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In cooperation with the
U.S. Army Alaska;
University of Alaska
Fairbanks (Agricultural
and Forestry
Experiment Station);
Salcha-Delta Soil and
Water Conservation
District; Alaska Soil and
Water Conservation
District

Soil Survey of Fort Greely and Donnelly Training Area, Alaska



How To Use This Soil Survey

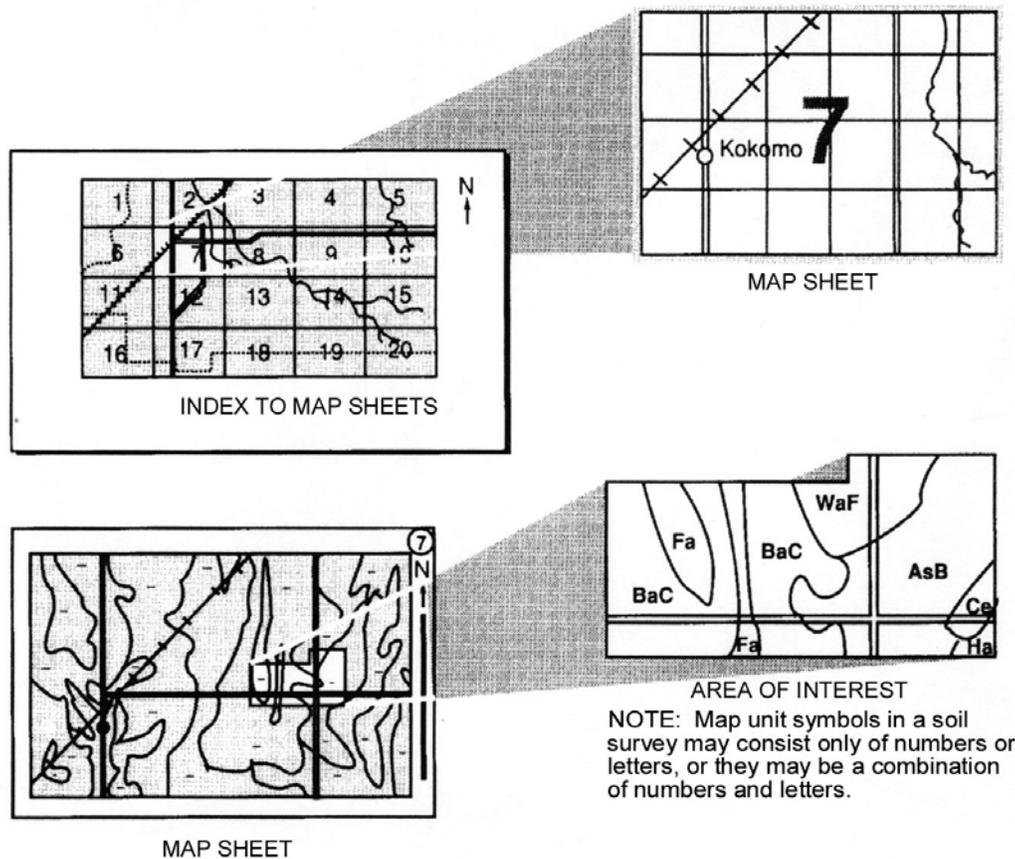
Detailed Soil Maps

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

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

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

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



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

Major fieldwork for this soil survey was completed in 2003. Soil names and descriptions were approved in 2004. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2003. This survey was made cooperatively by the Natural Resources Conservation Service and the Department of the Army, U.S. Army Alaska; University of Alaska Fairbanks (Agricultural and Forestry Experiment Station); Salcha-Delta Soil and Water Conservation District; Alaska Soil and Water Conservation District.

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

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Cover: Puller Mountain, looking south toward the Alaska Range. Map Unit 10MS1. This area is dominated by alpine vegetation. Evidence of ice features, such as polygons and non-sorted circles, are apparent on most ridge tops in the alpine. Puller Mountain is a lateral moraine left by glaciers over 10,000 years ago. The mountains to the south are a result of mountain building and the rise of the Alaska Range.

