100	80-90	50-75	35-40	15-20
	15-60	Clay loam, sandy clay loam, loam.	CL	A-6	0	0	95-100	95-100	80-90	50-75	30-40	15-20
Gerdrum Family-----	0-1	Loam-----	CL	A-6	0	0	100	100	85-90	60-70	30-35	10-15
	1-16	Clay loam, clay, silty clay loam.	CL	A-7	0	0	100	100	85-95	80-90	45-50	20-25
	16-60	Clay loam, clay, silty clay loam.	CL	A-7	0	0	100	100	85-95	80-90	40-50	20-25

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
237*: Tisworth----	0-2	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	40-60	30-35	10-15
	2-60	Clay loam, sandy clay loam.	CL	A-6	0	0	95-100	95-100	80-90	50-75	35-40	15-20
Gerdrum Family-----	0-2	Sandy loam----	SM, SC-SM	A-4	0	0	100	100	75-80	35-45	15-25	NP-10
	2-36	Clay loam, clay, silty clay loam.	CL	A-7	0	0	100	100	85-95	80-90	45-50	20-25
	36-60	Clay loam, clay, silty clay loam.	CL	A-7	0	0	100	100	85-95	80-90	40-50	20-25
238*: Tule-----	0-3	Loam-----	SC, CL	A-6	0	0	95-100	85-100	70-90	45-75	30-35	10-15
	3-12	Loam, sandy clay loam.	SC, CL	A-6	0	0	95-100	85-100	70-90	45-75	30-35	10-15
	12-15	Extremely gravelly loam, very gravelly sandy clay loam.	GC, SC	A-2	0	0	50-60	15-35	13-25	8-20	30-35	10-15
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Chalkville---	0-2	Loam-----	ML, CL-ML, CL	A-4	0	0	95-100	85-100	75-85	50-70	15-30	NP-10
	2-12	Clay loam, sandy clay loam, gravelly clay loam.	CL, SC	A-6	0	0	75-100	70-95	60-90	45-70	35-40	15-20
	12-15	Extremely gravelly sandy clay loam, very gravelly sandy loam.	GC, GP-GC, GM-GC	A-2, A-1	0	0-15	25-50	20-45	17-30	10-25	25-35	5-15
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
239*: Tyzak-----	0-4	Cobbly very fine sandy loam.	SM, ML	A-4	0	15-30	75-90	70-90	65-75	35-55	25-30	NP-5
	4-13	Very cobbly loam, extremely cobbly loam.	GC, SC, CL	A-6, A-2-6	0-10	45-60	50-80	45-75	35-65	25-55	30-35	10-15
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
240----- Wycolo	0-3	Sandy loam----	SM	A-2, A-4	0	0	100	85-100	70-85	30-50	<25	NP-5
	3-16	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	85-100	70-90	40-65	30-35	10-15
	16-40	Loam, clay loam, sandy clay loam.	CL, SC	A-6	0	0	85-100	75-100	65-90	35-65	30-40	10-20
	40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
241*: Wycolo-----	0-6	Fine sandy loam.	SM	A-2, A-4	0	0	100	85-100	70-85	30-50	<25	NP-5
	6-12	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	85-100	70-90	40-65	30-35	10-15
	12-25	Loam, clay loam, sandy clay loam.	CL, SC	A-6	0	0	85-100	75-100	65-90	35-65	30-40	10-20
	25-36	Clay loam, loam, sandy clay loam.	CL, SC	A-6	0	0	80-100	75-100	65-90	35-65	30-40	10-20
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Alcova-----	0-4	Gravelly sandy loam.	SM, SC-SM	A-2, A-1	0	0	75-80	70-75	45-55	20-35	20-30	NP-10
	4-24	Gravelly sandy clay loam.	SC, GC	A-2	0	0	60-80	55-75	35-55	20-35	30-35	10-15
	24-60	Very gravelly sandy clay loam.	GC	A-2	0	0	40-55	35-50	20-35	15-25	30-35	10-15
242*: Wycolo-----	0-6	Fine sandy loam.	SM	A-2, A-4	0	0	100	85-100	70-85	30-50	<25	NP-5
	6-12	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	85-100	70-90	40-65	30-35	10-15
	12-26	Loam, clay loam, sandy clay loam.	CL, SC	A-6	0	0	85-100	75-100	65-90	35-65	30-40	10-20
	26-36	Clay loam, loam, sandy clay loam.	CL, SC	A-6	0	0	80-100	75-100	65-90	35-65	30-40	10-20
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Alcova-----	0-4	Gravelly sandy loam.	SM, SC-SM	A-2, A-1	0	0	75-80	70-75	45-55	20-35	20-30	NP-10
	4-24	Gravelly sandy clay loam.	SC, GC	A-2	0	0	60-80	55-75	35-55	20-35	30-35	10-15
	24-60	Very gravelly sandy clay loam.	GC	A-2	0	0	40-55	35-50	20-35	15-25	30-35	10-15
Urban land.												

See footnote at end of table.

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
243*: Wycolo-----	0-2	Sandy loam----	SM	A-2, A-4	0	0	100	85-100	70-85	30-50	<25	NP-5
	2-11	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	85-100	70-90	40-65	30-35	10-15
	11-31	Loam, clay loam, sandy clay loam.	CL, SC	A-6	0	0	85-100	75-100	65-90	35-65	30-40	10-20
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Tieside-----	0-1	Sandy loam----	SM	A-2	0	0	90-100	90-100	70-80	25-35	---	NP
	1-6	Sandy loam, fine sandy loam.	SM	A-2	0	0	75-90	75-90	60-80	20-30	---	NP
	6-14	Sandy loam, coarse sandy loam.	SM	A-2	0	0	80-90	75-85	35-50	25-35	15-25	NP-5
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
244*: Wycolo-----	0-3	Fine sandy loam.	SM	A-2, A-4	0	0	100	85-100	70-85	30-50	<25	NP-5
	3-13	Sandy clay loam, loam.	SC, CL	A-6	0	0	95-100	85-100	70-90	40-65	30-35	10-15
	13-24	Loam, clay loam, sandy clay loam.	CL, SC	A-6	0	0	85-100	75-100	65-90	35-65	30-40	10-20
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Thermopolis--	0-2	Fine sandy loam.	SM	A-4	0	0	90-100	85-100	75-85	40-50	<25	NP-5
	2-14	Silt loam, loam.	CL	A-6	0	0	75-100	75-100	65-95	50-85	30-35	10-15
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth		Moist bulk density G/cc	Permeability In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter Pct
	In	Pct							K	T		
100----- Aberone	0-8	10-17	1.30-1.40	2.0-6.0	0.11-0.13	7.4-7.8	<2	Low-----	0.15	1	5	1-2
	8-15	5-15	1.35-1.45	2.0-6.0	0.06-0.08	7.9-8.4	2-4	Low-----	0.10			
	15-60	5-15	1.40-1.50	6.0-20	0.02-0.03	7.9-9.0	<2	Low-----	0.05			
101*: Abston-----	0-2	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2
	2-25	35-50	1.20-1.30	<0.06	0.14-0.16	>8.4	2-8	High-----	0.37			
	25	---	---	---	---	---	---	-----	---			
Bullock-----	0-2	12-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	1-2
	2-16	25-35	1.25-1.35	0.2-0.6	0.15-0.18	>8.4	2-8	Moderate	0.37			
	16-24	18-24	1.25-1.35	0.6-2.0	0.15-0.17	>8.4	2-8	Low-----	0.37			
24	---	---	---	---	---	---	-----	---				
102*: Alcova-----	0-3	14-18	1.25-1.35	2.0-6.0	0.10-0.12	7.4-8.4	0-2	Low-----	0.20	2	3	1-2
	3-15	22-30	1.25-1.35	0.6-2.0	0.15-0.20	7.4-8.4	0-2	Moderate	0.28			
	15-37	20-27	1.25-1.35	0.6-2.0	0.12-0.15	7.9-9.0	0-2	Moderate	0.28			
	37-60	18-25	1.25-1.35	0.6-2.0	0.10-0.12	7.9-9.0	0-2	Low-----	0.10			
Borollic Camborthids.												
103*: Alcova, shallow substratum-----	0-2	20-25	1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	0-0	Low-----	0.32	2	6	1-2
	2-16	22-30	1.25-1.35	0.6-2.0	0.15-0.20	7.4-8.4	0-0	Moderate	0.28			
	16-27	18-25	1.25-1.35	0.6-2.0	0.08-0.10	7.9-9.0	0-2	Low-----	0.10			
	27-60	14-18	1.35-1.45	6.0-20	0.03-0.07	7.9-9.0	0-2	Low-----	0.05			
Lupinto-----	0-2	12-16	1.20-1.30	0.6-6.0	0.10-0.13	6.6-7.8	0-2	Low-----	0.10	1	5	1-3
	2-7	22-27	1.25-1.35	0.6-2.0	0.13-0.14	7.4-7.8	0-2	Moderate	0.20			
	7-24	18-26	1.25-1.35	0.6-2.0	0.09-0.10	7.9-9.0	2-4	Moderate	0.10			
	24-60	10-16	1.30-1.40	6.0-20	0.04-0.06	7.9-9.0	2-4	Low-----	0.05			
Dahlquist-----	0-4	15-22	1.15-1.25	0.6-2.0	0.07-0.10	6.6-7.3	0-0	Low-----	0.10	1	8	1-2
	4-20	20-28	1.25-1.35	0.6-2.0	0.05-0.08	6.6-7.8	0-0	Moderate	0.05			
	20-60	8-15	1.35-1.45	6.0-20	0.04-0.06	7.9-9.0	0-2	Low-----	0.05			
104*: Alcova, calcareous subsoil-----	0-2	14-18	1.25-1.35	2.0-6.0	0.10-0.12	7.4-8.4	0-0	Low-----	0.20	2	3	1-2
	2-16	22-30	1.25-1.35	0.6-2.0	0.15-0.20	7.4-8.4	0-0	Moderate	0.28			
	16-28	20-30	1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	0-2	Moderate	0.28			
	28-60	14-18	1.35-1.45	6.0-20	0.03-0.07	7.9-9.0	0-2	Low-----	0.05			
Rock River-----	0-2	10-16	1.25-1.35	2.0-6.0	0.06-0.08	6.6-7.8	0-0	Low-----	0.10	5	7	1-2
	2-10	24-30	1.25-1.35	0.6-2.0	0.10-0.12	6.6-7.8	0-0	Moderate	0.20			
	10-60	20-27	1.30-1.40	0.6-2.0	0.10-0.12	7.4-9.0	0-2	Moderate	0.20			
105----- Almy	0-2	10-20	1.15-1.25	0.6-2.0	0.17-0.19	7.4-8.4	0-0	Low-----	0.37	5	5	1-2
	2-11	15-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	0-0	Moderate	0.43			
	11-35	18-27	1.30-1.40	0.6-2.0	0.13-0.15	7.9-9.0	0-4	Moderate	0.43			
	35-60	10-20	1.35-1.45	2.0-6.0	0.10-0.12	7.9-9.0	0-4	Low-----	0.37			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
106*: Almy-----	0-2	10-20	1.15-1.25	0.6-2.0	0.17-0.19	7.4-8.4	0-0	Low-----	0.37	5	5	1-2
	2-16	15-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	0-0	Moderate	0.43			
	16-29	18-27	1.30-1.40	0.6-2.0	0.13-0.15	7.9-9.0	0-4	Moderate	0.43			
	29-60	10-20	1.35-1.45	2.0-6.0	0.10-0.12	7.9-9.0	0-4	Low-----	0.37			
Urban land.												
107*: Almy-----	0-2	5-15	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.32	5	3	1-2
	2-14	15-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	0-0	Moderate	0.43			
	14-38	18-27	1.30-1.40	0.6-2.0	0.13-0.15	7.9-9.0	0-4	Moderate	0.43			
	38-60	10-20	1.35-1.45	2.0-6.0	0.10-0.12	7.9-9.0	0-4	Low-----	0.37			
Tismid-----	0-2	20-25	1.20-1.30	0.6-2.0	0.14-0.16	7.4-7.8	<2	Moderate	0.32	5	5	.5-1
	2-7	20-35	1.30-1.40	0.6-2.0	0.14-0.18	7.4-8.4	<2	Moderate	0.32			
	7-14	20-35	1.30-1.40	0.2-0.6	0.16-0.18	>8.4	<2	Moderate	0.37			
	14-60	20-30	1.30-1.40	0.2-0.6	0.13-0.15	>7.8	<4	Moderate	0.37			
108----- Alogia	0-3	12-18	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	2-4	Low-----	0.32	5	5	1-2
	3-21	20-35	1.20-1.30	0.6-2.0	0.13-0.15	7.9-9.0	2-8	Moderate	0.37			
	21-41	20-25	1.20-1.30	0.6-2.0	0.13-0.15	7.9-9.0	4-8	Low-----	0.37			
	41-60	20-35	1.20-1.30	0.6-2.0	0.14-0.16	7.4-8.4	4-8	Moderate	0.37			
109*: Alogia-----	0-3	12-18	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	2-4	Low-----	0.32	5	5	1-2
	3-21	20-35	1.20-1.30	0.6-2.0	0.13-0.15	7.9-9.0	2-8	Moderate	0.37			
	21-41	20-25	1.20-1.30	0.6-2.0	0.13-0.15	7.9-9.0	4-8	Low-----	0.37			
	41-60	20-35	1.20-1.30	0.6-2.0	0.14-0.16	7.4-8.4	4-8	Moderate	0.37			
Urban land.												
110----- Anchutz	0-2	12-16	1.25-1.35	2.0-6.0	0.11-0.13	7.4-8.4	0-2	Low-----	0.24	5	3	.5-1
	2-15	20-30	1.30-1.40	0.6-2.0	0.14-0.16	7.4-8.4	0-2	Moderate	0.32			
	15-39	20-30	1.30-1.40	0.6-2.0	0.15-0.17	8.5-9.0	0-2	Moderate	0.32			
	39-60	12-22	1.40-1.50	2.0-6.0	0.11-0.13	8.5-9.0	0-2	Low-----	0.24			
111*: Ansel-----	0-6	5-15	1.25-1.35	2.0-6.0	0.06-0.08	6.6-7.3	0-0	Low-----	0.20	2	6	.5-2
	6-24	25-35	1.25-1.35	0.6-2.0	0.11-0.13	6.6-7.3	0-0	Moderate	0.20			
	24-60	10-20	1.35-1.45	2.0-6.0	0.04-0.06	6.6-7.3	0-0	Low-----	0.10			
Granile-----	0-2	10-20	1.25-1.35	2.0-6.0	0.07-0.08	6.6-7.3	0-0	Low-----	0.15	4	7	.5-2
	2-15	10-20	1.35-1.45	2.0-6.0	0.04-0.06	6.6-7.3	0-0	Low-----	0.10			
	15-24	25-35	1.25-1.35	0.6-2.0	0.05-0.07	6.6-7.3	0-0	Moderate	0.15			
	24-60	8-18	1.35-1.45	2.0-6.0	0.04-0.06	6.6-7.3	0-0	Low-----	0.10			
112*: Bateson-----	0-2	20-27	1.30-1.40	0.6-2.0	0.11-0.13	6.6-7.3	<2	Moderate	0.17	5	7	1-2
	2-21	20-27	1.30-1.40	0.6-2.0	0.11-0.13	7.4-7.8	<2	Moderate	0.17			
	21-29	5-15	1.40-1.50	2.0-6.0	0.05-0.07	7.4-8.4	<2	Low-----	0.10			
	29-60	2-10	1.45-1.55	6.0-20	0.03-0.05	7.9-9.0	<2	Low-----	0.05			
Shirleybasin----	0-2	20-27	1.25-1.35	0.6-2.0	0.18-0.20	6.6-7.3	<2	Moderate	0.32	5	6	1-2
	2-8	30-40	1.25-1.35	0.6-2.0	0.16-0.19	6.6-7.8	<2	High-----	0.37			
	8-27	35-45	1.20-1.30	0.06-0.2	0.16-0.19	7.4-8.4	<2	High-----	0.37			
	27-60	20-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	2-4	Moderate	0.37			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
113*: Blackhall-----	0-2	5-15	1.25-1.35	2.0-6.0	0.10-0.14	7.4-8.4	0-2	Low-----	0.10	1	8	.5-1
	2-18	5-15	1.40-1.50	2.0-6.0	0.10-0.14	7.9-8.4	2-4	Low-----	0.32			
	18	---	---	---	---	---	---	---	---			
Browline, moist-----	0-3	8-15	1.45-1.55	2.0-6.0	0.06-0.08	7.4-8.4	0-2	Low-----	0.10	1	8	1-2
	3-19	10-15	1.40-1.50	2.0-6.0	0.03-0.05	7.9-9.0	0-2	Low-----	0.10			
	19-43	8-15	1.40-1.50	2.0-6.0	0.04-0.07	7.9-9.0	2-4	Low-----	0.10			
	43-60	20-25	1.40-1.50	0.6-2.0	0.04-0.06	7.9-8.4	0-2	Moderate	0.05			
114*: Blackhall-----	0-2	5-15	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	0-2	Low-----	0.32	1	3	.5-1
	2-16	5-15	1.40-1.50	2.0-6.0	0.10-0.14	7.9-8.4	2-4	Low-----	0.32			
	16	---	---	---	---	---	---	---	---			
Satanka-----	0-4	5-15	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.32	2	3	1-2
	4-9	20-30	1.25-1.35	0.6-2.0	0.14-0.16	7.4-8.4	0-0	Moderate	0.32			
	9-35	17-25	1.35-1.45	0.6-2.0	0.12-0.14	7.9-9.0	0-2	Low-----	0.37			
	35	---	---	---	---	---	---	---	---			
Rock outcrop.												
115*: Blazon-----	0-5	18-27	1.15-1.25	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.32	1	4L	.5-1
	5-15	27-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	0-4	Moderate	0.37			
	15	---	---	---	---	---	---	---	---			
Chaperton-----	0-3	28-35	1.25-1.35	0.6-2.0	0.18-0.20	7.4-7.8	<2	Moderate	0.32	2	6	1-2
	3-15	28-35	1.25-1.35	0.6-2.0	0.18-0.20	7.4-7.8	<2	Moderate	0.32			
	15-24	30-35	1.25-1.35	0.6-2.0	0.18-0.20	7.9-9.0	<2	Moderate	0.32			
	24	---	---	---	---	---	---	---	---			
116*: Blazon-----	0-5	18-27	1.15-1.25	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.32	1	4L	.5-1
	5-15	27-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	0-4	Moderate	0.37			
	15	---	---	---	---	---	---	---	---			
Delphill-----	0-3	27-35	1.05-1.15	0.6-2.0	0.19-0.21	7.9-8.4	0-4	Moderate	0.37	2	4L	.5-1
	3-28	20-35	1.20-1.30	0.6-2.0	0.17-0.19	7.9-9.0	0-4	Moderate	0.37			
	28	---	---	---	---	---	---	---	---			
117*: Bonjea-----	0-4	10-20	1.25-1.35	0.6-2.0	0.11-0.14	6.6-7.8	0-0	Low-----	0.32	1	3	2-4
	4-10	20-30	1.25-1.40	0.6-2.0	0.12-0.14	6.6-7.8	0-0	Moderate	0.28			
	10-15	20-30	1.25-1.40	0.6-2.0	0.07-0.12	6.6-7.8	0-0	Moderate	0.17			
	15	---	---	---	---	---	---	---	---			
Chugcreek-----	0-4	12-15	1.25-1.35	2.0-6.0	0.11-0.12	6.6-7.3	0-0	Low-----	0.20	2	3	2-5
	4-19	18-20	1.35-1.45	2.0-6.0	0.11-0.12	6.6-7.3	0-0	Low-----	0.20			
	19-29	24-35	1.25-1.35	0.6-2.0	0.13-0.19	6.6-7.8	0-0	Moderate	0.32			
	29-38	24-35	1.25-1.35	0.6-2.0	0.12-0.16	6.6-7.8	0-0	Moderate	0.17			
	38	---	---	---	---	---	---	---	---			
Rock outcrop.												