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

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Foreword

This soil survey contains information that can be used in land-planning programs in the Fort Greely and Donnelly Training Area, Alaska. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

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

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

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

Robert N. Jones
State Conservationist
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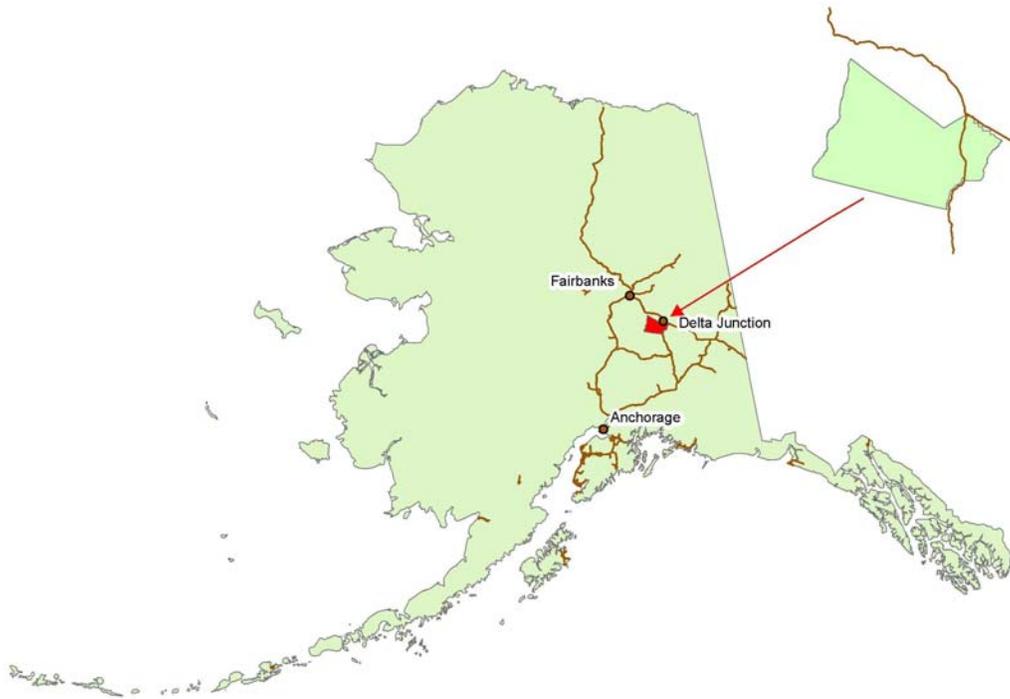


Figure 1. Location of Fort Greely and Donnelly Training Area in Alaska.

Soil Survey of Fort Greely and Donnelly Training Area, Alaska

By Trudy Pink, Natural Resources Conservation Service

Fieldwork by Dave Swanson, Alan Stahnke, Stephanie Ewing, Pete Kolka, George Hitz, Casey Schroeder, Nathan Haile, Donald Perizak, Ryan Dermody, Michelle McGee, and Trudy Pink, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service in cooperation with the Department of the Army, U.S. Army Alaska; University of Alaska Fairbanks, Agricultural and Forestry Experiment Station; Salcha-Delta Soil and Water Conservation District; Alaska Soil and Water Conservation District

General Nature of the Survey Area

The Fort Greely and Donnelly Training Area lies approximately 100 miles southeast of Fairbanks and ten miles south of the community of Delta Junction (Figure 1). The survey area is approximately 626,000 acres, or 978 square miles, in size. The northern edge of the survey area lies in the Tanana lowlands, while the southern edge of the survey area includes the foothills of the Alaska Range. The survey area is bordered on the east by Granite Creek and on the west by the Little Delta River. Four major drainages run from south to north through the area, all of which eventually make their way to the Tanana River. These drainages are the Delta River, Jarvis Creek, Delta Creek, and the Little Delta River. Approximately 126,000 acres of the survey area lies east of the Delta River, of which 1,800 acres are the official cantonment area; the remaining acreage is used for small arms and munitions exercises. The area west of the Delta River, approximately 500,000 acres, is used as an impact and maneuver area by Eielson Air Force Base. This area also serves as a cold weather training ground for the army.

History

The Fort Greely and Donnelly Training Area has served a variety of uses since its establishment as an Army Air Force Base in 1942. Throughout World War II, the base served as a transfer point for the Lend-Lease Program to Russia. American aircraft were ferried to the base via a series of military airstrips throughout the U.S. and Canada. When the aircraft reached the base they were turned over to Russian pilots, who then ferried the aircraft to the Soviet Union. The Army Air Force Base officially became an Army post in 1948. In 1955, it was officially named Ft. Greely Army Base. Ft. Greely was the home of the Northern Warfare Training Center and the Cold Regions Test Center.

The Northern Warfare Training Center provided training for soldiers in such things as arctic survival, mountaineering, military snow skiing, and arctic warfare. The Cold

Regions Test Center was responsible for testing equipment in arctic conditions as well as testing the effects of the arctic environment on equipment.