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct							K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
118*: Bonjea-----	0-4	10-20	1.25-1.35	0.6-2.0	0.11-0.14	6.6-7.8	0-0	Low-----	0.32	1	3	2-4
	4-10	20-30	1.25-1.40	0.6-2.0	0.12-0.14	6.6-7.8	0-0	Moderate	0.28			
	10-15	20-30	1.25-1.40	0.6-2.0	0.07-0.12	6.6-7.8	0-0	Moderate	0.17			
	15	---	---	---	---	---	---	---	---			
Rock outcrop.												
Chugcreek-----	0-5	12-15	1.25-1.35	2.0-6.0	0.11-0.12	6.6-7.3	0-0	Low-----	0.20	2	3	2-5
	5-34	24-35	1.25-1.35	0.6-2.0	0.13-0.19	6.6-7.8	0-0	Moderate	0.32			
	34-36	24-35	1.25-1.35	0.6-2.0	0.12-0.16	6.6-7.8	0-0	Moderate	0.17			
	36	---	---	---	---	---	---	---	---			
119-----	0-3	14-18	1.25-1.35	2.0-6.0	0.13-0.15	7.9-9.0	2-4	Low-----	0.32	2	3	1-2
Bosler, wet substratum	3-20	22-30	1.25-1.35	0.6-2.0	0.14-0.16	7.9-9.0	2-4	Moderate	0.32			
	20-60	0-10	1.45-1.55	6.0-20	0.03-0.05	7.9-9.0	0-4	Low-----	0.05			
120*: Bosler-----	0-7	10-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.28	2	3	.5-1
	7-15	20-30	1.25-1.45	0.6-2.0	0.14-0.16	7.4-8.4	<2	Moderate	0.32			
	15-30	15-27	1.25-1.40	0.6-2.0	0.15-0.17	7.9-9.0	<2	Moderate	0.32			
	30-60	0-5	1.40-1.60	6.0-20	0.02-0.04	7.9-9.0	<2	Low-----	0.05			
Borollic Camborthids.												
121*: Bosler, wet substratum-----	0-3	14-18	1.25-1.35	2.0-6.0	0.13-0.15	7.9-9.0	2-4	Low-----	0.32	2	3	1-2
	3-20	22-30	1.25-1.35	0.6-2.0	0.14-0.16	7.9-9.0	2-4	Moderate	0.32			
	20-60	0-10	1.45-1.55	6.0-20	0.03-0.05	7.9-9.0	0-4	Low-----	0.05			
Urban land.												
122*: Boyle-----	0-2	10-20	1.40-1.50	2.0-6.0	0.08-0.10	6.6-7.3	<2	Low-----	0.15	1	7	1-3
	2-10	20-28	1.30-1.40	2.0-6.0	0.09-0.11	6.6-7.3	<2	Low-----	0.15			
	10	---	---	---	---	---	---	---	---			
Alderon-----	0-6	12-19	1.25-1.35	2.0-6.0	0.10-0.12	6.6-7.3	0-2	Low-----	0.10	2	6	1-3
	6-34	20-35	1.25-1.35	0.6-2.0	0.10-0.12	6.6-7.3	0-2	Moderate	0.15			
	34-40	10-18	1.35-1.45	2.0-6.0	0.06-0.07	6.6-7.8	0-2	Low-----	0.10			
	40	---	---	---	---	---	---	---	---			
Cathedral-----	0-7	5-18	1.20-1.25	6.0-20	0.08-0.10	6.6-7.3	0-0	Low-----	0.10	1	6	2-4
	7-14	5-18	1.20-1.25	6.0-20	0.05-0.07	6.6-7.3	0-0	Low-----	0.05			
	14	---	---	---	---	---	---	---	---			
123*: Boyle-----	0-3	10-20	1.40-1.50	2.0-6.0	0.08-0.10	6.6-7.3	<2	Low-----	0.15	1	7	1-3
	3-13	20-28	1.30-1.40	2.0-6.0	0.09-0.11	6.6-7.3	<2	Low-----	0.15			
	13	---	---	---	---	---	---	---	---			
Boyle, thin solum-----	0-2	10-20	1.40-1.50	2.0-6.0	0.08-0.10	6.6-7.3	<2	Low-----	0.15	1	7	1-3
	2-9	20-28	1.30-1.40	2.0-6.0	0.09-0.11	6.6-7.3	<2	Low-----	0.15			
	9	---	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
124*: Boyle-----	0-3	10-20	1.40-1.50	2.0-6.0	0.08-0.10	6.6-7.3	<2	Low-----	0.15	1	7	1-3
	3-17	20-28	1.30-1.40	2.0-6.0	0.09-0.11	6.6-7.3	<2	Low-----	0.15			
	17	----	----	----	----	----	----	-----	-----			
Rock outcrop.												
125*: Boyle-----	0-3	10-20	1.40-1.50	2.0-6.0	0.08-0.10	6.6-7.3	<2	Low-----	0.15	1	7	1-3
	3-6	20-28	1.30-1.40	2.0-6.0	0.11-0.13	6.6-7.3	<2	Low-----	0.15			
	6-12	20-28	1.30-1.40	2.0-6.0	0.09-0.11	6.6-7.3	<2	Low-----	0.15			
	12	----	----	----	----	----	----	-----	-----			
Lininger-----	0-7	16-20	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	0-2	Low-----	0.32	2	5	1-3
	7-14	20-30	1.25-1.35	0.6-2.0	0.12-0.14	6.6-7.8	0-2	Moderate	0.20			
	14-24	20-25	1.25-1.35	2.0-6.0	0.10-0.12	6.6-7.8	0-2	Low-----	0.15			
	24	----	----	0.00-0.2	----	----	----	-----	-----			
126----- Browline	0-3	8-12	1.45-1.55	2.0-6.0	0.05-0.08	7.4-8.4	0-2	Low-----	0.10	1	8	1-2
	3-14	10-15	1.45-1.55	2.0-6.0	0.04-0.07	7.9-8.4	0-2	Low-----	0.05			
	14-31	8-15	1.25-1.40	2.0-6.0	0.04-0.07	7.9-9.0	2-4	Low-----	0.05			
	31-60	8-15	1.45-1.55	2.0-6.0	0.03-0.05	7.9-9.0	0-4	Low-----	0.05			
127*: Browline-----	0-5	8-12	1.45-1.55	2.0-6.0	0.05-0.08	7.4-8.4	0-2	Low-----	0.10	1	8	1-2
	5-12	10-15	1.45-1.55	2.0-6.0	0.04-0.07	7.9-8.4	0-2	Low-----	0.05			
	12-42	8-15	1.25-1.40	2.0-6.0	0.04-0.07	7.9-9.0	2-4	Low-----	0.05			
	42-60	8-15	1.45-1.55	2.0-6.0	0.03-0.05	7.9-9.0	0-4	Low-----	0.05			
Hilltoppe-----	0-3	8-18	1.40-1.55	2.0-6.0	0.06-0.08	7.4-8.4	<2	Low-----	0.10	1	8	1-2
	3-14	8-18	1.45-1.65	2.0-6.0	0.02-0.04	7.9-9.0	<4	Low-----	0.10			
	14-33	----	----	----	----	----	----	-----	-----			
	33-60	8-18	1.45-1.65	2.0-6.0	0.02-0.04	7.9-9.0	<4	Low-----	0.05			
128*: Bruja-----	0-5	6-17	1.25-1.35	2.0-6.0	0.06-0.08	7.4-8.4	0-2	Low-----	0.10	1	8	1-2
	5-23	6-17	1.35-1.45	2.0-6.0	0.03-0.05	7.9-8.4	0-2	Low-----	0.05			
	23	----	----	----	----	----	----	-----	-----			
Canwall-----	0-3	8-14	1.25-1.35	2.0-6.0	0.09-0.11	7.4-8.4	0-2	Low-----	0.20	2	6	1-2
	3-12	10-18	1.35-1.45	2.0-6.0	0.08-0.11	7.4-8.4	0-2	Low-----	0.20			
	12-26	10-18	1.35-1.45	2.0-6.0	0.02-0.05	7.9-8.4	0-2	Low-----	0.05			
	26	----	----	----	----	----	----	-----	-----			
Telecan-----	0-16	6-15	1.25-1.35	2.0-6.0	0.13-0.17	7.4-8.4	0-2	Low-----	0.32	5	3	3-5
	16-60	6-18	1.35-1.45	2.0-6.0	0.10-0.16	7.9-8.4	0-2	Low-----	0.37			
129*: Buffork-----	0-7	10-15	1.40-1.50	2.0-6.0	0.10-0.12	6.6-7.3	0-0	Low-----	0.20	2	3	2-4
	7-17	20-25	1.30-1.40	0.6-2.0	0.13-0.15	6.6-7.3	0-0	Moderate	0.28			
	17-26	5-10	1.45-1.55	2.0-6.0	0.08-0.10	6.6-7.3	0-0	Low-----	0.20			
	26	----	----	----	----	----	----	-----	-----			
Bucklon-----	0-6	10-17	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.3	<2	Low-----	0.24	1	3	1-3
	6-16	18-25	1.30-1.40	0.6-2.0	0.16-0.18	6.6-7.3	<2	Moderate	0.32			
	16	----	----	----	----	----	----	-----	-----			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
130*: Byrnie-----	0-2	9-15	1.25-1.35	2.0-6.0	0.12-0.14	7.9-8.4	0-2	Low-----	0.32	1	3	.5-1
	2-12	9-15	1.35-1.45	2.0-6.0	0.08-0.10	7.9-8.4	0-4	Low-----	0.15			
	12	---	---	---	---	---	---	-----	---			
Rock outcrop.												
131. Calciborolls												
132----- Canburn	0-23	18-25	1.20-1.30	0.6-2.0	0.17-0.19	7.4-8.4	<2	Moderate	0.32	5	6	2-4
	23-50	18-27	1.25-1.35	0.6-2.0	0.16-0.18	7.4-8.4	<2	Moderate	0.37			
	50-60	8-18	1.35-1.45	2.0-6.0	0.10-0.12	7.4-8.4	<2	Low-----	0.17			
133----- Cantle	0-27	20-27	1.15-1.25	0.6-2.0	0.13-0.15	7.9-9.0	2-8	Moderate	0.32	5	7	3-6
	27-60	25-35	1.20-1.30	0.6-2.0	0.15-0.17	7.9-9.0	4-8	Moderate	0.37			
134*: Carbol-----	0-3	15-20	1.25-1.35	2.0-6.0	0.11-0.13	6.6-7.3	0-0	Low-----	0.24	1	3	2-3
	3-10	20-28	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.3	0-0	Moderate	0.32			
	10-14	20-28	1.25-1.35	0.6-2.0	0.04-0.06	6.6-7.8	0-0	Moderate	0.05			
	14	---	---	0.00-0.2	---	---	---	-----	---			
Rock outcrop.												
135*: Carmody-----	0-1	10-14	1.35-1.45	2.0-6.0	0.13-0.15	7.9-8.4	0-2	Low-----	0.32	2	3	.5-1
	1-24	12-16	1.35-1.45	2.0-6.0	0.13-0.15	7.9-8.4	0-2	Low-----	0.37			
	24	---	---	---	---	---	---	-----	---			
Edlin-----	0-3	10-14	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.3	<2	Low-----	0.28	5	3	1-2
	3-23	10-18	1.40-1.50	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.28			
	23-60	10-18	1.40-1.50	2.0-6.0	0.12-0.14	7.9-8.4	<2	Low-----	0.28			
136*: Carmody-----	0-5	10-14	1.35-1.45	2.0-6.0	0.13-0.15	7.9-8.4	0-2	Low-----	0.32	2	3	.5-1
	5-29	12-16	1.35-1.45	2.0-6.0	0.13-0.15	7.9-8.4	0-2	Low-----	0.37			
	29	---	---	---	---	---	---	-----	---			
Ryan Park-----	0-1	5-12	1.30-1.40	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.32	5	3	.5-2
	1-23	10-17	1.35-1.45	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32			
	23-60	5-15	1.35-1.45	2.0-6.0	0.13-0.15	7.9-9.0	<2	Low-----	0.32			
137*: Cathedral-----	0-7	5-18	1.20-1.25	6.0-20	0.08-0.10	6.6-7.3	0-0	Low-----	0.10	1	6	2-4
	7-16	5-18	1.20-1.25	6.0-20	0.05-0.07	6.6-7.3	0-0	Low-----	0.05			
	16	---	---	---	---	---	---	-----	---			
Spinekop-----	0-2	10-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-8.4	0-0	Low-----	0.32	5	3	1-2
	2-31	18-35	1.20-1.30	0.2-0.6	0.17-0.20	7.9-9.0	0-4	Moderate	0.37			
	31-60	16-24	1.30-1.40	0.6-2.0	0.15-0.17	7.9-9.0	0-4	Low-----	0.37			
Rock outcrop.												
138----- Center Creek	0-3	15-25	1.20-1.25	0.6-2.0	0.16-0.18	6.6-7.3	0-0	Moderate	0.32	5	6	2-4
	3-30	28-35	1.20-1.25	0.6-2.0	0.19-0.21	6.6-7.8	0-0	Moderate	0.37			
	30-37	15-25	1.20-1.25	0.6-2.0	0.15-0.17	6.6-7.8	0-0	Moderate	0.37			
	37-60	5-15	1.30-1.35	2.0-6.0	0.05-0.07	6.6-7.8	0-0	Low-----	0.10			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct							K	T		
			G/cc	In/hr	In/in	pH	mmhos/cm					Pct
139*: Chaperton, moderately saline-----	0-4	18-25	1.15-1.25	0.6-2.0	0.16-0.18	7.9-8.4	0-2	Moderate	0.32	2	5	1-2
	4-16	18-25	1.25-1.35	0.6-2.0	0.16-0.18	7.9-8.4	0-2	Moderate	0.32			
	16-35	18-25	1.25-1.35	0.6-2.0	0.16-0.18	8.5-9.0	4-8	Moderate	0.32			
	35	---	---	---	---	---	---	---	---			
Blazon-----	0-2	27-35	1.20-1.30	0.6-2.0	0.16-0.18	7.9-9.0	0-2	Moderate	0.37	1	4L	.5-1
	2-16	27-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	0-4	Moderate	0.37			
	16	---	---	---	---	---	---	---	---			
140*: Chaperton-----	0-1	14-17	1.25-1.35	2.0-6.0	0.08-0.10	7.4-7.8	<2	Low-----	0.15	2	7	1-2
	1-10	28-35	1.25-1.35	0.6-2.0	0.18-0.20	7.4-7.8	<2	Moderate	0.32			
	10-28	30-35	1.25-1.35	0.6-2.0	0.18-0.20	7.9-9.0	<2	Moderate	0.32			
	28	---	---	---	---	---	---	---	---			
Poposhia-----	0-1	15-20	1.60-1.70	2.0-6.0	0.06-0.08	7.4-8.4	0-2	Low-----	0.10	5	8	1-2
	1-7	18-30	1.30-1.40	0.6-2.0	0.17-0.20	7.4-8.4	0-2	Moderate	0.37			
	7-60	18-30	1.30-1.40	0.6-2.0	0.16-0.19	7.9-9.0	0-4	Moderate	0.37			
141*: Cheadle-----	0-3	10-18	1.30-1.35	2.0-6.0	0.12-0.14	6.6-7.3	0-0	Low-----	0.20	1	6	1-3
	3-7	10-18	1.40-1.45	2.0-6.0	0.09-0.11	7.4-7.8	0-0	Low-----	0.10			
	7-10	10-18	1.40-1.45	2.0-6.0	0.07-0.09	7.4-8.4	0-0	Low-----	0.10			
	10	---	---	---	---	---	---	---	---			
Passcreek, cobble subsoil-----	0-4	12-20	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.28	1	3	2-3
	4-11	20-26	1.25-1.35	0.6-2.0	0.14-0.16	7.4-8.4	0-0	Moderate	0.37			
	11-22	15-20	1.35-1.45	2.0-6.0	0.04-0.08	7.9-8.4	0-0	Low-----	0.05			
	22	---	---	---	---	---	---	---	---			
Rock outcrop.												
142*: Cheadle-----	0-4	10-18	1.30-1.35	2.0-6.0	0.12-0.14	6.6-7.3	0-0	Low-----	0.24	1	3	1-3
	4-10	10-18	1.40-1.45	2.0-6.0	0.07-0.09	7.4-7.8	0-0	Low-----	0.10			
	10	---	---	---	---	---	---	---	---			
Rock outcrop.												
Miracle-----	0-12	15-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	2-4
	12-24	20-25	1.25-1.35	0.6-2.0	0.13-0.15	6.6-7.8	<2	Low-----	0.37			
	24-38	15-20	1.35-1.45	2.0-6.0	0.10-0.12	6.6-7.8	<2	Low-----	0.24			
	38	---	---	0.00-0.2	---	---	---	---	---			
143. Cryaquolls												
144. Cryoborolls												
145*: Cushool-----	0-3	10-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.28	2	3	1-2
	3-16	22-30	1.30-1.40	0.6-2.0	0.14-0.16	6.6-8.4	0-2	Moderate	0.32			
	16-32	10-18	1.40-1.50	2.0-6.0	0.08-0.10	7.9-9.0	0-2	Low-----	0.15			
	32	---	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
145*: Cutback-----	0-1	5-15	1.25-1.35	2.0-6.0	0.12-0.14	6.6-8.4	0-0	Low-----	0.28	2	3	1-2
	1-7	20-35	1.15-1.25	0.6-2.0	0.14-0.16	7.4-8.4	0-0	Moderate	0.32			
	7-17	20-35	1.25-1.35	0.6-2.0	0.15-0.20	7.9-9.0	0-2	Moderate	0.32			
	17-31	5-25	1.30-1.40	2.0-6.0	0.05-0.06	7.9-9.0	0-4	Low-----	0.10			
	31	---	---	---	---	---	---	-----	-----			
146*: Cushool-----	0-2	10-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.28	2	3	1-2
	2-16	22-30	1.30-1.40	0.6-2.0	0.14-0.16	6.6-8.4	0-2	Moderate	0.32			
	16-32	10-18	1.40-1.50	2.0-6.0	0.12-0.14	7.9-9.0	0-2	Low-----	0.20			
	32	---	---	---	---	---	---	-----	-----			
Diamondville----	0-8	7-18	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.32	2	3	1-2
	8-20	18-35	1.30-1.40	0.6-2.0	0.16-0.20	7.4-8.4	0-0	Moderate	0.37			
	20-38	10-25	1.30-1.40	0.6-2.0	0.14-0.17	7.9-9.0	2-4	Low-----	0.37			
	38	---	---	---	---	---	---	-----	-----			
147*: Cutback-----	0-2	20-30	1.15-1.25	0.6-2.0	0.12-0.14	6.6-7.8	0-2	Moderate	0.20	2	5	1-2
	2-10	20-35	1.25-1.35	0.6-2.0	0.15-0.20	7.9-8.4	0-2	Moderate	0.32			
	10-20	10-25	1.30-1.40	2.0-6.0	0.05-0.06	7.9-9.0	0-4	Low-----	0.10			
	20-37	5-10	1.45-1.55	6.0-20	0.03-0.04	7.9-9.0	0-4	Low-----	0.05			
	37	---	---	---	---	---	---	-----	-----			
Pinelli-----	0-2	20-27	1.15-1.25	0.6-2.0	0.17-0.19	7.4-8.4	0-0	Low-----	0.32	5	6	.5-1
	2-17	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	0-0	High-----	0.37			
	17-60	30-40	1.30-1.40	0.2-0.6	0.19-0.21	7.9-8.4	0-4	Moderate	0.37			
148*: Dahlquist-----	0-2	12-18	1.25-1.35	2.0-6.0	0.05-0.07	6.6-7.3	0-0	Low-----	0.05	1	8	1-2
	2-15	20-28	1.25-1.35	0.6-2.0	0.05-0.08	6.6-7.8	0-0	Moderate	0.05			
	15-20	20-28	1.25-1.35	0.6-2.0	0.05-0.08	6.6-7.8	0-0	Moderate	0.05			
	20-60	10-15	1.35-1.45	6.0-20	0.05-0.07	7.9-9.0	0-2	Low-----	0.05			
Rawlins-----	0-2	10-15	1.25-1.35	2.0-6.0	0.11-0.13	6.6-7.8	<2	Low-----	0.28	5	3	1-2
	2-9	20-30	1.30-1.40	0.6-2.0	0.15-0.18	7.4-7.8	<2	Moderate	0.32			
	9-18	10-20	1.40-1.50	2.0-6.0	0.14-0.16	7.9-9.0	<2	Low-----	0.43			
	18-60	10-18	1.40-1.50	2.0-6.0	0.13-0.15	7.9-9.0	<2	Low-----	0.32			
Browtine-----	0-10	10-15	1.35-1.45	2.0-6.0	0.05-0.07	7.4-8.4	<2	Low-----	0.10	1	8	1-2
	10-32	10-15	1.35-1.45	2.0-6.0	0.05-0.07	7.9-9.0	0-2	Low-----	0.10			
	32-60	28-35	1.15-1.25	0.2-0.6	0.14-0.16	7.9-8.4	0-2	Moderate	0.20			
149*: Dalecreek-----	0-8	10-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-8.4	0-0	Low-----	0.28	5	3	2-3
	8-32	18-35	1.25-1.35	0.6-2.0	0.15-0.17	6.6-8.4	0-0	Moderate	0.32			
	32-60	18-35	1.30-1.40	0.6-2.0	0.14-0.16	6.6-8.4	0-0	Moderate	0.32			
Kovich-----	0-8	17-25	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	3	5	1-3
	8-31	19-35	1.30-1.40	0.6-2.0	0.15-0.19	6.6-7.8	<2	Low-----	0.28			
	31-60	18-30	1.30-1.40	0.6-2.0	0.11-0.15	6.6-7.8	<2	Moderate--	0.17			
150*: Delphill-----	0-1	20-27	1.15-1.25	0.6-2.0	0.17-0.20	7.9-8.4	0-4	Moderate	0.32	2	4L	.5-1
	1-21	20-35	1.20-1.30	0.6-2.0	0.17-0.19	7.9-9.0	0-4	Moderate	0.37			
	21	---	---	---	---	---	---	-----	-----			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
150*: Blazon-----	0-2	27-35	1.20-1.30	0.6-2.0	0.16-0.18	7.9-9.0	0-2	Moderate	0.37	1	4L	.5-1
	2-11	27-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	0-4	Moderate	0.37			
	11	---	---	---	---	---	---	---	---			
151*: Diamondville----	0-6	7-18	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.32	2	3	1-2
	6-18	18-35	1.30-1.40	0.6-2.0	0.16-0.20	7.4-8.4	0-0	Moderate	0.37			
	18-35	10-25	1.30-1.40	0.6-2.0	0.14-0.17	7.9-9.0	2-4	Low-----	0.37			
	35	---	---	---	---	---	---	---	---			
Cushool-----	0-3	10-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.28	2	3	1-2
	3-15	22-30	1.30-1.40	0.6-2.0	0.14-0.16	6.6-8.4	0-2	Moderate	0.32			
	15-28	10-18	1.40-1.50	2.0-6.0	0.12-0.14	7.9-9.0	0-2	Low-----	0.20			
	28	---	---	---	---	---	---	---	---			
152*: Diamonkit-----	0-1	16-19	1.25-1.35	2.0-6.0	0.10-0.12	7.4-8.4	0-2	Low-----	0.24	3	3	1-2
	1-11	24-32	1.25-1.35	0.6-2.0	0.16-0.17	7.9-9.0	0-2	Moderate	0.37			
	11-33	20-35	---	0.6-2.0	0.12-0.15	7.9-9.0	0-8	Moderate	0.37			
	33	---	---	---	---	---	---	---	---			
Stylite-----	0-2	10-20	1.15-1.25	2.0-6.0	0.12-0.14	7.4-8.4	0-0	Low-----	0.24	5	3	1-2
	2-14	20-35	1.25-1.35	0.6-2.0	0.16-0.19	7.4-8.4	0-2	Moderate	0.32			
	14-31	18-30	1.25-1.35	0.6-2.0	0.17-0.21	7.9-9.0	0-4	Moderate	0.32			
	31-60	18-30	---	---	0.06-0.10	7.4-8.4	4-8	---	---			
153----- Elkol	0-3	28-37	1.10-1.20	0.06-0.2	0.10-0.12	7.9-9.0	2-8	High-----	0.37	5	4L	.5-1
	3-34	35-45	1.15-1.25	0.06-0.2	0.08-0.10	7.9-9.0	2-8	High-----	0.43			
	34-60	28-37	1.20-1.30	0.06-0.2	0.08-0.10	7.9-9.0	2-8	High-----	0.43			
154*: Elkol-----	0-2	28-37	1.10-1.20	0.06-0.2	0.10-0.12	7.9-9.0	2-8	High-----	0.37	5	4L	.5-1
	2-30	35-45	1.15-1.25	0.06-0.2	0.08-0.10	7.9-9.0	2-8	High-----	0.43			
	30-60	28-35	1.25-1.35	0.2-0.6	0.07-0.09	7.9-9.0	2-8	Moderate	0.43			
Gerdrum Family--	0-1	20-24	1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	0-2	Moderate	0.32	5	6	1-2
	1-16	35-45	1.20-1.30	0.00-0.06	0.12-0.15	8.5-9.6	0-4	High-----	0.37			
	16-60	30-45	1.20-1.30	0.06-0.2	0.08-0.10	7.9-9.6	8-16	High-----	0.37			
155*: Elkol-----	0-5	28-37	1.10-1.20	0.06-0.2	0.10-0.12	7.9-9.0	2-8	High-----	0.37	5	4L	.5-1
	5-60	35-45	1.15-1.25	0.06-0.2	0.08-0.10	7.9-9.0	2-8	High-----	0.43			
Gerdrum Family--	0-2	20-27	1.15-1.25	0.6-2.0	0.12-0.14	7.9-8.4	0-2	Moderate	0.32	5	4L	.5-1
	2-21	35-45	1.15-1.25	0.00-0.06	0.14-0.18	8.5-9.0	2-4	High-----	0.37			
	21-60	28-35	1.25-1.35	0.2-0.6	0.12-0.16	7.9-9.0	8-16	Moderate	0.37			
156----- Evanston	0-4	10-18	1.25-1.35	2.0-6.0	0.11-0.13	6.6-7.3	0-0	Low-----	0.28	5	3	2-4
	4-14	25-35	1.25-1.35	0.6-2.0	0.16-0.19	7.4-7.8	0-0	Moderate	0.32			
	14-60	25-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	0-2	Moderate	0.32			
157*: Evanston-----	0-7	18-27	1.20-1.30	0.6-2.0	0.16-0.18	6.6-7.3	0-0	Low-----	0.32	5	6	2-4
	7-20	25-35	1.25-1.35	0.6-2.0	0.16-0.19	7.4-7.8	0-0	Moderate	0.32			
	20-60	25-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	0-2	Moderate	0.32			
Bonjea-----	0-5	10-20	1.25-1.35	0.6-2.0	0.11-0.14	6.6-7.8	0-0	Low-----	0.32	1	3	2-4
	5-15	20-30	1.25-1.40	0.6-2.0	0.12-0.14	6.6-7.8	0-0	Moderate	0.28			
	15	---	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct								K	T		
			G/cc	In/hr	In/in	pH	mmhos/cm					Pct	
158*: Fiveoh-----	0-6	5-15	1.25-1.35	2.0-6.0	0.11-0.13	7.4-8.4	<2	Low-----	0.32	5	3	1-2	
	6-16	8-18	1.35-1.45	2.0-6.0	0.11-0.13	7.9-8.4	<2	Low-----	0.28				
	16-60	8-18	1.35-1.45	2.0-6.0	0.11-0.13	7.9-9.0	2-4	Low-----	0.32				
Fiveoh, cobbly substratum----	0-3	5-15	1.35-1.45	2.0-6.0	0.12-0.14	7.4-8.4	0-0	Low-----	0.28	5	3	.5-2	
	3-22	5-17	1.35-1.45	2.0-6.0	0.10-0.14	7.9-8.4	0-0	Low-----	0.28				
	22-31	5-17	1.35-1.45	2.0-6.0	0.09-0.11	7.9-9.0	0-4	Low-----	0.17				
	31-60	5-10	1.35-1.45	6.0-20	0.05-0.07	7.9-9.0	0-4	Low-----	0.05				
Ryan Park-----	0-3	5-12	1.30-1.40	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.32	5	3	.5-2	
	3-18	10-17	1.35-1.45	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32				
	18-60	5-15	1.35-1.45	2.0-6.0	0.11-0.13	7.9-9.0	<2	Low-----	0.17				
159*: Fiveoh, cobbly substratum----	0-3	5-15	1.35-1.45	2.0-6.0	0.12-0.14	7.4-8.4	0-0	Low-----	0.28	5	3	.5-2	
	3-18	5-17	1.35-1.45	2.0-6.0	0.10-0.14	7.9-8.4	0-0	Low-----	0.28				
	18-41	5-17	1.35-1.45	2.0-6.0	0.09-0.13	7.9-9.0	0-4	Low-----	0.28				
	41-60	5-10	1.35-1.45	6.0-20	0.05-0.07	7.9-9.0	0-4	Low-----	0.05				
Fiveoh-----	0-6	5-15	1.25-1.35	2.0-6.0	0.11-0.13	7.4-8.4	<2	Low-----	0.32	5	3	1-2	
	6-16	8-18	1.35-1.45	2.0-6.0	0.11-0.13	7.9-8.4	<2	Low-----	0.28				
	16-60	8-18	1.35-1.45	2.0-6.0	0.11-0.13	7.9-9.0	2-4	Low-----	0.32				
Urban land.													
160*: Fiveoh, cobbly substratum----	0-3	5-15	1.35-1.45	2.0-6.0	0.12-0.14	7.4-8.4	0-0	Low-----	0.28	5	3	.5-2	
	3-18	5-17	1.35-1.45	2.0-6.0	0.10-0.14	7.9-8.4	0-0	Low-----	0.28				
	18-41	5-17	1.35-1.45	2.0-6.0	0.09-0.13	7.9-9.0	0-4	Low-----	0.28				
	41-60	5-10	1.35-1.45	6.0-20	0.05-0.07	7.9-9.0	0-4	Low-----	0.05				
Joemre-----	0-4	7-15	1.25-1.35	2.0-6.0	0.14-0.16	7.4-8.4	<2	Low-----	0.32	5	3	1-2	
	4-18	10-17	1.30-1.40	2.0-6.0	0.12-0.16	7.9-8.4	<2	Low-----	0.37				
	18-60	10-15	1.30-1.40	2.0-6.0	0.12-0.16	7.9-9.0	<2	Low-----	0.37				
161----- Folavar	0-3	12-17	1.25-1.35	2.0-6.0	0.06-0.08	6.6-7.3	0-2	Low-----	0.10	2	8	1-2	
	3-11	15-20	1.25-1.35	2.0-6.0	0.06-0.08	6.6-7.8	0-2	Low-----	0.10				
	11-60	0-10	1.45-1.55	6.0-20	0.03-0.04	6.6-7.8	0-2	Low-----	0.05				
162*: Folavar-----	0-5	12-17	1.25-1.35	2.0-6.0	0.06-0.08	6.6-7.3	0-2	Low-----	0.10	2	8	1-2	
	5-12	15-20	1.25-1.35	2.0-6.0	0.08-0.10	6.6-7.8	0-2	Low-----	0.17				
	12-60	0-10	1.45-1.55	6.0-20	0.03-0.04	6.6-7.8	0-2	Low-----	0.05				
Borollic Camborthids.													
163----- Forelle	0-2	18-24	1.15-1.25	0.6-2.0	0.15-0.17	7.4-7.8	0-0	Low-----	0.32	5	5	1-2	
	2-22	18-33	1.20-1.30	0.6-2.0	0.18-0.20	7.4-7.8	0-0	Moderate	0.32				
	22-36	18-30	1.25-1.35	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.37				
	36-60	12-18	1.35-1.45	2.0-6.0	0.12-0.14	7.9-9.0	0-2	Low-----	0.37				

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
164*: Forelle-----	0-5	18-24	1.15-1.25	0.6-2.0	0.15-0.17	7.4-7.8	0-0	Low-----	0.32	5	5	1-2
	5-24	18-33	1.20-1.30	0.6-2.0	0.18-0.20	7.4-7.8	0-0	Moderate	0.32			
	24-35	18-30	1.25-1.35	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.37			
	35-60	12-18	1.35-1.45	2.0-6.0	0.12-0.14	7.9-9.0	0-2	Low-----	0.37			
Urban land.												
165*: Forelle-----	0-4	12-18	1.25-1.35	2.0-6.0	0.12-0.14	7.4-7.8	0-0	Low-----	0.32	5	3	1-2
	4-15	18-33	1.20-1.30	0.6-2.0	0.18-0.20	7.4-7.8	0-0	Moderate	0.32			
	15-60	18-30	1.25-1.35	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.37			
Diamondville----	0-1	7-18	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.32	2	3	1-2
	1-17	18-35	1.30-1.40	0.6-2.0	0.16-0.20	7.4-8.4	0-0	Moderate	0.37			
	17-34	10-25	1.30-1.40	0.6-2.0	0.14-0.17	7.9-9.0	2-4	Low-----	0.37			
	34	---	---	---	---	---	---	---	---			
166*: Glendive-----	0-6	15-18	1.30-1.35	0.6-2.0	0.16-0.18	7.4-8.4	0-4	Low-----	0.32	5	4L	.5-1
	6-60	10-18	1.30-1.45	2.0-6.0	0.12-0.14	7.4-8.4	0-4	Low-----	0.28			
Redrob-----	0-5	20-27	1.15-1.25	0.6-2.0	0.16-0.18	7.9-8.4	2-4	Moderate	0.37	2	8	1-3
	5-19	18-25	1.25-1.35	0.6-6.0	0.12-0.17	7.9-8.4	2-4	Low-----	0.28			
	19-24	18-25	1.15-1.25	0.6-2.0	0.09-0.11	7.9-8.4	0-2	Moderate	0.10			
	24-60	2-4	1.50-1.60	>20	0.02-0.04	7.9-8.4	0-2	Low-----	0.02			
Grenoble-----	0-9	10-16	1.25-1.35	2.0-6.0	0.08-0.10	7.4-7.8	0-4	Low-----	0.15	1	6	1-3
	9-60	0-12	1.40-1.50	>20	0.03-0.06	7.4-7.8	0-2	Low-----	0.05			
167*: Grenoble-----	0-9	7-13	1.30-1.40	2.0-6.0	0.06-0.08	6.1-7.8	0-0	Low-----	0.10	1	5	1-3
	9-60	0-12	1.40-1.50	>20	0.03-0.06	6.1-7.8	0-0	Low-----	0.05			
Gerrard-----	0-12	20-25	1.15-1.25	0.6-2.0	0.17-0.18	6.6-7.8	0-2	Low-----	0.32	2	5	1-3
	12-24	5-10	1.45-1.55	>20	0.03-0.04	6.6-7.8	0-2	Low-----	0.05			
	24-60	2-7	1.45-1.55	>20	0.03-0.04	6.6-7.8	0-2	Low-----	0.02			
168----- Greyback	0-9	12-15	1.30-1.40	6.0-20	0.05-0.07	6.6-7.8	0-0	Low-----	0.05	2	8	2-3
	9-16	10-15	1.40-1.50	6.0-20	0.05-0.07	6.6-7.8	0-0	Low-----	0.05			
	16-30	8-15	1.40-1.50	6.0-20	0.05-0.07	7.9-8.4	0-2	Low-----	0.05			
	30-60	5-12	1.55-1.65	6.0-20	0.03-0.06	7.9-8.4	0-2	Low-----	0.05			
169----- Gypla	0-5	10-20	1.20-1.30	0.6-2.0	0.06-0.09	7.4-8.4	>12	Low-----	0.37	5	5	1-2
	5-36	10-18	---	0.6-2.0	0.06-0.09	7.4-8.4	>12	Low-----	0.37			
	36-60	10-18	---	0.6-2.0	0.06-0.09	7.4-8.4	>12	Low-----	0.28			
170*: Gypla-----	0-5	10-20	1.20-1.30	0.6-2.0	0.06-0.09	7.4-8.4	>12	Low-----	0.37	5	5	1-2
	5-36	10-18	---	0.6-2.0	0.06-0.09	7.4-8.4	>12	Low-----	0.37			
	36-60	10-18	---	0.6-2.0	0.06-0.09	7.4-8.4	>12	Low-----	0.28			
Urban land.												
171*: Hanson-----	0-8	8-18	1.25-1.35	2.0-6.0	0.07-0.09	7.4-8.4	0-2	Low-----	0.15	1	6	2-4
	8-25	20-30	1.25-1.35	0.6-2.0	0.08-0.11	7.9-9.0	0-4	Moderate	0.05			
	25-60	30-35	1.30-1.40	0.6-2.0	0.09-0.11	7.9-8.4	0-0	Moderate	0.05			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
171*:												
Quander-----	0-12	20-25	1.20-1.30	0.6-2.0	0.11-0.14	6.6-7.3	<2	Moderate	0.17	5	7	2-4
	12-26	28-35	1.20-1.35	0.6-2.0	0.06-0.08	6.6-7.3	<2	Moderate	0.10			
	26-60	28-35	1.20-1.35	0.6-2.0	0.05-0.07	6.6-7.8	<2	Moderate	0.10			
172*:												
Hapjack-----	0-3	5-15	1.25-1.35	2.0-6.0	0.08-0.10	6.6-7.8	0-0	Low-----	0.15	1	6	2-4
	3-10	15-25	1.30-1.40	0.6-2.0	0.10-0.12	6.6-7.8	0-0	Low-----	0.15			
	10-19	5-10	1.45-1.50	2.0-6.0	0.02-0.03	6.6-7.8	0-0	Low-----	0.02			
	19	---	---	---	---	---	---	-----	---			
Rogert-----	0-8	10-18	1.35-1.45	2.0-6.0	0.06-0.09	6.6-7.3	<2	Low-----	0.15	1	6	2-4
	8-16	10-18	1.40-1.50	2.0-6.0	0.04-0.06	6.6-7.8	<2	Low-----	0.05			
	16	---	---	---	---	---	---	-----	---			
Amesmont-----	0-5	5-15	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.32	2	3	1-3
	5-14	20-30	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	0-0	Moderate	0.37			
	14-20	20-30	1.25-1.35	0.6-2.0	0.08-0.12	6.6-7.8	0-0	Moderate	0.15			
	20-33	20-30	1.25-1.35	0.6-2.0	0.04-0.08	6.6-7.8	0-0	Low-----	0.05			
	33	---	---	---	---	---	---	-----	---			
173*:												
Ipson-----	0-8	10-20	1.30-1.40	2.0-6.0	0.10-0.12	6.6-7.8	<2	Low-----	0.20	1	7	1-3
	8-14	20-30	1.40-1.50	0.6-2.0	0.07-0.09	7.4-7.8	<2	Moderate	0.10			
	14-60	5-15	1.40-1.50	2.0-6.0	0.05-0.07	7.4-7.8	<2	Low-----	0.05			
Evanston-----	0-3	10-18	1.25-1.35	2.0-6.0	0.11-0.13	6.6-7.3	0-0	Low-----	0.28	5	3	2-4
	3-17	25-35	1.25-1.35	0.6-2.0	0.16-0.19	7.4-7.8	0-0	Moderate	0.32			
	17-60	25-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	0-2	Moderate	0.32			
174-----												
Joemre	0-2	7-15	1.25-1.35	2.0-6.0	0.14-0.16	7.4-8.4	<2	Low-----	0.32	5	3	1-2
	2-13	10-17	1.30-1.40	2.0-6.0	0.12-0.16	7.9-8.4	<2	Low-----	0.37			
	13-60	10-15	1.30-1.40	2.0-6.0	0.12-0.16	7.9-9.0	<2	Low-----	0.37			
175-----												
Joemre	0-2	7-15	1.25-1.35	2.0-6.0	0.14-0.16	7.4-8.4	<2	Low-----	0.32	5	3	1-2
	2-16	10-17	1.30-1.40	2.0-6.0	0.12-0.16	7.9-8.4	<2	Low-----	0.37			
	16-60	10-15	1.30-1.40	2.0-6.0	0.12-0.16	7.9-9.0	<2	Low-----	0.37			
176*:												
Kezar-----	0-10	5-15	1.25-1.35	2.0-6.0	0.11-0.13	6.6-7.3	<2	Low-----	0.24	3	3	1-3
	10-20	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.3	<2	Moderate	0.32			
	20-31	20-35	1.25-1.35	0.6-2.0	0.08-0.10	6.6-7.3	<2	Moderate	0.10			
	31	---	---	0.00-0.2	---	---	---	-----	---			
Carbol-----	0-4	15-20	1.25-1.35	2.0-6.0	0.11-0.13	6.6-7.3	0-0	Low-----	0.24	1	3	2-3
	4-13	20-28	1.25-1.35	0.6-2.0	0.09-0.11	6.6-7.3	0-0	Moderate	0.17			
	13-19	20-28	1.25-1.35	0.6-2.0	0.04-0.06	6.6-7.8	0-0	Moderate	0.05			
	19	---	---	0.00-0.2	---	---	---	-----	---			
Rock outcrop.												
177*:												
Kildor-----	0-10	15-25	1.20-1.30	0.6-2.0	0.13-0.15	6.6-7.3	0-0	Moderate	0.24	2	7	1-3
	10-22	35-45	1.10-1.20	0.06-0.2	0.17-0.21	6.6-8.4	0-0	High-----	0.37			
	22-38	35-45	1.10-1.20	0.06-0.2	0.16-0.20	7.9-8.4	0-0	High-----	0.37			
	38	---	---	---	---	---	---	-----	---			
Rock outcrop.												