In 1995, Ft. Greely Army Base was re-aligned with Ft. Wainwright Army Base, which left only a few personnel on base. The outlying post is still used as a training and maneuver area by both the Army and the Air Force. In 2001, Fort Greely was closed and the training lands were transferred to the control of Fort Wainwright and are presently known as the Donnelly Training Area. Fort Greely was reestablished and assigned to the Strategic Missile Defense Command. The Donnelly Training Area is no longer affiliated with Fort Greely and is considered a separate installation.

Climate

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

In winter (November through March), the average temperature is 4.06 degrees F (-15.52 degrees C) and the average daily minimum temperature is -4.08 degrees F (-20.04 degrees C). The lowest temperature on record is -59 degrees F (-50.56 degrees C). In summer, the average temperature is 57.8 degrees F (14.33 degrees C) and the average daily maximum temperature is 65.1 degrees F (18.39 degrees C). The highest recorded temperature is 90 degrees F (32.22 degrees C).

Growing-degree-days are shown in [table 1](#). They are equivalent to "heat units." During the month, growing-degree-days accumulate by the amount that the average temperature each day exceeds a base temperature of 40 degrees F (4.44 degrees C). The growing-degree-days in the survey area are sufficient for small grains and cole crops.

The total annual precipitation at Big Delta is 12.01 inches (30.5 cm). Of this, 9.2 inches (23.4 cm), or 77 percent, usually falls in May through September. The growing season for most plants falls within this period. In two years out of ten, the rainfall in May through September is less than 5.16 inches (13.1 cm). During many years, a lack of sufficient precipitation in May and June results in a soil moisture deficit during the period of plant emergence.

The average seasonal snowfall is 47.9 inches (121.7 cm). Snow covers the ground from October to April.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. To characterize and map the soils, soil scientists dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The soil scientists also observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of native plants; and the kinds of geologic materials.

Before beginning the fieldwork, relevant information on the climate, geology, geomorphology, hydrology, and vegetation of the survey area was assembled. Aerial photography of the survey area was acquired and prepared for field use and mapping. Aerial black and white photography taken in 1998 at a scale of 1:25,000 was used for field mapping for the cantonment area. Aerial color photography, taken in 1980 at a scale of 1:63,360, was used for field mapping west of the Delta River. Fieldwork for the soil survey was conducted between 2000 and 2003. Access to the Oklahoma and Mississippi Impact areas (see Figure 2, yellow and red shaded areas) was strictly