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct							K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
178*: Kiltabar-----	0-1	28-35	1.05-1.15	0.2-0.6	0.03-0.05	7.9-9.0	>16	Moderate	0.37	5	4	5-1
	1-40	18-35	1.15-1.25	0.2-0.6	0.08-0.10	7.9-9.0	>16	Moderate	0.32			
	40-60	28-35	1.15-1.25	0.2-0.6	0.08-0.10	7.9-9.0	>8	Moderate	0.32			
Tismid-----	0-4	10-18	1.30-1.40	2.0-6.0	0.11-0.13	7.4-7.8	<2	Low-----	0.28	5	3	5-1
	4-7	20-35	1.30-1.40	0.6-2.0	0.14-0.18	7.4-8.4	<2	Moderate	0.32			
	7-20	20-35	1.30-1.40	0.2-0.6	0.16-0.18	>8.4	<2	Moderate	0.37			
	20-60	20-30	1.30-1.40	0.2-0.6	0.08-0.10	7.9-9.0	8-16	Moderate	0.37			
179*: Lakehelen-----	0-17	10-14	1.30-1.40	2.0-6.0	0.12-0.14	6.6-7.3	<2	Low-----	0.20	2	3	.5-1
	17-26	20-30	1.40-1.50	0.6-2.0	0.08-0.10	6.6-7.8	<2	Moderate	0.10			
	26-38	8-12	1.45-1.55	2.0-6.0	0.03-0.05	6.6-7.8	<2	Low-----	0.05			
	38	---	---	---	---	---	---	---	---			
Redfeather-----	0-14	5-15	1.30-1.40	2.0-6.0	0.09-0.11	6.6-7.3	0-0	Low-----	0.10	1	6	.5-1
	14-19	20-30	1.30-1.40	0.6-2.0	0.05-0.07	6.6-7.3	0-0	Moderate	0.05			
	19	---	---	---	---	---	---	---	---			
Amesmont-----	0-5	5-15	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.32	2	3	1-3
	5-13	20-30	1.25-1.35	0.6-2.0	0.08-0.12	6.6-7.8	0-0	Moderate--	0.15			
	13-21	2-15	1.35-1.45	6.0-20	0.03-0.05	6.6-7.8	0-0	Low-----	0.05			
	21	---	---	---	---	---	---	---	---			
180----- Leavitt	0-6	10-15	1.20-1.30	0.6-6.0	0.11-0.14	6.6-7.3	0-0	Low-----	0.20	5	5	1-3
	6-15	20-27	1.20-1.30	0.6-2.0	0.14-0.16	6.6-7.3	0-0	Moderate	0.24			
	15-22	30-35	1.20-1.30	0.6-2.0	0.12-0.14	7.4-7.8	0-0	Moderate	0.10			
	22-60	5-10	1.30-1.40	2.0-6.0	0.06-0.08	7.9-8.4	0-2	Low-----	0.05			
181*: Leavitt-----	0-4	10-15	1.15-1.25	0.6-2.0	0.12-0.14	6.6-7.3	0-0	Low-----	0.17	5	7	2-3
	4-17	28-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.3	0-0	Moderate	0.17			
	17-26	28-35	1.20-1.30	0.6-2.0	0.12-0.14	7.4-8.4	0-0	Moderate	0.15			
	26-60	50-60	1.20-1.30	0.06-0.2	0.14-0.16	7.9-8.4	0-2	High-----	0.28			
Granile-----	0-4	10-20	1.25-1.35	2.0-6.0	0.07-0.08	6.6-7.3	0-0	Low-----	0.15	4	7	.5-2
	4-60	25-35	1.25-1.35	0.6-2.0	0.05-0.07	6.6-7.3	0-0	Moderate	0.15			
182*: Leavitt-----	0-10	15-20	1.20-1.30	0.6-2.0	0.16-0.18	6.6-7.3	0-0	Low-----	0.32	5	5	1-3
	10-26	25-35	1.10-1.20	0.6-2.0	0.19-0.21	7.4-7.8	0-0	Moderate	0.37			
	26-60	20-30	1.10-1.20	0.6-2.0	0.16-0.20	7.9-8.4	0-2	Moderate	0.37			
Hanson-----	0-8	8-18	1.25-1.35	2.0-6.0	0.07-0.09	7.4-8.4	0-2	Low-----	0.15	1	6	2-4
	8-60	20-30	1.25-1.35	0.6-2.0	0.08-0.11	7.9-9.0	0-4	Moderate	0.05			
183*: Leavitt-----	0-5	15-20	1.20-1.30	0.6-2.0	0.16-0.18	6.6-7.3	0-0	Low-----	0.32	5	5	1-3
	5-20	25-35	1.10-1.20	0.6-2.0	0.19-0.21	7.4-7.8	0-0	Moderate	0.37			
	20-60	20-30	1.10-1.20	0.6-2.0	0.16-0.20	7.9-8.4	0-2	Moderate	0.37			
Quander-----	0-10	20-25	1.20-1.30	0.6-2.0	0.11-0.14	6.6-7.3	<2	Moderate	0.17	5	7	2-4
	10-30	28-35	1.20-1.35	0.6-2.0	0.06-0.08	6.6-7.3	<2	Moderate	0.10			
	30-45	28-35	1.20-1.35	0.6-2.0	0.07-0.09	6.6-7.3	<2	Moderate	0.10			
	45-60	28-35	1.20-1.35	0.6-2.0	0.05-0.07	6.6-7.8	<2	Moderate	0.10			
184----- Luhon	0-8	16-25	1.10-1.20	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.37	5	4L	1-2
	8-60	20-30	1.10-1.20	0.6-2.0	0.19-0.21	8.5-9.0	2-4	Moderate	0.37			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
185*: Luvard-----	0-2	16-22	1.20-1.65	0.6-6.0	0.10-0.16	7.4-8.4	0-4	Low-----	0.32	3	4L	1-2
	2-12	20-30	1.20-1.40	0.6-2.0	0.16-0.18	7.4-8.4	0-4	Moderate	0.32			
	12-32	20-30	1.20-1.35	0.6-2.0	0.16-0.18	7.9-9.0	2-8	Moderate	0.32			
	32-60	---	---	---	0.10-0.14	7.4-9.0	4-16	Moderate	0.37			
Stylite-----	0-2	10-20	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.28	5	3	1-2
	2-14	20-35	1.25-1.35	0.6-2.0	0.16-0.19	7.4-8.4	0-2	Moderate	0.32			
	14-30	18-30	1.25-1.35	0.6-2.0	0.17-0.21	7.9-9.0	0-4	Moderate	0.32			
	30-60	18-30	---	---	0.06-0.10	7.4-8.4	4-8	-----	-----			
Diamonkit-----	0-1	16-19	1.25-1.35	2.0-6.0	0.10-0.12	7.4-8.4	0-2	Low-----	0.24	3	3	1-2
	1-22	24-32	1.25-1.35	0.6-2.0	0.16-0.17	7.9-9.0	0-2	Moderate	0.37			
	22-35	20-35	---	0.6-2.0	0.12-0.15	7.9-9.0	0-8	Moderate	0.37			
	35	---	---	---	---	---	---	-----	-----			
186*: Lymanson loam---	0-7	18-27	1.10-1.20	0.6-2.0	0.16-0.18	6.6-7.8	0-0	Low-----	0.32	2	5	2-4
	7-16	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-7.8	0-0	Moderate	0.37			
	16-35	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	0-4	Moderate	0.37			
	35	---	---	---	---	---	---	-----	-----			
Lymanson cobbly loam-----	0-7	15-25	1.10-1.20	0.6-2.0	0.14-0.16	6.6-7.8	0-0	Moderate	0.20	2	7	2-4
	7-17	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-7.8	0-0	Moderate	0.37			
	17-31	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	0-4	Moderate	0.37			
	31	---	---	---	---	---	---	-----	-----			
187----- Manada	0-2	10-15	1.35-1.45	2.0-6.0	0.11-0.13	7.9-8.4	0-2	Low-----	0.28	5	3	2-3
	2-9	10-20	1.30-1.40	0.6-2.0	0.14-0.17	7.9-8.4	0-2	Low-----	0.32			
	9-27	10-15	1.35-1.45	2.0-6.0	0.10-0.12	7.9-9.0	0-2	Low-----	0.17			
	27-35	10-15	1.30-1.40	2.0-6.0	0.13-0.15	7.9-9.0	0-4	Low-----	0.20			
	35-60	10-15	1.35-1.45	2.0-6.0	0.10-0.12	7.9-9.0	0-4	Low-----	0.17			
188----- McFadden	0-5	10-17	1.30-1.40	2.0-6.0	0.10-0.12	7.9-8.4	0-2	Low-----	0.17	3	6	1-2
	5-18	10-17	1.30-1.40	2.0-6.0	0.08-0.11	7.9-9.0	0-2	Low-----	0.15			
	18-60	10-17	1.25-1.35	2.0-6.0	0.12-0.15	7.9-9.0	2-4	Low-----	0.28			
189*: Miracle-----	0-4	15-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	2-4
	4-28	20-25	1.25-1.35	0.6-2.0	0.13-0.15	6.6-7.8	<2	Low-----	0.37			
	28-33	15-20	1.35-1.45	2.0-6.0	0.10-0.12	6.6-7.8	<2	Low-----	0.24			
	33	---	---	0.00-0.2	---	---	---	-----	-----			
Cheadle-----	0-4	10-18	1.30-1.35	2.0-6.0	0.12-0.14	6.6-7.3	0-0	Low-----	0.24	1	3	1-3
	4-9	10-18	1.30-1.35	2.0-6.0	0.10-0.12	7.4-7.8	0-0	Low-----	0.17			
	9-16	10-18	1.40-1.45	2.0-6.0	0.07-0.09	7.4-7.8	0-0	Low-----	0.10			
	16	---	---	---	---	---	---	-----	-----			
190*: Moyerson-----	0-4	35-40	1.05-1.15	0.06-0.2	0.14-0.17	7.4-8.4	2-4	High-----	0.32	2	4L	1-2
	4-17	35-45	1.25-1.30	0.06-0.2	0.14-0.17	7.9-9.0	2-4	High-----	0.32			
	17	---	---	---	---	---	---	-----	-----			
Kemmerer-----	0-2	27-35	1.15-1.25	0.2-0.6	0.20-0.22	6.6-7.8	<2	Moderate	0.32	2	6	.5-1
	2-15	35-45	1.25-1.35	0.06-0.2	0.19-0.21	7.4-8.4	<2	High-----	0.32			
	15-34	35-45	1.20-1.30	0.06-0.2	0.17-0.19	7.9-8.4	<4	High-----	0.37			
	34	---	---	---	---	---	---	-----	-----			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
191*: Nathale-----	0-4	8-15	1.25-1.35	2.0-6.0	0.08-0.11	7.4-8.4	<2	Low-----	0.15	1	6	2-3
	4-11	18-25	1.30-1.40	2.0-6.0	0.05-0.09	7.4-8.4	<2	Low-----	0.10			
	11-24	10-20	1.35-1.45	2.0-6.0	0.03-0.05	7.9-8.4	<2	Low-----	0.05			
	24	---	---	---	---	---	---	-----	---			
Passcreek, cobble subsoil-----	0-7	12-20	1.20-1.30	0.6-2.0	0.14-0.17	7.4-8.4	0-0	Low-----	0.32	1	3	2-3
	7-16	20-26	1.25-1.35	0.6-2.0	0.14-0.16	7.4-8.4	0-0	Moderate	0.37			
	16-31	15-20	1.35-1.45	2.0-6.0	0.04-0.08	7.9-8.4	0-0	Low-----	0.05			
	31	---	---	---	---	---	---	-----	---			
Rock outcrop.												
192----- Pahlow	0-3	10-17	1.25-1.35	2.0-6.0	0.07-0.10	7.4-8.4	0-2	Low-----	0.17	3	6	1-2
	3-15	10-18	1.35-1.45	2.0-6.0	0.06-0.09	7.4-8.4	0-4	Low-----	0.15			
	15-60	3-10	1.45-1.55	6.0-20	0.03-0.04	7.9-9.0	2-4	Low-----	0.05			
193*: Pilotpeak-----	0-4	6-16	1.25-1.35	2.0-6.0	0.09-0.11	7.9-8.4	2-4	Low-----	0.17	1	6	1-2
	4-14	5-17	1.35-1.45	2.0-6.0	0.05-0.08	7.9-9.0	2-4	Low-----	0.10			
	14-18	5-17	1.35-1.45	2.0-6.0	0.04-0.06	7.9-9.0	2-4	Low-----	0.02			
	18	---	---	---	---	---	---	-----	---			
Canwall-----	0-3	8-14	1.25-1.35	2.0-6.0	0.11-0.14	7.4-8.4	0-2	Low-----	0.32	2	3	1-2
	3-12	10-18	1.35-1.45	2.0-6.0	0.11-0.16	7.4-8.4	0-2	Low-----	0.37			
	12-24	10-18	1.35-1.45	2.0-6.0	0.02-0.05	7.9-8.4	0-2	Low-----	0.05			
	24	---	---	---	---	---	---	-----	---			
194----- Pinelli	0-6	28-35	1.10-1.20	0.6-2.0	0.19-0.21	7.4-8.4	0-0	Moderate	0.37	5	6	1-2
	6-28	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	0-0	High-----	0.37			
	28-60	30-40	1.30-1.40	0.2-0.6	0.19-0.21	7.9-8.4	0-4	Moderate	0.37			
195*. Pits, mine												
196*: Poin-----	0-6	10-15	1.30-1.40	2.0-6.0	0.06-0.08	6.6-7.3	0-0	Low-----	0.10	1	8	2-3
	6-15	10-15	1.30-1.40	2.0-6.0	0.04-0.06	6.6-7.3	0-0	Low-----	0.05			
	15	---	---	---	---	---	---	-----	---			
Bowen-----	0-8	10-15	1.30-1.40	2.0-6.0	0.09-0.10	6.6-7.3	0-0	Low-----	0.15	1	7	1-3
	8-22	18-25	1.25-1.35	0.6-2.0	0.05-0.07	6.6-7.8	0-0	Moderate	0.10			
	22-31	10-15	1.35-1.45	2.0-6.0	0.05-0.07	7.4-7.8	0-0	Low-----	0.10			
	31	---	---	---	---	---	---	-----	---			
Rock outcrop.												
197*: Poposhia-----	0-2	15-20	1.40-1.50	2.0-6.0	0.13-0.15	7.4-8.4	0-2	Low-----	0.32	5	3	1-2
	2-60	18-30	1.30-1.40	0.6-2.0	0.16-0.19	7.9-9.0	0-4	Moderate	0.37			
Blazon-----	0-2	18-27	1.15-1.25	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.32	1	4L	.5-1
	2-12	27-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	0-4	Moderate	0.37			
	12	---	---	---	---	---	---	-----	---			
198*: Poposhia-----	0-2	18-27	1.20-1.40	0.6-2.0	0.16-0.18	7.4-8.4	0-2	Low-----	0.32	5	4L	1-2
	2-60	18-30	1.30-1.40	0.6-2.0	0.16-0.19	7.9-9.0	0-4	Moderate	0.37			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth		Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
	In	Pct							K	T		
198*:												
Forelle-----	0-2	12-18	1.25-1.35	2.0-6.0	0.12-0.14	7.4-7.8	0-0	Low-----	0.32	5	3	1-2
	2-17	18-33	1.20-1.30	0.6-2.0	0.18-0.20	7.4-7.8	0-0	Moderate	0.32			
	17-60	18-30	1.25-1.35	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.37			
199*:												
Poposhia-----	0-5	18-27	1.20-1.40	0.6-2.0	0.16-0.18	7.4-8.4	0-2	Low-----	0.32	5	4L	1-2
	5-60	18-30	1.30-1.40	0.6-2.0	0.16-0.19	7.9-9.0	0-4	Moderate	0.37			
Chaperton-----	0-3	28-35	1.25-1.35	0.6-2.0	0.18-0.20	7.4-7.8	<2	Moderate	0.32	2	6	1-2
	3-13	28-35	1.25-1.35	0.6-2.0	0.18-0.20	7.4-7.8	<2	Moderate	0.32			
	13-25	30-35	1.25-1.35	0.6-2.0	0.18-0.20	7.9-9.0	<2	Moderate	0.32			
	25	---	---	---	---	---	---	---	---			
200*:												
Rainbolt-----	0-2	13-19	1.20-1.30	2.0-6.0	0.10-0.12	7.4-8.4	<2	Low-----	0.15	2	5	2-3
	2-16	20-28	1.10-1.20	0.6-2.0	0.12-0.14	7.9-9.0	2-4	Moderate	0.20			
	16-28	20-25	1.20-1.30	0.6-2.0	0.14-0.15	7.9-9.0	2-4	Moderate	0.28			
	28	---	---	---	---	---	---	---	---			
Morset-----	0-2	15-20	1.20-1.35	2.0-6.0	0.09-0.11	7.4-7.8	0-0	Low-----	0.15	5	5	1-2
	2-13	20-35	1.25-1.40	0.6-2.0	0.10-0.13	7.4-8.4	0-2	Moderate	0.17			
	13-60	15-25	1.25-1.35	0.6-2.0	0.10-0.13	7.9-9.0	2-4	Moderate	0.17			
201*:												
Redfeather-----	0-14	10-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.3	0-0	Low-----	0.28	1	3	.5-1
	14-19	20-30	1.30-1.40	0.6-2.0	0.05-0.07	6.6-7.3	0-0	Moderate	0.05			
	19	---	---	---	---	---	---	---	---			
Lakehelen-----	0-18	10-14	1.30-1.40	2.0-6.0	0.12-0.14	6.6-7.3	<2	Low-----	0.20	2	3	.5-1
	18-38	20-30	1.40-1.50	0.6-2.0	0.08-0.10	6.6-7.8	<2	Moderate	0.10			
	38	---	---	---	---	---	---	---	---			
Rogert-----	0-4	10-18	1.35-1.45	2.0-6.0	0.06-0.09	6.6-7.3	<2	Low-----	0.15	1	6	2-4
	4-18	10-18	1.40-1.50	2.0-6.0	0.04-0.06	6.6-7.8	<2	Low-----	0.05			
	18	---	---	---	---	---	---	---	---			
202-----												
Redrob	0-23	20-27	1.20-1.35	0.6-2.0	0.15-0.17	7.4-9.0	2-8	Low-----	0.28	2	5	1-3
	23-33	25-35	1.30-1.45	0.6-2.0	0.15-0.17	7.9-8.4	0-8	Moderate	0.32			
	33-60	2-10	1.35-1.50	>20	0.03-0.04	7.4-8.4	0-2	Low-----	0.05			
203*:												
Redrob, frequently flooded-----	0-14	20-25	1.20-1.35	0.6-2.0	0.17-0.18	7.9-8.4	2-8	Low-----	0.28	2	5	1-3
	14-23	18-27	1.30-1.45	0.6-2.0	0.14-0.17	7.9-8.4	2-8	Low-----	0.28			
	23-60	5-10	1.45-1.60	>20	0.03-0.04	7.9-8.4	0-2	Low-----	0.05			
Grenoble-----	0-5	10-16	1.25-1.35	2.0-6.0	0.08-0.10	7.4-7.8	0-4	Low-----	0.15	1	6	1-3
	5-60	0-12	1.40-1.50	>20	0.03-0.06	7.4-7.8	0-2	Low-----	0.05			
Redrob-----	0-5	15-19	1.25-1.40	2.0-6.0	0.13-0.15	7.9-9.0	2-8	Low-----	0.28	2	3	1-3
	5-21	18-27	1.25-1.40	0.6-2.0	0.16-0.18	7.9-9.0	2-8	Low-----	0.28			
	21-38	25-35	1.30-1.45	0.6-2.0	0.15-0.17	7.9-8.4	0-8	Moderate	0.32			
	38-60	2-10	1.35-1.50	>20	0.03-0.04	7.4-8.4	0-2	Low-----	0.05			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
204*: Redrob, frequently flooded-----	0-23	20-25	1.20-1.35	0.6-2.0	0.17-0.18	7.9-8.4	2-8	Low-----	0.28	2	5	1-3
	23-35	18-27	1.30-1.40	0.6-2.0	0.15-0.17	7.9-8.4	2-8	Low-----	0.32			
	35-60	5-10	1.45-1.60	>20	0.03-0.04	7.9-8.4	0-2	Low-----	0.05			
Redrob-----	0-18	20-27	1.20-1.35	0.6-2.0	0.15-0.17	7.4-9.0	2-8	Low-----	0.28	2	5	1-3
	18-25	25-35	1.30-1.45	0.6-2.0	0.15-0.17	7.9-8.4	0-8	Moderate	0.32			
	25-60	2-10	1.35-1.50	>20	0.03-0.04	7.4-8.4	0-2	Low-----	0.05			
205*: Redrob, frequently flooded-----	0-14	20-25	1.20-1.35	0.6-2.0	0.17-0.18	7.9-8.4	2-8	Low-----	0.28	2	5	1-3
	14-23	18-27	1.30-1.45	0.6-2.0	0.14-0.17	7.9-8.4	2-8	Low-----	0.28			
	23-60	5-10	1.45-1.60	>20	0.03-0.04	7.9-8.4	0-2	Low-----	0.05			
Redrob-----	0-5	15-19	1.25-1.40	2.0-6.0	0.13-0.15	7.9-9.0	2-8	Low-----	0.28	2	3	1-3
	5-20	18-27	1.25-1.40	0.6-2.0	0.16-0.18	7.9-9.0	2-8	Low-----	0.28			
	20-38	25-35	1.30-1.45	0.6-2.0	0.15-0.17	7.9-8.4	0-8	Moderate	0.32			
	38-60	2-10	1.35-1.50	>20	0.03-0.04	7.4-8.4	0-2	Low-----	0.05			
Urban land.												
206*: Rentsac-----	0-3	10-18	1.25-1.35	2.0-6.0	0.08-0.10	6.6-7.8	<2	Low-----	0.15	1	6	.5-1
	3-6	10-18	1.30-1.40	2.0-6.0	0.04-0.07	6.6-7.8	<2	Low-----	0.10			
	6-14	10-18	1.30-1.40	2.0-6.0	0.01-0.03	6.6-7.8	<2	Low-----	0.05			
	14	---	---	---	---	---	---	-----	---			
Wycolo-----	0-7	8-15	1.25-1.35	0.6-2.0	0.11-0.14	7.4-8.4	0-0	Low-----	0.32	2	3	1-2
	7-16	20-30	1.25-1.35	0.6-2.0	0.14-0.16	7.4-8.4	0-0	Moderate	0.32			
	16-23	15-25	1.30-1.40	0.6-2.0	0.12-0.15	7.9-8.4	0-0	Low-----	0.32			
	23	---	---	---	---	---	---	-----	---			
207*: Renvers-----	0-1	8-18	1.20-1.30	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.10	1	8	.5-1
	1-4	8-18	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.15			
	4	---	---	---	---	---	---	-----	---			
Chalkhill-----	0-2	5-15	1.40-1.50	2.0-6.0	0.10-0.12	6.6-7.8	<2	Low-----	0.20	1	3	1-2
	2-11	20-35	1.40-1.50	0.6-2.0	0.12-0.14	6.6-7.8	<2	Moderate	0.28			
	11-14	20-35	1.40-1.50	0.6-2.0	0.03-0.05	6.6-7.8	<2	Moderate	0.05			
	14	---	---	---	---	---	---	-----	---			
208*: Rimton-----	0-4	12-17	1.20-1.30	0.6-2.0	0.15-0.17	6.6-7.8	0-0	Low-----	0.32	2	5	1-3
	4-15	15-20	1.35-1.45	0.6-2.0	0.13-0.15	6.6-7.8	0-0	Low-----	0.24			
	15-32	25-35	1.25-1.35	0.6-2.0	0.12-0.15	6.6-7.8	0-0	Moderate	0.32			
	32-39	17-25	1.30-1.40	0.6-2.0	0.06-0.08	7.4-7.8	0-0	Low-----	0.05			
	39	---	---	---	---	---	---	-----	---			
Passcreek, cobble subsoil-----	0-7	12-20	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	0-0	Low-----	0.28	1	3	2-3
	7-17	18-26	1.25-1.35	0.6-2.0	0.10-0.14	7.4-8.4	0-0	Low-----	0.17			
	17-26	15-20	1.35-1.45	2.0-6.0	0.04-0.08	7.9-8.4	0-0	Low-----	0.05			
	26	---	---	---	---	---	---	-----	---			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
208*: Miracle-----	0-6	15-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	2-4
	6-31	20-25	1.25-1.35	0.6-2.0	0.13-0.15	6.6-7.8	<2	Low-----	0.37			
	31	---	---	0.00-0.2	---	---	---	-----	---			
209*: Riverwash												
210*: Rock outcrop.												
Bonjea-----	0-3	10-20	1.25-1.35	0.6-2.0	0.11-0.14	6.6-7.8	0-0	Low-----	0.32	1	3	2-4
	3-13	20-30	1.25-1.40	0.6-2.0	0.12-0.14	6.6-7.8	0-0	Moderate	0.28			
	13-17	20-30	1.25-1.40	0.6-2.0	0.07-0.12	6.6-7.8	0-0	Moderate	0.17			
	17	---	---	---	---	---	---	-----	---			
211*: Rock outcrop.												
Bruja-----	0-2	6-17	1.25-1.35	2.0-6.0	0.05-0.07	7.4-8.4	0-2	Low-----	0.05	1	8	1-2
	2-23	6-17	1.35-1.45	2.0-6.0	0.05-0.07	7.9-8.4	0-2	Low-----	0.05			
	23	---	---	---	---	---	---	-----	---			
Byrnie-----	0-2	9-15	1.25-1.35	2.0-6.0	0.10-0.12	7.9-8.4	0-2	Low-----	0.20	1	6	.5-1
	2-12	9-15	1.35-1.45	2.0-6.0	0.08-0.10	7.9-8.4	0-4	Low-----	0.15			
	12	---	---	---	---	---	---	-----	---			
212*: Rock outcrop.												
Cathedral-----	0-2	5-18	1.20-1.30	6.0-20	0.05-0.07	6.6-7.3	0-0	Low-----	0.05	1	8	2-4
	2-13	5-18	1.20-1.25	6.0-20	0.05-0.07	6.6-7.3	0-0	Low-----	0.05			
	13	---	---	---	---	---	---	-----	---			
213*: Rock outcrop.												
Cathedral-----	0-2	5-18	1.20-1.25	6.0-20	0.05-0.07	6.6-7.3	0-0	Low-----	0.05	1	8	2-4
	2-10	5-18	1.20-1.25	6.0-20	0.05-0.07	6.6-7.3	0-0	Low-----	0.05			
	10	---	---	---	---	---	---	-----	---			
Alderon-----	0-2	12-19	1.25-1.35	2.0-6.0	0.11-0.12	6.6-7.3	0-2	Low-----	0.24	2	3	1-3
	2-7	20-35	1.25-1.35	0.6-2.0	0.13-0.15	6.6-7.3	0-2	Moderate	0.32			
	7-26	20-35	1.25-1.35	0.6-2.0	0.10-0.12	6.6-7.3	0-2	Moderate	0.15			
	26-39	10-18	1.35-1.45	2.0-6.0	0.06-0.07	6.6-7.8	0-2	Low-----	0.10			
	39	---	---	---	---	---	---	-----	---			
214*: Rock outcrop.												
Pilotpeak-----	0-4	6-16	1.25-1.35	2.0-6.0	0.07-0.10	7.9-8.4	2-4	Low-----	0.15	1	6	1-2
	4-11	5-17	1.35-1.45	2.0-6.0	0.05-0.08	7.9-9.0	2-4	Low-----	0.10			
	11	---	---	---	---	---	---	-----	---			
215*: Rock outcrop.												
Rogert-----	0-4	10-18	1.35-1.45	2.0-6.0	0.06-0.09	6.6-7.3	<2	Low-----	0.15	1	6	2-4
	4-11	10-18	1.40-1.50	2.0-6.0	0.04-0.06	6.6-7.8	<2	Low-----	0.05			
	11	---	---	---	---	---	---	-----	---			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
216----- Rock River	0-3	16-18	1.25-1.35	2.0-6.0	0.10-0.12	6.6-7.8	0-0	Low-----	0.24	5	3	1-2
	3-17	20-30	1.25-1.35	0.6-2.0	0.13-0.15	6.6-7.8	0-0	Moderate	0.32			
	17-60	10-18	1.35-1.45	2.0-6.0	0.12-0.14	7.4-9.0	2-4	Low-----	0.37			
217----- Rock River	0-3	17-23	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	0-0	Moderate	0.32	5	5	1-2
	3-21	20-30	1.25-1.35	0.6-2.0	0.13-0.15	6.6-7.8	0-0	Moderate	0.32			
	21-60	10-18	1.35-1.45	2.0-6.0	0.12-0.14	7.4-9.0	2-4	Low-----	0.37			
218*: Rock River-----	0-3	16-18	1.25-1.35	2.0-6.0	0.10-0.12	6.6-7.8	0-0	Low-----	0.24	5	3	1-2
	3-17	20-30	1.25-1.35	0.6-2.0	0.13-0.15	6.6-7.8	0-0	Moderate	0.32			
	17-60	10-18	1.35-1.45	2.0-6.0	0.12-0.14	7.4-9.0	2-4	Low-----	0.37			
Urban land.												
219*: Rogert-----	0-3	10-18	1.35-1.45	2.0-6.0	0.06-0.09	6.6-7.3	<2	Low-----	0.15	1	6	2-4
	3-16	10-18	1.40-1.50	2.0-6.0	0.04-0.06	6.6-7.8	<2	Low-----	0.05			
	16	---	---	---	---	---	---	---	---			
Lakshelen-----	0-15	12-16	1.40-1.50	2.0-6.0	0.10-0.12	6.6-7.3	<2	Low-----	0.20	2	3	.5-1
	15-27	20-30	1.40-1.50	0.6-2.0	0.08-0.10	6.6-7.8	<2	Moderate	0.10			
	27	---	---	---	---	---	---	---	---			
Rock outcrop.												
220*: Rogert-----	0-4	10-18	1.35-1.45	2.0-6.0	0.06-0.09	6.6-7.3	<2	Low-----	0.15	1	6	2-4
	4-14	10-18	1.40-1.50	2.0-6.0	0.04-0.06	6.6-7.8	<2	Low-----	0.05			
	14	---	---	---	---	---	---	---	---			
Rock outcrop.												
Amesmont-----	0-4	5-15	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.32	2	3	1-3
	4-18	20-30	1.25-1.35	0.6-2.0	0.08-0.12	6.6-7.8	0-0	Moderate	0.15			
	18-36	2-15	1.35-1.45	6.0-20	0.03-0.05	6.6-7.8	0-0	Low-----	0.05			
36	---	---	---	---	---	---	---	---				
221----- Rohonda	0-3	6-12	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	<1
	3-15	10-17	1.30-1.45	2.0-6.0	0.12-0.16	7.4-8.4	<2	Low-----	0.32			
	15-31	8-14	1.35-1.45	2.0-6.0	0.11-0.14	7.9-8.4	<2	Low-----	0.32			
31	---	---	---	---	---	---	---	---				
222*: Rohonda-----	0-6	6-12	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	<1
	6-21	10-17	1.30-1.45	2.0-6.0	0.12-0.16	7.4-8.4	<2	Low-----	0.32			
	21-38	8-14	1.35-1.45	2.0-6.0	0.11-0.14	7.9-8.4	<2	Low-----	0.32			
38	---	---	---	---	---	---	---	---				
Tieside-----	0-5	5-15	1.25-1.35	2.0-6.0	0.05-0.07	7.4-8.4	0-2	Low-----	0.10	1	6	1-2
	5-13	5-15	1.35-1.45	2.0-6.0	0.10-0.15	7.9-8.4	0-2	Low-----	0.37			
	13	---	---	---	---	---	---	---	---			
223*: Rohonda-----	0-7	6-12	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	<1
	7-21	10-17	1.30-1.45	2.0-6.0	0.12-0.16	7.4-8.4	<2	Low-----	0.32			
	21-33	8-14	1.35-1.45	2.0-6.0	0.11-0.14	7.9-8.4	<2	Low-----	0.32			
33	---	---	---	---	---	---	---	---				