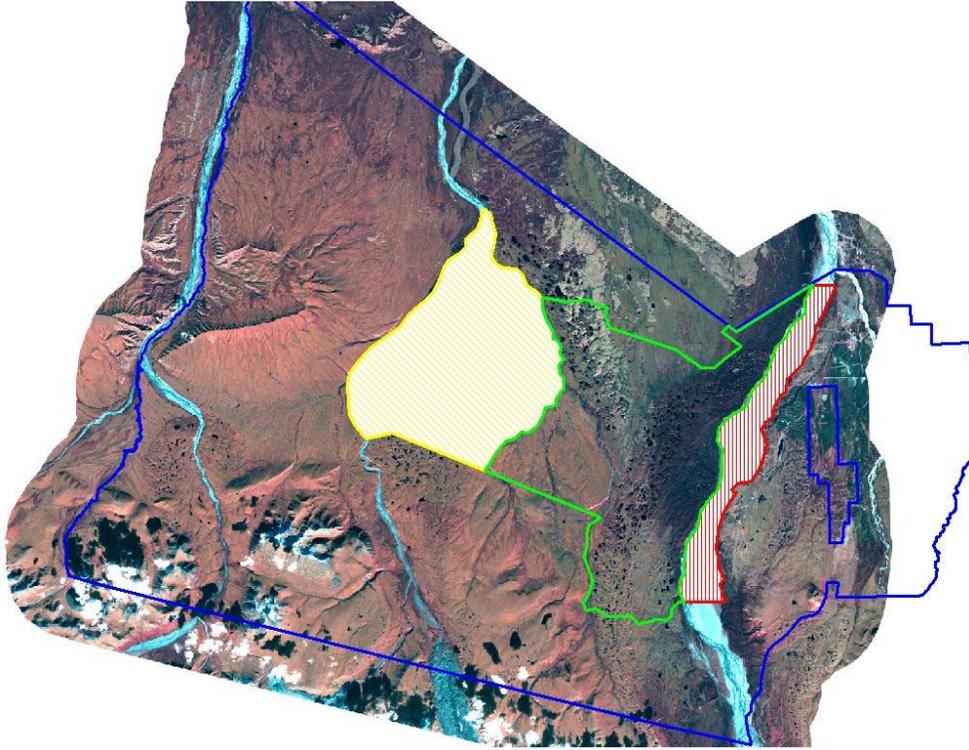


Figure 2. Restricted Areas for Fort Greely and Donnelly Training Area—Access was completely restricted in the Oklahoma (yellow shaded) and Mississippi (red shaded) Impact Areas; the Lakes Impact Area (green) was accessible in 2002 and restricted in 2003. Soils information in these areas is based on limited observations.

prohibited. Any soils information represented in these areas is extrapolated from similar areas and landforms. Access was limited in the Lakes Impact Area (see Figure 2, area outlined in green). Soil Scientists were allowed access in the summer of 2002 and were restricted access in the summer of 2003. Soils information for this area is based on limited observation.

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

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

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color and texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

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

Detailed Soil Map Units

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

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

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

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

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

Map units that consist of one major component are called *consociations*. 616—Donnelly silt loam, 0 to 3 percent slopes, is an example.

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The

pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. 619—Gerstle-Moosehead complex, 0 to 3 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. There are no associations in this survey area.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. There are no undifferentiated groups in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. 647—Riverwash is an example.

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

601—Aquic Dystricrypts-Typic Dystricrypts-Histels complex

Elevation: 2,379 to 3,012 feet

Mean annual precipitation: 21 to 32 inches

Frost-free period: 70 to 95 days

Aquic Dystricrypts, high moraines, and similar soils

Extent: 35 to 45 percent of the map unit

Landform: depressions on moraines

Slope shape: concave, linear

Slope range: 10 to 25 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 8 inches; June-Sept.—8 to more than 60 inches

Ponding: none

Available water capacity (approximate): 4.9 inches

Representative Profile:

Oa—0 to 2 inches; highly decomposed plant material, high permeability

A—2 to 4 inches; silt loam, moderately high permeability

2Bw—4 to 16 inches; gravelly sandy loam, moderately high permeability

2C—16 to 60 inches; very gravelly sandy loam, moderately high permeability

Typic Dystricrypts, high moraines, and similar soils

Extent: 25 to 45 percent of the map unit

Landform: moraines

Position on slope: shoulders, backslopes, summits

Slope shape: linear, convex

Slope range: 7 to 20 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 5.8 inches
Representative Profile:
 Oe—0 to 2 inches; moderately decomposed plant material, high permeability
 A—2 to 3 inches; silt loam, moderately high permeability
 2Bw—3 to 4 inches; gravelly sandy loam, high permeability
 2BC—4 to 9 inches; gravelly sandy loam, high permeability
 2C—9 to 60 inches; gravelly sandy loam, high permeability

Histels, high moraines, and similar soils

Extent: 15 to 25 percent of the map unit
Landform: depressions on moraines
Slope shape: linear, concave
Slope range: 5 to 10 percent
Parent material: organic material
Depth to permafrost: 16 to 31 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: medium
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 22 inches
Ponding: none
Available water capacity (approximate): 10.6 inches
Representative Profile:
 Oe—0 to 4 inches; mucky peat, high permeability
 Oa—4 to 22 inches; muck, moderately high permeability
 OAjff—22 to 28 inches; permanently frozen mucky silt loam, impermeable
 Bf—28 to 60 inches; permanently frozen material, impermeable

Minor Components

Water: 5 to 15 percent of the map unit

602—Audrey-Butchlake-Typic Aquiturbels complex, 0 to 15 percent slopes

Elevation: 1,483 to 2,454 feet
Mean annual precipitation: 15 to 19 inches
Frost-free period: 75 to 104 days

Audrey and similar soils

Extent: 20 to 50 percent of the map unit
Landform: hills on moraines
Position on slope: shoulders, summits, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 15 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: medium

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 8 inches; June-Sept.—8 to more than 60 inches

Ponding: none

Available water capacity (approximate): 8.5 inches

Vegetation: black spruce, white spruce, and paper birch forest

Representative Profile:

Oe—0 to 1 inch; moderately decomposed plant material, moderately high permeability

A—1 to 8 inches; silt loam, moderately high permeability

Bw/Ajj—8 to 17 inches; silt loam, moderately high permeability

2BC—17 to 28 inches; cobbly very fine sandy loam, high permeability

2C—28 to 60 inches; very gravelly sandy loam, high permeability

Butchlake, gently sloping, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: hills on moraines