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
223*: Cheadle-----	0-7	8-15	1.25-1.35	2.0-6.0	0.07-0.09	6.6-7.3	0-0	Low-----	0.10	1	8	1-2
	7-12	5-10	1.40-1.50	2.0-6.0	0.04-0.06	7.4-7.8	0-0	Low-----	0.05			
	12	---	---	---	---	---	---	-----	---			
Rock outcrop.												
224----- Ryark	0-3	3-8	1.35-1.45	6.0-20	0.07-0.09	6.6-7.8	<2	Low-----	0.15	5	2	1-2
	3-36	10-18	1.35-1.50	2.0-6.0	0.11-0.13	6.6-7.8	<2	Low-----	0.24			
	36-60	3-12	1.45-1.60	6.0-20	0.06-0.08	7.4-7.8	<2	Low-----	0.17			
225*: Shirleybasin----	0-2	20-27	1.25-1.35	0.6-2.0	0.18-0.20	6.6-7.3	<2	Moderate	0.32	5	6	1-2
	2-8	30-40	1.25-1.35	0.6-2.0	0.16-0.19	6.6-7.8	<2	High-----	0.37			
	8-27	35-45	1.20-1.30	0.06-0.2	0.16-0.19	7.4-8.4	<2	High-----	0.37			
	27-52	20-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	2-4	Moderate	0.37			
	52-60	20-30	1.25-1.35	0.6-2.0	0.13-0.14	7.9-8.4	<2	Moderate	0.24			
Twocabin-----	0-4	15-25	1.20-1.30	0.6-2.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.24	1	7	.5-1
	4-11	20-35	1.25-1.30	0.6-2.0	0.07-0.09	6.6-7.8	0-0	Moderate	0.10			
	11-20	18-30	1.30-1.40	0.6-2.0	0.07-0.09	7.9-8.4	0-2	Moderate	0.10			
	20-60	15-30	1.30-1.40	0.6-2.0	0.16-0.18	7.9-9.0	0-4	Low-----	0.28			
Lahtida-----	0-2	15-25	1.20-1.30	0.2-0.6	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2
	2-15	35-50	1.20-1.30	0.06-0.2	0.19-0.21	7.4-8.4	<2	High-----	0.32			
	15-28	20-35	1.20-1.30	0.2-0.6	0.16-0.18	7.9-9.0	<4	Moderate	0.32			
	28	---	---	---	---	---	---	-----	---			
226----- Silas	0-22	17-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	5	5	3-4
	22-32	20-30	1.25-1.35	0.6-2.0	0.10-0.14	6.6-7.8	<2	Moderate	0.28			
	32-60	20-30	1.25-1.35	0.6-2.0	0.15-0.20	6.6-7.8	<2	Moderate	0.37			
227*: Silas, gravelly substratum----	0-22	17-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	5	5	3-4
	22-42	20-30	1.25-1.35	0.6-2.0	0.10-0.14	6.6-7.8	<2	Moderate	0.24			
	42-60	5-17	1.40-1.50	2.0-6.0	0.05-0.10	6.6-7.8	<2	Low-----	0.10			
Vensora-----	0-17	16-21	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	0-0	Low-----	0.32	2	5	2-4
	17-30	18-27	1.25-1.35	0.6-2.0	0.15-0.17	6.6-7.8	0-0	Moderate	0.37			
	30-60	15-25	1.25-1.35	0.6-2.0	0.07-0.10	6.6-7.8	0-0	Moderate	0.10			
228----- Stunner	0-3	15-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.32	5	3	1-2
	3-12	22-34	1.25-1.35	0.6-2.0	0.17-0.20	7.4-7.8	0-0	Moderate	0.37			
	12-26	20-32	1.25-1.35	0.6-2.0	0.15-0.17	7.9-9.0	2-4	Moderate	0.37			
	26-60	14-18	1.35-1.45	2.0-6.0	0.12-0.14	7.9-9.0	2-4	Low-----	0.37			
229*: Stunner-----	0-3	15-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.32	5	3	1-2
	3-13	22-34	1.25-1.35	0.6-2.0	0.17-0.20	7.4-7.8	0-0	Moderate	0.37			
	13-25	20-32	1.25-1.35	0.6-2.0	0.15-0.17	7.9-9.0	2-4	Moderate	0.37			
	25-60	18-30	1.25-1.35	0.6-2.0	0.15-0.17	7.9-9.0	2-4	Moderate	0.37			
Borollic Camborthids.												