Position on slope: backslopes, shoulders, summits, footslopes

Slope shape: linear, convex

Slope range: 0 to 15 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Typic Aquiturbels and similar soils

Extent: 20 to 50 percent of the map unit

Landform: depressions on moraines, hills on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: concave, convex, linear

Slope range: 0 to 7 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjggf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Minor Components

Butchlake, steep, and similar soils: 0 to 10 percent of the map unit

603—Audrey-Typic Aquiturbels complex, 0 to 7 percent slopes

Elevation: 1,572 to 1,824 feet

Mean annual precipitation: 16 to 22 inches

Frost-free period: 75 to 104 days

Audrey and similar soils

Extent: 75 to 85 percent of the map unit

Landform: hills on moraines

Position on slope: shoulders, summits, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 7 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: low

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 8 inches; June-Sept.—8 to more than 60 inches

Ponding: none

Available water capacity (approximate): 8.5 inches

Vegetation: black spruce, white spruce, and paper birch forest

Representative Profile:

Oe—0 to 1 inch; moderately decomposed plant material, moderately high permeability

A—1 to 8 inches; silt loam, moderately high permeability

Bw/Ajj—8 to 17 inches; silt loam, moderately high permeability

2BC—17 to 28 inches; cobbly very fine sandy loam, high permeability

2C—28 to 60 inches; very gravelly sandy loam, high permeability

Typic Aquiturbels and similar soils

Extent: 10 to 20 percent of the map unit

Landform: hills on moraines, depressions on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 7 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjgjf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Minor Components

Butchlake and similar soils: 0 to 10 percent of the map unit

604—Babel mucky silt loam, 0 to 15 percent slopes

Elevation: 1,798 to 2,936 feet

Mean annual precipitation: 17 to 21 inches

Frost-free period: 65 to 95 days

Babel and similar soils

Extent: 80 to 90 percent of the map unit

Landform: hills on moraines

Position on slope: footslopes, backslopes, shoulders

Slope shape: convex, linear, concave

Slope range: 0 to 15 percent

Parent material: loess over till

Depth to permafrost: 14 to 47 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: medium

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—20 to 25 inches

Ponding: frequent

Available water capacity (approximate): 4.4 inches

Vegetation: birch or alder scrub

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, moderately high permeability

AO—2 to 4 inches; mucky silt loam, moderately high permeability

A/2Bw—4 to 8 inches; gravelly silt loam, moderately high permeability

2BC—8 to 18 inches; gravelly sandy loam, moderately high permeability
 2C—18 to 25 inches; very stony sandy loam, moderately high permeability
 2Cf—25 to 60 inches; permanently frozen very gravelly sandy loam, impermeable

Minor Components

Butchlake and similar soils: 5 to 15 percent of the map unit
 Typic Aquiturbels and similar soils: 5 to 10 percent of the map unit

605—Babel-Butchlake complex, 10 to 20 percent slopes

Elevation: 1,886 to 2,854 feet
Mean annual precipitation: 12 to 15 inches
Frost-free period: 65 to 95 days

Babel and similar soils

Extent: 80 to 90 percent of the map unit
Landform: hills on moraines
Position on slope: footslopes, backslopes, shoulders
Slope shape: linear, concave, convex
Slope range: 10 to 20 percent
Parent material: loess over till
Depth to permafrost: 14 to 47 inches
Hazard of erosion (organic mat removed): by water—moderate; by wind—severe
Runoff: medium
Drainage class: moderately well drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—20 to 25 inches
Ponding: frequent
Available water capacity (approximate): 4.4 inches
Vegetation: birch or alder scrub
Representative Profile:
 Oe—0 to 2 inches; moderately decomposed plant material, moderately high permeability
 AO—2 to 4 inches; mucky silt loam, moderately high permeability
 A/2Bw—4 to 8 inches; gravelly silt loam, moderately high permeability
 2BC—8 to 18 inches; gravelly sandy loam, moderately high permeability
 2C—18 to 25 inches; very stony sandy loam, moderately high permeability
 2Cf—25 to 60 inches; permanently frozen very gravelly sandy loam, impermeable

Minor Components

Butchlake and similar soils: 10 to 20 percent of the map unit

606—Babel-Butchlake complex, 20 to 30 percent slopes

Elevation: 2,198 to 2,766 feet
Mean annual precipitation: 12 to 15 inches
Frost-free period: 65 to 95 days