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
230*: Stunner-----	0-1	15-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.32	5	3	1-2
	1-10	22-34	1.25-1.35	0.6-2.0	0.17-0.20	7.4-7.8	0-0	Moderate	0.37			
	10-32	20-32	1.25-1.35	0.6-2.0	0.15-0.17	7.9-9.0	2-4	Moderate	0.37			
	32-60	18-30	1.25-1.35	0.6-2.0	0.15-0.17	7.9-9.0	2-4	Moderate	0.37			
Tisworth-----	0-4	8-20	1.25-1.35	2.0-6.0	0.08-0.11	7.4-9.0	0-4	Low-----	0.32	5	3	1-2
	4-19	25-35	1.20-1.30	0.2-0.6	0.08-0.10	8.5-9.6	0-4	Moderate	0.37			
	19-60	18-30	1.25-1.35	0.6-2.0	0.08-0.10	7.9-9.6	4-16	Moderate	0.37			
Blazon-----	0-2	18-27	1.15-1.25	0.6-2.0	0.18-0.20	7.9-9.0	0-2	Moderate	0.32	1	4L	.5-1
	2-12	27-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	0-4	Moderate	0.37			
	12	---	---	---	---	---	---	---	---			
231*: Stunner-----	0-3	15-18	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	0-0	Low-----	0.32	5	3	1-2
	3-12	22-34	1.25-1.35	0.6-2.0	0.17-0.20	7.4-7.8	0-0	Moderate	0.37			
	12-26	20-32	1.25-1.35	0.6-2.0	0.15-0.17	7.9-9.0	2-4	Moderate	0.37			
	26-60	14-18	1.35-1.45	2.0-6.0	0.12-0.14	7.9-9.0	2-4	Low-----	0.37			
Urban land.												
232----- Teeler	0-6	10-20	1.25-1.35	2.0-6.0	0.06-0.08	6.6-7.8	0-0	Low-----	0.10	5	8	2-4
	6-14	20-25	1.30-1.40	0.6-2.0	0.07-0.09	7.4-7.8	0-0	Low-----	0.10			
	14-60	10-18	1.35-1.45	2.0-6.0	0.05-0.07	7.9-9.0	0-4	Low-----	0.10			
233*: Thiel-----	0-3	5-10	1.35-1.45	2.0-6.0	0.07-0.08	7.4-7.8	0-0	Low-----	0.15	1	7	1-3
	3-12	20-30	1.30-1.40	0.6-2.0	0.06-0.08	7.4-8.4	0-0	Moderate	0.10			
	12-19	5-15	1.35-1.45	2.0-6.0	0.05-0.07	7.9-9.0	0-0	Low-----	0.10			
	19-60	3-10	1.45-1.55	6.0-20	0.03-0.04	7.9-9.0	0-2	Low-----	0.05			
Lymanson-----	0-3	15-20	1.25-1.35	2.0-6.0	0.11-0.13	7.4-8.4	0-0	Low-----	0.28	2	3	2-4
	3-10	15-20	1.35-1.45	2.0-6.0	0.07-0.09	7.4-8.4	0-0	Low-----	0.15			
	10-18	20-27	1.25-1.35	0.6-2.0	0.09-0.12	7.4-8.4	0-0	Moderate	0.20			
	18-33	20-27	1.25-1.35	0.6-6.0	0.05-0.10	7.9-9.0	2-4	Moderate	0.15			
	33	---	---	---	---	---	---	---	---			
Leavitt-----	0-14	10-15	1.30-1.40	2.0-6.0	0.11-0.13	6.6-7.3	0-0	Low-----	0.24	5	3	1-3
	14-22	25-35	1.10-1.20	0.6-2.0	0.19-0.21	7.4-7.8	0-0	Moderate	0.37			
	22-60	20-30	1.10-1.20	0.6-2.0	0.16-0.20	7.9-8.4	0-2	Moderate	0.37			
234*: Tieside-----	0-4	5-15	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	0-2	Low-----	0.32	1	3	1-2
	4-13	5-15	1.35-1.45	2.0-6.0	0.10-0.15	7.9-8.4	0-2	Low-----	0.37			
	13-19	5-15	1.35-1.45	2.0-6.0	0.09-0.13	7.9-8.4	0-2	Low-----	0.24			
	19	---	---	---	---	---	---	---	---			
Pilotpeak-----	0-1	5-15	1.25-1.35	2.0-6.0	0.10-0.12	7.9-8.4	2-4	Low-----	0.20	1	6	1-2
	1-5	5-15	1.35-1.45	2.0-6.0	0.07-0.08	7.9-8.4	2-4	Low-----	0.10			
	5-11	5-15	1.35-1.45	2.0-6.0	0.04-0.06	7.9-9.0	2-4	Low-----	0.02			
	11	---	---	---	---	---	---	---	---			
Rock outcrop.												
235----- Tismid	0-4	10-18	1.30-1.40	2.0-6.0	0.11-0.13	7.4-7.8	<2	Low-----	0.28	5	3	.5-1
	4-14	20-35	1.30-1.40	0.6-2.0	0.14-0.18	7.4-8.4	<2	Moderate	0.32			
	14-60	20-30	1.30-1.40	0.2-0.6	0.13-0.15	>7.8	<4	Moderate	0.37			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
236*: Tisworth-----	0-5	15-24	1.15-1.25	0.6-2.0	0.10-0.12	7.4-9.0	0-4	Low-----	0.32	5	4L	1-2
	5-15	25-35	1.20-1.30	0.2-0.6	0.08-0.10	8.5-9.6	4-16	Moderate	0.37			
	15-60	18-30	1.25-1.35	0.6-2.0	0.08-0.10	7.9-9.6	4-16	Moderate	0.37			
Gerdrum Family--	0-1	20-24	1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	0-2	Moderate	0.32	5	6	1-2
	1-16	35-45	1.20-1.30	0.00-0.06	0.12-0.15	8.5-9.6	0-4	High-----	0.37			
	16-60	30-45	1.20-1.30	0.06-0.2	0.08-0.10	7.9-9.6	8-16	High-----	0.37			
237*: Tisworth-----	0-2	20-25	1.15-1.25	0.6-2.0	0.10-0.12	7.4-9.0	0-4	Moderate	0.32	5	5	1-2
	2-60	25-35	1.20-1.30	0.2-0.6	0.08-0.10	8.5-9.6	0-4	Moderate	0.37			
Gerdrum Family--	0-2	14-18	1.25-1.35	2.0-6.0	0.10-0.12	6.6-8.4	0-2	Low-----	0.24	5	3	1-2
	2-36	35-45	1.20-1.30	0.00-0.06	0.12-0.15	8.5-9.6	0-4	High-----	0.37			
	36-60	30-45	1.20-1.30	0.06-0.2	0.08-0.10	7.9-9.6	8-16	High-----	0.37			
238*: Tule-----	0-3	18-25	1.20-1.30	0.6-2.0	0.14-0.17	6.6-7.8	0-2	Moderate	0.28	1	5	.5-1
	3-12	18-25	1.20-1.30	0.6-2.0	0.14-0.17	6.6-8.4	0-2	Moderate	0.32			
	12-15	18-25	1.30-1.40	0.6-2.0	0.03-0.05	6.6-8.4	0-4	Low-----	0.05			
	15	---	---	---	---	---	---	---	---			
Chalkville-----	0-2	10-20	1.20-1.30	0.6-2.0	0.14-0.17	6.6-7.8	0-0	Low-----	0.28	1	6	1-2
	2-12	25-35	1.20-1.30	0.6-2.0	0.18-0.20	6.6-7.8	0-0	Moderate	0.32			
	12-15	15-30	1.40-1.50	2.0-6.0	0.03-0.05	6.6-8.4	0-0	Moderate	0.05			
	15	---	---	---	---	---	---	---	---			
239*: Tyzak-----	0-4	10-15	1.30-1.40	2.0-6.0	0.12-0.14	7.9-8.4	0-2	Low-----	0.15	1	6	1-3
	4-13	15-25	1.20-1.30	0.6-2.0	0.07-0.10	7.9-8.4	0-4	Moderate	0.10			
	13	---	---	---	---	---	---	---	---			
Rock outcrop.												
240----- Wycolo	0-3	5-15	1.30-1.45	0.6-2.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	1-2
	3-16	20-35	1.40-1.50	0.6-2.0	0.14-0.16	7.4-8.4	<2	Moderate	0.32			
	16-40	18-30	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	<2	Moderate	0.37			
	40	---	---	---	---	---	---	---	---			
241*: Wycolo-----	0-6	5-15	1.30-1.45	0.6-2.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	1-2
	6-12	20-35	1.40-1.50	0.6-2.0	0.14-0.16	7.4-8.4	<2	Moderate	0.32			
	12-25	18-30	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	<2	Moderate	0.37			
	25-36	18-30	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	<2	Moderate	0.37			
	36	---	---	---	---	---	---	---	---			
Alcova-----	0-4	15-18	1.25-1.35	2.0-6.0	0.10-0.12	7.4-8.4	0-2	Low-----	0.15	5	5	1-2
	4-24	20-25	1.25-1.35	0.6-2.0	0.11-0.12	7.4-8.4	0-2	Moderate	0.17			
	24-60	20-25	1.25-1.35	0.6-2.0	0.09-0.11	7.9-9.0	0-2	Low-----	0.10			
242*: Wycolo-----	0-6	5-15	1.30-1.45	0.6-2.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	1-2
	6-12	20-35	1.40-1.50	0.6-2.0	0.14-0.16	7.4-8.4	<2	Moderate	0.32			
	12-26	18-30	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	<2	Moderate	0.37			
	26-36	18-30	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	<2	Moderate	0.37			
	36	---	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 16.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter
									K	T		
	In	Pct	G/cc	In/hr	In/in	pH	mmhos/cm					Pct
242*: Alcova-----	0-4	15-18	1.25-1.35	2.0-6.0	0.10-0.12	7.4-8.4	0-2	Low-----	0.15	5	5	1-2
	4-24	20-25	1.25-1.35	0.6-2.0	0.11-0.12	7.4-8.4	0-2	Moderate	0.17			
	24-60	20-25	1.25-1.35	0.6-2.0	0.09-0.11	7.9-9.0	0-2	Low-----	0.10			
Urban land.												
243*: Wycolo-----	0-2	5-15	1.30-1.45	0.6-2.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	1-2
	2-11	20-35	1.40-1.50	0.6-2.0	0.14-0.16	7.4-8.4	<2	Moderate	0.32			
	11-31	18-30	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	<2	Moderate	0.37			
	31	---	---	---	---	---	---	-----	---			
Tieside-----	0-1	5-15	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	0-2	Low-----	0.32	1	3	1-2
	1-6	5-15	1.35-1.45	2.0-6.0	0.10-0.15	7.9-8.4	0-2	Low-----	0.37			
	6-14	5-15	1.35-1.45	2.0-6.0	0.09-0.13	7.9-8.4	0-2	Low-----	0.24			
	14	---	---	---	---	---	---	-----	---			
244*: Wycolo-----	0-3	5-15	1.30-1.45	0.6-2.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	1-2
	3-13	20-35	1.40-1.50	0.6-2.0	0.14-0.16	7.4-8.4	<2	Moderate	0.32			
	13-24	18-30	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	<2	Moderate	0.37			
	24	---	---	---	---	---	---	-----	---			
Thermopolis----	0-2	15-20	1.25-1.35	2.0-6.0	0.13-0.15	7.9-8.4	<4	Low-----	0.32	1	3	.5-1
	2-14	18-27	1.15-1.25	0.6-2.0	0.19-0.21	7.9-9.0	<4	Moderate	0.43			
	14	---	---	---	---	---	---	-----	---			
Rock outcrop.												

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--WATER FEATURES

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
100----- Aberone	B	None-----	---	---	<u>Ft</u> >6.0	---	---
101*: Abston-----	C	None-----	---	---	>6.0	---	---
Bullock-----	C	None-----	---	---	>6.0	---	---
102*: Alcova-----	B	None-----	---	---	>6.0	---	---
Borollic Camborthids.							
103*: Alcova, shallow substratum-----	B	None-----	---	---	>6.0	---	---
Lupinto-----	B	None-----	---	---	>6.0	---	---
Dahlquist-----	B	None-----	---	---	>6.0	---	---
104*: Alcova, calcareous subsoil-----	B	None-----	---	---	>6.0	---	---
Rock River-----	B	None-----	---	---	>6.0	---	---
105----- Almy	B	None-----	---	---	>6.0	---	---
106*: Almy-----	B	None-----	---	---	>6.0	---	---
Urban land.							
107*: Almy-----	B	None-----	---	---	>6.0	---	---
Tismid-----	C	None-----	---	---	>6.0	---	---
108----- Alogia	C	None-----	---	---	3.0-5.0	Apparent	Apr-Jul
109*: Alogia-----	C	None-----	---	---	3.0-5.0	Apparent	Apr-Jul
Urban land.							
110----- Anchutz	B	None-----	---	---	>6.0	---	---
111*: Ansel-----	B	None-----	---	---	>6.0	---	---
Granile-----	B	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
112*: Bateson-----	B	None-----	---	---	Ft >6.0	---	---
Shirleybasin-----	B	None-----	---	---	>6.0	---	---
113*: Blackhall-----	D	None-----	---	---	>6.0	---	---
Browtine, moist-----	B	None-----	---	---	>6.0	---	---
114*: Blackhall-----	D	None-----	---	---	>6.0	---	---
Satanka-----	C	None-----	---	---	>6.0	---	---
Rock outcrop.							
115*: Blazon-----	D	None-----	---	---	>6.0	---	---
Chaperton-----	B	None-----	---	---	>6.0	---	---
116*: Blazon-----	D	None-----	---	---	>6.0	---	---
Delphill-----	C	None-----	---	---	>6.0	---	---
117*: Bonjea-----	D	None-----	---	---	>6.0	---	---
Chugcreek-----	C	None-----	---	---	>6.0	---	---
Rock outcrop.							
118*: Bonjea-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							
Chugcreek-----	C	None-----	---	---	>6.0	---	---
119----- Bosler, wet substratum	C	None-----	---	---	1.5-3.0	Apparent	Apr-Sep
120*: Bosler-----	B	None-----	---	---	>6.0	---	---
Borollic Camborthids.							
121*: Bosler, wet substratum-----	C	None-----	---	---	1.5-3.0	Apparent	Apr-Sep
Urban land.							
122*: Boyle-----	D	None-----	---	---	>6.0	---	---
Alderon-----	B	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth Ft	Kind	Months
122*: Cathedral-----	D	None-----	---	---	>6.0	---	---
123*: Boyle-----	D	None-----	---	---	>6.0	---	---
Boyle, thin solum-----	D	None-----	---	---	>6.0	---	---
124*: Boyle-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							
125*: Boyle-----	D	None-----	---	---	>6.0	---	---
Lininger-----	B	None-----	---	---	>6.0	---	---
126----- Browline	B	None-----	---	---	>6.0	---	---
127*: Browline-----	B	None-----	---	---	>6.0	---	---
Hilltoppe-----	C	None-----	---	---	>6.0	---	---
128*: Bruja-----	B	None-----	---	---	>6.0	---	---
Canwall-----	C	None-----	---	---	>6.0	---	---
Telecan-----	B	None-----	---	---	>6.0	---	---
129*: Buffork-----	C	None-----	---	---	>6.0	---	---
Bucklon-----	D	None-----	---	---	>6.0	---	---
130*: Byrnie-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							
131. Calciborolls							
132----- Canburn	D	Frequent-----	Brief-----	Apr-Jun	0.5-2.0	Apparent	Apr-Jul
133----- Cantle	D	Frequent-----	Brief-----	Apr-Jul	0.5-2.0	Apparent	May-Jul
134*: Carbol-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							
135*: Carmody-----	B	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
135*: Edlin-----	B	None-----	---	---	<u>Ft</u> >6.0	---	---
136*: Carmody-----	B	None-----	---	---	>6.0	---	---
Ryan Park-----	B	None-----	---	---	>6.0	---	---
137*: Cathedral-----	D	None-----	---	---	>6.0	---	---
Spinekop-----	B	None-----	---	---	>6.0	---	---
Rock outcrop.							
138----- Center Creek	C	Rare-----	---	---	2.0-4.0	Apparent	Apr-Aug
139*: Chaperton, moderately saline-----	B	None-----	---	---	>6.0	---	---
Blazon-----	D	None-----	---	---	>6.0	---	---
140*: Chaperton-----	B	None-----	---	---	>6.0	---	---
Poposhia-----	B	None-----	---	---	>6.0	---	---
141*: Cheadle-----	D	None-----	---	---	>6.0	---	---
Passcreek, cobbly subsoil-----	C	None-----	---	---	>6.0	---	---
Rock outcrop.							
142*: Cheadle-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							
Miracle-----	B	None-----	---	---	>6.0	---	---
143. Cryaquolls							
144. Cryoborolls							
145*: Cushool-----	B	None-----	---	---	>6.0	---	---
Cutback-----	B	None-----	---	---	>6.0	---	---
146*: Cushool-----	B	None-----	---	---	>6.0	---	---
Diamondville-----	C	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth Ft	Kind	Months
147*: Cutback-----	B	None-----	---	---	>6.0	---	---
Pinelli-----	B	None-----	---	---	>6.0	---	---
148*: Dahlquist-----	B	None-----	---	---	>6.0	---	---
Rawlins-----	B	None-----	---	---	>6.0	---	---
Browtine-----	B	None-----	---	---	>6.0	---	---
149*: Dalecreek-----	C	Rare-----	---	---	2.5-4.0	Apparent	Apr-Jul
Kovich-----	D	Occasional-----	Brief-----	Apr-Jul	0-2.5	Apparent	Apr-Aug
150*: Delphill-----	C	None-----	---	---	>6.0	---	---
Blazon-----	D	None-----	---	---	>6.0	---	---
151*: Diamondville-----	C	None-----	---	---	>6.0	---	---
Cushool-----	B	None-----	---	---	>6.0	---	---
152*: Diamonkit-----	C	None-----	---	---	>6.0	---	---
Stylite-----	C	None-----	---	---	>6.0	---	---
153----- Elkol	D	None-----	---	---	>6.0	---	---
154*: Elkol-----	D	None-----	---	---	>6.0	---	---
Gerdrum Family-----	D	None-----	---	---	>6.0	---	---
155*: Elkol-----	D	None-----	---	---	>6.0	---	---
Gerdrum Family-----	C	None-----	---	---	4.0-6.0	Apparent	May-Jul
156----- Evanston	B	None-----	---	---	>6.0	---	---
157*: Evanston-----	B	None-----	---	---	>6.0	---	---
Bonjea-----	D	None-----	---	---	>6.0	---	---
158*: Fiveoh-----	B	None-----	---	---	>6.0	---	---
Fiveoh, cobbly substratum-----	B	None-----	---	---	>6.0	---	---
Ryan Park-----	B	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth Ft	Kind	Months
159*: Fiveoh, cobbly substratum-----	B	None-----	---	---	>6.0	---	---
Fiveoh-----	B	None-----	---	---	>6.0	---	---
Urban land.							
160*: Fiveoh, cobbly substratum-----	B	None-----	---	---	>6.0	---	---
Joemre-----	B	None-----	---	---	>6.0	---	---
161----- Folavar	B	Rare-----	---	---	0-2.0	Apparent	Apr-Aug
162*: Folavar-----	B	None-----	---	---	0-2.0	Apparent	Apr-Aug
Borollic Camborthids.							
163----- Forelle	B	None-----	---	---	>6.0	---	---
164*: Forelle-----	B	None-----	---	---	>6.0	---	---
Urban land.							
165*: Forelle-----	B	None-----	---	---	>6.0	---	---
Diamondville-----	C	None-----	---	---	>6.0	---	---
166*: Glendive-----	B	Rare-----	---	---	3.0-5.0	Apparent	Apr-Aug
Redrob-----	D	Rare-----	---	---	1.0-2.0	Apparent	Apr-Aug
Grenoble-----	D	Frequent-----	Brief-----	May-Jun	2.0-3.5	Apparent	Mar-Aug
167*: Grenoble-----	D	Frequent-----	Brief-----	May-Jun	2.0-3.5	Apparent	Mar-Aug
Gerrard-----	D	Frequent-----	Brief-----	May-Jun	0-1.5	Apparent	Mar-Aug
168----- Greyback	B	None-----	---	---	>6.0	---	---
169----- Gypla	C	None-----	---	---	1.5-3.5	Apparent	Apr-Jul
170*: Gypla-----	C	None-----	---	---	1.5-3.5	Apparent	Apr-Jul
Urban land.							
171*: Hanson-----	B	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
171*: Quander-----	B	None-----	---	---	<u>Ft</u> >6.0	---	---
172*: Hapjack-----	D	None-----	---	---	>6.0	---	---
Rogert-----	D	None-----	---	---	>6.0	---	---
Amesmont-----	C	None-----	---	---	>6.0	---	---
173*: Ipson-----	B	None-----	---	---	>6.0	---	---
Evanston-----	B	None-----	---	---	>6.0	---	---
174, 175----- Joemre	B	None-----	---	---	>6.0	---	---
176*: Kezar-----	B	None-----	---	---	>6.0	---	---
Carbol-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							
177*: Kildor-----	C	None-----	---	---	>6.0	---	---
Rock outcrop.							
178*: Kiltabar-----	C	Rare-----	---	---	2.0-4.0	Apparent	Mar-Sep
Tismid-----	C	None-----	---	---	>6.0	---	---
179*: Lakehelen-----	C	None-----	---	---	>6.0	---	---
Redfeather-----	D	None-----	---	---	>6.0	---	---
Amesmont-----	C	None-----	---	---	>6.0	---	---
180----- Leavitt	B	None-----	---	---	>6.0	---	---
181*: Leavitt-----	D	None-----	---	---	>6.0	---	---
Granile-----	B	None-----	---	---	>6.0	---	---
182*: Leavitt-----	B	None-----	---	---	>6.0	---	---
Hanson-----	B	None-----	---	---	>6.0	---	---
183*: Leavitt-----	B	None-----	---	---	>6.0	---	---
Quander-----	B	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth Ft	Kind	Months
184----- Luhon	B	None-----	---	---	>6.0	---	---
185*: Luvar-----	B	None-----	---	---	>6.0	---	---
Stylite-----	C	None-----	---	---	>6.0	---	---
Diamonkit-----	C	None-----	---	---	>6.0	---	---
186*: Lymanson loam-----	B	None-----	---	---	>6.0	---	---
Lymanson cobbly loam---	B	None-----	---	---	>6.0	---	---
187----- Manada	C	None-----	---	---	2.0-3.0	Apparent	Apr-Jul
188----- McFadden	B	None-----	---	---	>6.0	---	---
189*: Miracle-----	B	None-----	---	---	>6.0	---	---
Cheadle-----	D	None-----	---	---	>6.0	---	---
190*: Moyerson-----	D	None-----	---	---	>6.0	---	---
Kemmerer-----	C	None-----	---	---	>6.0	---	---
191*: Nathale-----	C	None-----	---	---	>6.0	---	---
Passcreek, cobbly subsoil-----	C	None-----	---	---	>6.0	---	---
Rock outcrop.							
192----- Pahlow	B	None-----	---	---	>6.0	---	---
193*: Pilotpeak-----	D	None-----	---	---	>6.0	---	---
Canwall-----	C	None-----	---	---	>6.0	---	---
194----- Pinelli	B	None-----	---	---	>6.0	---	---
195*. Pits, mine							
196*: Poin-----	D	None-----	---	---	>6.0	---	---
Bowen-----	C	None-----	---	---	>6.0	---	---
Rock outcrop.							

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth Ft	Kind	Months
197*: Poposhia-----	B	None-----	---	---	>6.0	---	---
Blazon-----	D	None-----	---	---	>6.0	---	---
198*: Poposhia-----	B	None-----	---	---	>6.0	---	---
Forelle-----	B	None-----	---	---	>6.0	---	---
199*: Poposhia-----	B	None-----	---	---	>6.0	---	---
Chaperton-----	B	None-----	---	---	>6.0	---	---
200*: Rainbolt-----	C	None-----	---	---	>6.0	---	---
Morset-----	B	None-----	---	---	>6.0	---	---
201*: Redfeather-----	D	None-----	---	---	>6.0	---	---
Lakehelen-----	C	None-----	---	---	>6.0	---	---
Rogert-----	D	None-----	---	---	>6.0	---	---
202----- Redrob	D	Rare-----	---	---	1.0-2.0	Apparent	Mar-Aug
203*: Redrob, frequently flooded-----	D	Frequent-----	Brief-----	May-Jun	0-1.5	Apparent	Mar-Aug
Grenoble-----	D	Frequent-----	Brief-----	May-Jun	2.0-3.5	Apparent	Mar-Aug
Redrob-----	D	Rare-----	---	---	1.0-2.0	Apparent	Mar-Aug
204*: Redrob, frequently flooded-----	D	Frequent-----	Brief-----	May-Jun	0-1.5	Apparent	Mar-Aug
Redrob-----	D	Rare-----	---	---	1.0-2.0	Apparent	Mar-Aug
205*: Redrob, frequently flooded-----	D	Frequent-----	Brief-----	May-Jun	0-1.5	Apparent	Mar-Aug
Redrob-----	D	Rare-----	---	---	1.0-2.0	Apparent	Mar-Aug
Urban land.							
206*: Rentsac-----	C	None-----	---	---	>6.0	---	---
Wycolo-----	C	None-----	---	---	>6.0	---	---
207*: Renvers-----	D	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth Ft	Kind	Months
207*: Chalkhill-----	C	None-----	---	---	>6.0	---	---
208*: Rimton-----	C	None-----	---	---	>6.0	---	---
Passcreek, cobbly subsoil-----	C	None-----	---	---	>6.0	---	---
Miracle-----	B	None-----	---	---	>6.0	---	---
209*: Riverwash							
210*: Rock outcrop.							
Bonjea-----	D	None-----	---	---	>6.0	---	---
211*: Rock outcrop.							
Bruja-----	B	None-----	---	---	>6.0	---	---
Byrnie-----	D	None-----	---	---	>6.0	---	---
212*: Rock outcrop.							
Cathedral-----	D	None-----	---	---	>6.0	---	---
213*: Rock outcrop.							
Cathedral-----	D	None-----	---	---	>6.0	---	---
Alderon-----	B	None-----	---	---	>6.0	---	---
214*: Rock outcrop.							
Pilotpeak-----	D	None-----	---	---	>6.0	---	---
215*: Rock outcrop.							
Rogert-----	D	None-----	---	---	>6.0	---	---
216, 217----- Rock River	B	None-----	---	---	>6.0	---	---
218*: Rock River-----	B	None-----	---	---	>6.0	---	---
Urban land.							
219*: Rogert-----	D	None-----	---	---	>6.0	---	---
Lakehelen-----	C	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
219*: Rock outcrop.					<u>Ft</u>		
220*: Rogert----- Rock outcrop.	D	None-----	---	---	>6.0	---	---
Amesmont-----	C	None-----	---	---	>6.0	---	---
221----- Rohonda	C	None-----	---	---	>6.0	---	---
222*: Rohonda-----	C	None-----	---	---	>6.0	---	---
Tieside-----	D	None-----	---	---	>6.0	---	---
223*: Rohonda-----	C	None-----	---	---	>6.0	---	---
Cheadle-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							
224----- Ryark	A	None-----	---	---	>6.0	---	---
225*: Shirleybasin-----	B	None-----	---	---	>6.0	---	---
Twocabin-----	B	None-----	---	---	>6.0	---	---
Lahtida-----	C	None-----	---	---	>6.0	---	---
226----- Silas	C	Rare-----	---	---	2.5-4.5	Apparent	Apr-Jul
227*: Silas, gravelly substratum-----	C	None-----	---	---	2.5-4.5	Apparent	Apr-Jul
Vensora-----	C	Rare-----	---	---	0.5-2.5	Apparent	Apr-Jul
228----- Stunner	B	None-----	---	---	>6.0	---	---
229*: Stunner-----	B	None-----	---	---	>6.0	---	---
Borollic Camborthids.							
230*: Stunner-----	B	None-----	---	---	>6.0	---	---
Tisworth-----	C	None-----	---	---	>6.0	---	---
Blazon-----	D	None-----	---	---	>6.0	---	---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth Ft	Kind	Months
231*: Stunner----- Urban land.	B	None-----	---	---	>6.0	---	---
232----- Teeler	B	None-----	---	---	>6.0	---	---
233*: Thiel----- Lymanson----- Leavitt-----	B C B	None----- None----- None-----	--- --- ---	--- --- ---	>6.0 >6.0 >6.0	--- --- ---	--- --- ---
234*: Tieside----- Pilotpeak----- Rock outcrop.	D D	None----- None-----	--- ---	--- ---	>6.0 >6.0	--- ---	--- ---
235----- Tismid	C	None-----	---	---	>6.0	---	---
236*, 237*: Tisworth----- Gerdrum Family-----	C D	None----- None-----	--- ---	--- ---	>6.0 >6.0	--- ---	--- ---
238*: Tule----- Chalkville-----	C D	None----- None-----	--- ---	--- ---	>6.0 >6.0	--- ---	--- ---
239*: Tyzak----- Rock outcrop.	D	None-----	---	---	>6.0	---	---
240----- Wycolo	B	None-----	---	---	>6.0	---	---
241*: Wycolo----- Alcova-----	B B	None----- None-----	--- ---	--- ---	>6.0 >6.0	--- ---	--- ---
242*: Wycolo----- Alcova----- Urban land.	B B	None----- None-----	--- ---	--- ---	>6.0 >6.0	--- ---	--- ---
243*: Wycolo----- Tieside-----	B D	None----- None-----	--- ---	--- ---	>6.0 >6.0	--- ---	--- ---

See footnote at end of table.

TABLE 17.--WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
244*: Wycolo-----	B	None-----	---	---	<u>Ft</u> >6.0	---	---
Thermopolis-----	D	None-----	---	---	>6.0	---	---
Rock outcrop.							

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 18.--SOIL FEATURES

(The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
100----- Aberone	>60	---	---	---	Low-----	High-----	Low.
101*: Abston-----	20-40	Soft	---	---	Moderate-----	High-----	Moderate.
Bullock-----	20-40	Soft	---	---	Moderate-----	High-----	High.
102*: Alcova-----	>60	---	---	---	Moderate-----	High-----	Low.
Borollic Camborthids.							
103*: Alcova, shallow substratum-----	>60	---	---	---	Moderate-----	High-----	Low.
Lupinto-----	>60	---	---	---	Low-----	High-----	Low.
Dahlquist-----	>60	---	---	---	Moderate-----	High-----	Low.
104*: Alcova, calcareous subsoil-----	>60	---	---	---	Moderate-----	High-----	Low.
Rock River-----	>60	---	---	---	Moderate-----	High-----	Low.
105----- Almy	>60	---	---	---	Moderate-----	High-----	Low.
106*: Almy-----	>60	---	---	---	Moderate-----	High-----	Low.
Urban land.							
107*: Almy-----	>60	---	---	---	Moderate-----	High-----	Low.
Tismid-----	>60	---	---	---	Moderate-----	High-----	High.
108----- Alogia	>60	---	---	---	Moderate-----	High-----	High.
109*: Alogia-----	>60	---	---	---	Moderate-----	High-----	High.
Urban land.							
110----- Anchutz	>60	---	---	---	Moderate-----	High-----	High.
111*: Ansel-----	>60	---	---	---	Moderate-----	Low-----	Low.
Granile-----	>60	---	---	---	Moderate-----	Low-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
112*: Bateson-----	>60	---	---	---	Low-----	High-----	Low.
Shirleybasin-----	>60	---	---	---	Moderate-----	High-----	Low.
113*: Blackhall-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
Browtine, moist-----	>60	---	---	---	Moderate-----	High-----	Low.
114*: Blackhall-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
Satanka-----	20-40	Soft	---	---	Low-----	High-----	Low.
Rock outcrop.							
115*: Blazon-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
Chaperton-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
116*: Blazon-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
Delphill-----	20-40	Soft	---	---	Moderate-----	High-----	Moderate.
117*: Bonjea-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Chugcreek-----	20-40	Hard	---	---	Low-----	Moderate-----	Low.
Rock outcrop.							
118*: Bonjea-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Rock outcrop.							
Chugcreek-----	20-40	Hard	---	---	Low-----	Moderate-----	Low.
119-----	>60	---	---	---	Moderate-----	High-----	Low.
Bosler, wet substratum							
120*: Bosler-----	>60	---	---	---	Low-----	High-----	Low.
Berollic Camborthids.							
121*: Bosler, wet substratum-----	>60	---	---	---	Moderate-----	High-----	Low.
Urban land.							
122*: Boyle-----	10-20	Soft	---	---	Moderate-----	Low-----	Low.
Alderon-----	20-40	Soft	---	---	Moderate-----	Moderate-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
	In		In				
122*: Cathedral-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
123*: Boyle-----	10-20	Soft	---	---	Moderate-----	Low-----	Low.
Boyle, thin solum-----	7-10	Soft	---	---	Moderate-----	Low-----	Low.
124*: Boyle-----	10-20	Soft	---	---	Moderate-----	Low-----	Low.
Rock outcrop.							
125*: Boyle-----	10-20	Soft	---	---	Moderate-----	Low-----	Low.
Lininger-----	20-40	Soft	---	---	Low-----	Moderate-----	Low.
126----- Browline	>60	---	---	---	Low-----	High-----	Low.
127*: Browline-----	>60	---	---	---	Low-----	High-----	Low.
Hilltoppe-----	>60	---	10-20	Thin	Low-----	High-----	Low.
128*: Bruja-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Canwall-----	20-40	Hard	---	---	Low-----	High-----	Low.
Telecan-----	>60	---	---	---	Moderate-----	High-----	Low.
129*: Buffork-----	20-40	Soft	---	---	Moderate-----	Moderate-----	Low.
Bucklon-----	10-20	Soft	---	---	Low-----	Moderate-----	Low.
130*: Byrnie-----	10-20	Soft	---	---	Low-----	Moderate-----	Low.
Rock outcrop.							
131. Calciborolls							
132----- Canburn	>60	---	---	---	Moderate-----	High-----	Low.
133----- Cantle	>60	---	---	---	High-----	High-----	High.
134*: Carbol-----	10-20	Hard	---	---	Moderate-----	Low-----	Low.
Rock outcrop.							
135*: Carmody-----	20-40	Soft	---	---	Moderate-----	High-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
135*: Edlin-----	>60	---	---	---	Moderate-----	High-----	Low.
136*: Carmody-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Ryan Park-----	>60	---	---	---	Moderate-----	High-----	Low.
137*: Cathedral-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Spinekop-----	>60	---	---	---	Moderate-----	High-----	Low.
Rock outcrop.							
138----- Center Creek	>60	---	---	---	Moderate-----	High-----	Low.
139*: Chaperton, moderately saline-----	20-40	Soft	---	---	Moderate-----	High-----	High.
Blazon-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
140*: Chaperton-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Poposhia-----	>60	---	---	---	Moderate-----	High-----	Low.
141*: Cheadle-----	10-20	Hard	---	---	Low-----	Moderate-----	Low.
Passcreek, cobbly subsoil-----	20-40	Hard	---	---	Moderate-----	High-----	Low.
Rock outcrop.							
142*: Cheadle-----	10-20	Hard	---	---	Low-----	Moderate-----	Low.
Rock outcrop.							
Miracle-----	20-40	Hard	---	---	Moderate-----	Moderate-----	Low.
143. Cryaquolls							
144. Cryoborolls							
145*: Cushool-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Cutback-----	20-40	Soft	---	---	Low-----	High-----	Moderate.
146*: Cushool-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Diamondville-----	20-40	Soft	---	---	Moderate-----	High-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
147*: Cutback-----	20-40	Soft	---	---	Low-----	High-----	Low.
Pinelli-----	>60	---	---	---	Low-----	High-----	Low.
148*: Dahlquist-----	>60	---	---	---	Moderate-----	High-----	Low.
Rawlins-----	>60	---	---	---	Low-----	High-----	Low.
Browtine-----	>60	---	---	---	Moderate-----	High-----	Low.
149*: Dalecreek-----	>60	---	---	---	Moderate-----	High-----	Low.
Kovich-----	>60	---	---	---	High-----	High-----	Low.
150*: Delphill-----	20-40	Soft	---	---	Moderate-----	High-----	Moderate.
Blazon-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
151*: Diamondville-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Cushool-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
152*: Diamonkit-----	20-40	Soft	---	---	Low-----	High-----	High.
Stylite-----	>60	---	---	---	Low-----	High-----	High.
153----- Elkol	>60	---	---	---	Low-----	High-----	High.
154*, 155*: Elkol-----	>60	---	---	---	Low-----	High-----	High.
Gerdrum Family-----	>60	---	---	---	Low-----	High-----	High.
156----- Evanston	>60	---	---	---	Moderate-----	High-----	Low.
157*: Evanston-----	>60	---	---	---	Moderate-----	High-----	Low.
Bonjea-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
158*: Fiveoh-----	>60	---	---	---	Low-----	High-----	Low.
Fiveoh, cobbly substratum-----	>60	---	---	---	Low-----	High-----	Low.
Ryan Park-----	>60	---	---	---	Moderate-----	High-----	Low.
159*: Fiveoh, cobbly substratum-----	>60	---	---	---	Low-----	High-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
	In		In				
159*: Fivech----- Urban land.	>60	---	---	---	Low-----	High-----	Low.
160*: Fivech, cobbly substratum----- Joemre-----	>60	---	---	---	Low-----	High-----	Low.
161----- Folavar	>60	---	---	---	Low-----	High-----	Low.
162*: Folavar----- Borollic Camborthids.	>60	---	---	---	Low-----	High-----	Low.
163----- Forelle	>60	---	---	---	Moderate-----	High-----	Low.
164*: Forelle----- Urban land.	>60	---	---	---	Moderate-----	High-----	Low.
165*: Forelle----- Diamondville-----	>60	---	---	---	Moderate-----	High-----	Low.
166*: Glendive----- Redrob----- Grenoble-----	>60	---	---	---	Moderate-----	High-----	Moderate.
167*: Grenoble----- Gerrard-----	>60	---	---	---	Low-----	High-----	Low.
168----- Greyback	>60	---	---	---	Moderate-----	High-----	Low.
169----- Gypla	>60	---	---	---	High-----	High-----	High.
170*: Gypla----- Urban land.	>60	---	---	---	High-----	High-----	High.
171*: Hanson----- Quander-----	>60	---	---	---	Moderate-----	High-----	Low.
	>60	---	---	---	Moderate-----	Moderate-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
172*: Hapjack-----	10-20	Hard	---	---	Low-----	Moderate-----	Low.
Rogert-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Amesmont-----	20-40	Soft	---	---	Low-----	Moderate-----	Low.
173*: Ipson-----	>60	---	---	---	Moderate-----	Low-----	Low.
Evanston-----	>60	---	---	---	Moderate-----	High-----	Low.
174, 175----- Joemre	>60	---	---	---	Low-----	High-----	Low.
176*: Kezar-----	20-40	Hard	---	---	Moderate-----	Low-----	Low.
Carbol-----	10-20	Hard	---	---	Moderate-----	Low-----	Low.
Rock outcrop.							
177*: Kildor-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Rock outcrop.							
178*: Kiltabar-----	>60	---	---	---	Moderate-----	High-----	High.
Tismid-----	>60	---	---	---	Moderate-----	High-----	High.
179*: Lakehelen-----	20-40	Hard	---	---	Moderate-----	Moderate-----	Low.
Redfeather-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Amesmont-----	20-40	Soft	---	---	Low-----	Moderate-----	Low.
180----- Leavitt	>60	---	---	---	Moderate-----	High-----	Low.
181*: Leavitt-----	>60	---	---	---	Moderate-----	High-----	Low.
Granile-----	>60	---	---	---	Moderate-----	Low-----	Low.
182*: Leavitt-----	>60	---	---	---	Moderate-----	High-----	Low.
Hanson-----	>60	---	---	---	Moderate-----	High-----	Low.
183*: Leavitt-----	>60	---	---	---	Moderate-----	High-----	Low.
Quander-----	>60	---	---	---	Moderate-----	Moderate-----	Low.
184----- Luhon	>60	---	---	---	Moderate-----	High-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
	In		In				
185*: Lugar-----	>60	---	---	---	Low-----	High-----	High.
Stylite-----	>60	---	---	---	Low-----	High-----	High.
Diamonkit-----	20-40	Soft	---	---	Low-----	High-----	High.
186*: Lymanson loam-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Lymanson cobbly loam---	20-40	Soft	---	---	Moderate-----	High-----	Low.
187----- Manada	>60	---	---	---	Low-----	High-----	Moderate.
188----- McFadden	>60	---	---	---	Low-----	High-----	Low.
189*: Miracle-----	20-40	Hard	---	---	Moderate-----	Moderate-----	Low.
Cheadle-----	10-20	Hard	---	---	Low-----	Moderate-----	Low.
190*: Moyerson-----	10-20	Soft	---	---	Low-----	High-----	Low.
Kemmerer-----	20-40	Soft	---	---	High-----	High-----	Moderate.
191*: Nathale-----	20-40	Hard	---	---	Moderate-----	High-----	Low.
Passcreek, cobbly subsoil-----	20-40	Hard	---	---	Moderate-----	High-----	Low.
Rock outcrop.							
192----- Pahlow	>60	---	---	---	Low-----	Moderate-----	Low.
193*: Pilotpeak-----	7-20	Hard	---	---	Low-----	High-----	Low.
Canwall-----	20-40	Hard	---	---	Low-----	High-----	Low.
194----- Pinelli	>60	---	---	---	Low-----	High-----	Low.
195*. Pits, mine							
196*: Poin-----	10-20	Hard	---	---	Low-----	High-----	Low.
Bowen-----	20-40	Hard	---	---	Moderate-----	Moderate-----	Low.
Rock outcrop.							
197*: Poposhia-----	>60	---	---	---	Moderate-----	High-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
	In		In				
197*: Blazon-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
198*: Poposhia-----	>60	---	---	---	Moderate-----	High-----	Low.
Forelle-----	>60	---	---	---	Moderate-----	High-----	Low.
199*: Poposhia-----	>60	---	---	---	Moderate-----	High-----	Low.
Chaperton-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
200*: Rainbolt-----	20-40	Soft	---	---	Low-----	High-----	Low.
Morset-----	>60	---	---	---	Moderate-----	High-----	Low.
201*: Redfeather-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Lakehelen-----	20-40	Hard	---	---	Moderate-----	Moderate-----	Low.
Rogert-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
202----- Redrob	>60	---	---	---	Low-----	High-----	High.
203*: Redrob, frequently flooded-----	>60	---	---	---	Low-----	High-----	High.
Grenoble-----	>60	---	---	---	Moderate-----	High-----	Low.
Redrob-----	>60	---	---	---	Low-----	High-----	High.
204*: Redrob, frequently flooded-----	>60	---	---	---	Low-----	High-----	High.
Redrob-----	>60	---	---	---	Low-----	High-----	High.
205*: Redrob, frequently flooded-----	>60	---	---	---	Low-----	High-----	High.
Redrob-----	>60	---	---	---	Low-----	High-----	High.
Urban land.							
206*: Rentsac-----	10-20	Hard	---	---	Low-----	Moderate-----	Low.
Wycolo-----	20-40	Soft	---	---	Low-----	High-----	Low.
207*: Renvers-----	4-10	Hard	---	---	Low-----	Low-----	Low.
Chalkhill-----	10-20	Hard	---	---	Moderate-----	Low-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
	In		In				
208*: Rimton-----	20-40	Soft	---	---	Moderate-----	Moderate-----	Low.
Passcreek, cobbly subsoil-----	20-40	Hard	---	---	Moderate-----	High-----	Low.
Miracle-----	20-40	Hard	---	---	Moderate-----	Moderate-----	Low.
209*. Riverwash							
210*: Rock outcrop.							
Bonjea-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
211*: Rock outcrop.							
Bruja-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Byrnie-----	10-20	Soft	---	---	Low-----	Moderate-----	Low.
212*: Rock outcrop.							
Cathedral-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
213*: Rock outcrop.							
Cathedral-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Alderon-----	20-40	Soft	---	---	Moderate-----	Moderate-----	Low.
214*: Rock outcrop.							
Pilotpeak-----	7-20	Hard	---	---	Low-----	High-----	Low.
215*: Rock outcrop.							
Rogert-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
216, 217----- Rock River	>60	---	---	---	Moderate-----	High-----	Low.
218*: Rock River-----	>60	---	---	---	Moderate-----	High-----	Low.
Urban land.							
219*: Rogert-----	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Lakehelen----- Rock outcrop.	20-40	Hard	---	---	Moderate-----	Moderate-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
	In		In				
220*: Rogert----- Rock outcrop.	10-20	Hard	---	---	Moderate-----	Moderate-----	Low.
Amesmont-----	20-40	Soft	---	---	Low-----	Moderate-----	Low.
221----- Rohonda	20-40	Soft	---	---	Moderate-----	High-----	Low.
222*: Rohonda-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Tieside-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
223*: Rohonda-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Cheadle----- Rock outcrop.	10-20	Hard	---	---	Low-----	Moderate-----	Low.
224----- Ryark	>60	---	---	---	Low-----	High-----	Low.
225*: Shirleybasin-----	>60	---	---	---	Moderate-----	High-----	Low.
Twocabin-----	>60	---	---	---	Moderate-----	High-----	Low.
Lahtida-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
226----- Silas	>60	---	---	---	Moderate-----	High-----	Low.
227*: Silas, gravelly substratum-----	>60	---	---	---	Moderate-----	High-----	Low.
Vensora-----	>60	---	---	---	High-----	High-----	Low.
228----- Stunner	>60	---	---	---	Low-----	High-----	Low.
229*: Stunner----- Borollic Camborthids.	>60	---	---	---	Low-----	High-----	Low.
230*: Stunner-----	>60	---	---	---	Low-----	High-----	Low.
Tisworth-----	>60	---	---	---	Moderate-----	High-----	High.
Blazon-----	8-20	Soft	---	---	Low-----	High-----	Moderate.
231*: Stunner----- Urban land.	>60	---	---	---	Low-----	High-----	Low.

See footnote at end of table.

TABLE 18.--SOIL FEATURES--Continued

Soil name and map symbol	Bedrock		Cemented pan		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Hardness		Uncoated steel	Concrete
	In		In				
232----- Teeler	>60	---	---	---	Low-----	High-----	Low.
233*: Thiel-----	>60	---	---	---	Moderate-----	High-----	Low.
Lymanson-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Leavitt-----	>60	---	---	---	Moderate-----	High-----	Low.
234*: Tieside-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
Pilotpeak-----	7-20	Hard	---	---	Low-----	High-----	Low.
Rock outcrop.							
235----- Tismid	>60	---	---	---	Moderate-----	High-----	High.
236*, 237*: Tisworth-----	>60	---	---	---	Moderate-----	High-----	High.
Gerdrum Family-----	>60	---	---	---	Low-----	High-----	High.
238*: Tule-----	4-20	Hard	---	---	Low-----	Moderate-----	Low.
Chalkville-----	9-20	Hard	---	---	High-----	High-----	Low.
239*: Tyzak-----	6-20	Hard	---	---	Moderate-----	High-----	Low.
Rock outcrop.							
240----- Wycolo	20-40	Soft	---	---	Moderate-----	High-----	Low.
241*: Wycolo-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Alcova-----	>60	---	---	---	Moderate-----	High-----	Low.
242*: Wycolo-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Alcova-----	>60	---	---	---	Moderate-----	High-----	Low.
Urban land.							
243*: Wycolo-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Tieside-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
244*: Wycolo-----	20-40	Soft	---	---	Moderate-----	High-----	Low.
Thermopolis-----	10-20	Soft	---	---	Low-----	High-----	Moderate.
Rock outcrop.							

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 19.--CLASSIFICATION OF THE SOILS

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series)

Soil name	Family or higher taxonomic class
Aberone-----	Loamy-skeletal, carbonatic, mesic Aridic Haplustolls
Abston-----	Fine, montmorillonitic Borollic Natrargids
Alcova-----	Fine-loamy, mixed Borollic Haplargids
Alderon-----	Fine-loamy, mixed Typic Eutroboralfs
Almy-----	Fine-loamy, mixed Borollic Haplargids
Alogia-----	Fine-loamy, mixed Borollic Haplargids
Amesmont-----	Fine-loamy, mixed Mollic Cryoboralfs
Anchutz-----	Fine-loamy, mixed Borollic Haplargids
Ansel-----	Fine-loamy, mixed Typic Cryoboralfs
Bateson-----	Fine-loamy, mixed Borollic Haplargids
Blackhall-----	Loamy, mixed (calcareous), frigid, shallow Ustic Torriorthents
Blazon-----	Loamy, mixed (calcareous), frigid, shallow Ustic Torriorthents
Bonjea-----	Loamy, mixed Lithic Argiborolls
Bosler-----	Fine-loamy over sandy or sandy-skeletal, mixed Borollic Haplargids
Bowen-----	Loamy-skeletal, mixed Argic Cryoborolls
Boyle-----	Loamy-skeletal, mixed, shallow Aridic Argiborolls
Browtine-----	Loamy-skeletal, mixed Borollic Calciorthids
Bruja-----	Loamy-skeletal, mixed Borollic Calciorthids
Bucklon-----	Loamy, mixed, shallow Typic Cryoborolls
Buffork-----	Fine-loamy, mixed Argic Cryoborolls
Bullock-----	Fine-loamy, mixed Borollic Natrargids
Byrnie-----	Loamy, mixed (calcareous), frigid, shallow Ustic Torriorthents
Canburn-----	Fine-loamy, mixed (calcareous), frigid Cumulic Haplaquolls
Cantle-----	Fine-loamy, mixed (calcareous), frigid Cumulic Endoaquolls
Canwall-----	Coarse-loamy, mixed Borollic Haplargids
Carbol-----	Loamy, mixed Argic Lithic Cryoborolls
Carmody-----	Coarse-loamy, mixed (calcareous), frigid Ustic Torriorthents
Cathedral-----	Loamy-skeletal, mixed Lithic Haploborolls
Center Creek-----	Fine-loamy, mixed Pachic Argiborolls
Chalkhill-----	Loamy, mixed Borollic Lithic Haplargids
Chalkville-----	Loamy, mixed Borollic Lithic Haplargids
Chaperton-----	Fine-loamy, mixed Borollic Camborthids
Cheadle-----	Loamy-skeletal, mixed Lithic Cryoborolls
Chugcreek-----	Fine-loamy, mixed Pachic Argiborolls
Cushool-----	Fine-loamy, mixed Borollic Haplargids
Cutback-----	Fine-loamy, mixed Borollic Haplargids
Dahlquist-----	Loamy-skeletal, mixed Borollic Haplargids
Dalecreek-----	Fine-loamy, mixed Cumulic Haploborolls
Delphill-----	Fine-loamy, mixed (calcareous), frigid Ustic Torriorthents
Diamondville-----	Fine-loamy, mixed Borollic Haplargids
Diamonkit-----	Fine-loamy, mixed Borollic Haplargids
Edlin-----	Coarse-loamy, mixed Borollic Camborthids
Elkol-----	Fine, montmorillonitic (calcareous), frigid Ustertic Torriorthents
Evanston-----	Fine-loamy, mixed Aridic Argiborolls
Fiveoh-----	Coarse-loamy, mixed Borollic Calciorthids
Folavar-----	Sandy-skeletal, mixed Borollic Camborthids
Forelle-----	Fine-loamy, mixed Borollic Haplargids
Gerdrum Family-----	Fine, montmorillonitic Borollic Natrargids
Gerrard-----	Fine-loamy over sandy or sandy-skeletal, mixed, frigid Typic Haplaquolls
Glendive-----	Coarse-loamy, mixed (calcareous), frigid Ustic Torrifluvents
Granile-----	Loamy-skeletal, mixed Typic Cryoboralfs
Grenoble-----	Sandy-skeletal, mixed, frigid Aquic Torriorthents
Greyback-----	Loamy-skeletal, mixed Typic Cryoborolls
Gypla-----	Coarse-silty, gypsic, frigid Typic Gypsiorthids
Hanson-----	Loamy-skeletal, carbonatic Calcic Cryoborolls
Hapjack-----	Loamy-skeletal, mixed Lithic Mollic Cryoboralfs
Hilltoppe-----	Loamy-skeletal, carbonatic, shallow Borollic Paleorthids
Ipson-----	Loamy-skeletal, mixed Aridic Argiborolls
Joemre-----	Coarse-loamy, mixed Borollic Haplargids
Kemmerer-----	Fine, montmorillonitic Borollic Camborthids

TABLE 19.--CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Kezar-----	Fine-loamy, mixed Argic Cryoborolls
Kildor-----	Fine, montmorillonitic Typic Cryoborolls
Kiltabar-----	Fine-loamy, mixed, frigid Typic Salorthids
Kovich-----	Fine-loamy, mixed, frigid Cumulic Haplaquolls
Lahtida-----	Fine, mixed Borollic Haplargids
Lakehelen-----	Loamy-skeletal, mixed Typic Cryoboralfs
Leavitt-----	Fine-loamy, mixed Argic Cryoborolls
Lininger-----	Fine-loamy, mixed Typic Argiborolls
Luhon-----	Fine-loamy, mixed Borollic Calcicorthids
Lupinto-----	Loamy-skeletal, mixed Borollic Haplargids
Luvlar-----	Fine-loamy, mixed, frigid Calcic Gypsiorthids
Lymanson-----	Fine-loamy, mixed Argic Cryoborolls
Manada-----	Coarse-loamy, mixed Aquic Calciborolls
McFadden-----	Coarse-loamy, mixed Borollic Calcicorthids
Miracle-----	Fine-loamy, mixed Argic Cryoborolls
Morset-----	Fine-loamy, mixed Argic Cryoborolls
Moyerson-----	Clayey, montmorillonitic (calcareous), frigid, shallow Ustic Torriorthents
Nathale-----	Loamy-skeletal, mixed Argic Cryoborolls
Pahlow-----	Sandy-skeletal, mixed Borollic Camborthids
Passcreek-----	Fine-loamy, mixed Argic Cryoborolls
Pilotpeak-----	Loamy-skeletal, mixed Borollic Lithic Calcicorthids
Pinelli-----	Fine, montmorillonitic Borollic Haplargids
Poin-----	Loamy-skeletal, mixed Lithic Cryoborolls
Poposhia-----	Fine-loamy, mixed (calcareous), frigid Ustic Torriorthents
Quander-----	Loamy-skeletal, mixed Argic Cryoborolls
Rainbolt-----	Fine-loamy, mixed Argic Cryoborolls
Rawlins-----	Coarse-loamy, mixed Borollic Haplargids
Redfeather-----	Loamy-skeletal, mixed Lithic Cryoboralfs
Redrob-----	Fine-loamy over sandy or sandy-skeletal, mixed (calcareous), frigid Fluvaquentic Haplaquolls
*Rentsac-----	Loamy-skeletal, mixed, (calcareous), frigid Lithic Ustic Torriorthents
Renvers-----	Loamy-skeletal, mixed, nonacid, frigid Lithic Ustic Torriorthents
Rimton-----	Fine-loamy, mixed Mollic Cryoboralfs
Rock River-----	Fine-loamy, mixed Borollic Haplargids
Rogert-----	Loamy-skeletal, mixed Lithic Cryoborolls
Rohonda-----	Coarse-loamy, mixed Borollic Haplargids
Ryan Park-----	Coarse-loamy, mixed Borollic Haplargids
Ryark-----	Coarse-loamy, mixed Borollic Haplargids
Satanka-----	Fine-loamy, mixed Borollic Haplargids
Shirleybasin-----	Fine, mixed Borollic Haplargids
Silas-----	Fine-loamy, mixed Cumulic Cryoborolls
Spinekop-----	Fine-loamy, mixed, frigid Borollic Camborthids
Stunner-----	Fine-loamy, mixed Borollic Haplargids
Stylite-----	Fine-loamy, mixed Borollic Haplargids
Teeler-----	Loamy-skeletal, mixed Argic Cryoborolls
Telecan-----	Coarse-loamy, mixed Cumulic Haploborolls
Thermopolis-----	Loamy, mixed (calcareous), frigid, shallow Ustic Torriorthents
Thiel-----	Loamy-skeletal, mixed Argic Cryoborolls
Tieside-----	Loamy, mixed, shallow Borollic Calcicorthids
Tismid-----	Fine-loamy, mixed Borollic Natrargids
Tisworth-----	Fine-loamy, mixed Borollic Natrargids
Tule-----	Loamy-skeletal, mixed, nonacid, frigid Lithic Ustic Torriorthents
Twocabin-----	Loamy-skeletal, mixed Borollic Haplargids
Tyzak-----	Loamy-skeletal, mixed Lithic Calciborolls
Vensora-----	Fine-loamy, mixed Typic Cryaquolls
Wyclo-----	Fine-loamy, mixed Borollic Haplargids