Babel and similar soils

Extent: 75 to 85 percent of the map unit

Landform: hills on moraines

Position on slope: footslopes, backslopes, shoulders

Slope shape: linear, concave, convex

Slope range: 20 to 30 percent

Parent material: loess over till

Depth to permafrost: 14 to 47 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: high

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—20 to 25 inches

Ponding: frequent

Available water capacity (approximate): 4.4 inches

Vegetation: birch or alder scrub

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, moderately high permeability

AO—2 to 4 inches; mucky silt loam, moderately high permeability

A/2Bw—4 to 8 inches; gravelly silt loam, moderately high permeability

2BC—8 to 18 inches; gravelly sandy loam, moderately high permeability

2C—18 to 25 inches; very stony sandy loam, moderately high permeability

2Cf—25 to 60 inches; permanently frozen very gravelly sandy loam, impermeable

Butchlake and similar soils

Extent: 10 to 20 percent of the map unit

Landform: hills on moraines

Position on slope: backslopes, shoulders, summits, footslopes

Slope shape: linear, convex

Slope range: 20 to 30 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Minor Components

Typic Aquiturbels and similar soils: 5 to 10 percent of the map unit

607—Butchlake silt loam, 20 to 30 percent slopes

Elevation: 1,447 to 1,873 feet
Mean annual precipitation: 12 to 15 inches
Frost-free period: 75 to 104 days

Butchlake and similar soils

Extent: 85 to 95 percent of the map unit
Landform: hills on moraines
Position on slope: backslopes, shoulders, summits, footslopes
Slope shape: linear, convex
Slope range: 20 to 30 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—moderate; by wind—severe
Runoff: high
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.9 inches
Vegetation: paper birch, spruce, and aspen forest
Representative Profile:
 Oi—0 to 3 inches; slightly decomposed plant material, high permeability
 A—3 to 4 inches; mucky silt loam, moderately high permeability
 Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam,
 high permeability
 2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Minor Components

Typic Aquiturbels and similar soils: 5 to 15 percent of the map unit

608—Butchlake silt loam, 30 to 45 percent slopes

Elevation: 1,332 to 1,591 feet
Mean annual precipitation: 12 to 15 inches
Frost-free period: 75 to 104 days

Butchlake and similar soils

Extent: 85 to 95 percent of the map unit
Landform: hills on moraines
Position on slope: backslopes, shoulders, summits, footslopes
Slope shape: linear, convex
Slope range: 30 to 45 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

O_i—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Minor Components

Typic Aquiturbels, gently sloping, and similar soils: 0 to 10 percent of the map unit

Typic Aquiturbels, moderately steep, and similar soils: 0 to 10 percent of the map unit

609—Butchlake-Nomercy Lake complex, 0 to 80 percent slopes

Elevation: 1,627 to 2,346 feet

Mean annual precipitation: 12 to 15 inches

Frost-free period: 75 to 104 days

Butchlake, moderately steep, and similar soils

Extent: 35 to 60 percent of the map unit

Landform: hills on moraines

Position on slope: backslopes, shoulders, summits, footslopes

Slope shape: linear, convex

Slope range: 0 to 50 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

O_i—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Nomercy Lake and similar soils

Extent: 30 to 40 percent of the map unit

Landform: hills on moraines

Slope shape: linear, convex, concave

Slope range: 0 to 35 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 5.9 inches

Vegetation: sparse vegetation of aspen scrub, low shrubs, and lichens

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, high permeability

Bw1—2 to 4 inches; silt loam, moderately high permeability

2Bw2—4 to 13 inches; gravelly fine sandy loam, high permeability

2C—13 to 60 inches; very gravelly fine sandy loam, high permeability

Butchlake, very steep, and similar soils

Extent: 0 to 10 percent of the map unit

Landform: hills on moraines

Position on slope: backslopes, shoulders, summits, footslopes

Slope shape: linear, convex

Slope range: 50 to 80 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Minor Components

Typic Aquiturbels and similar soils: 0 to 10 percent of the map unit

Typic Cryaquepts and similar soils: 0 to 10 percent of the map unit

610—Butchlake-Southpaw complex, 0 to 12 percent slopes

Elevation: 1,266 to 2,221 feet

Mean annual precipitation: 16 to 22 inches

Frost-free period: 75 to 104 days

Butchlake, gently sloping, and similar soils

Extent: 40 to 60 percent of the map unit

Landform: hills on moraines

Position on slope: backslopes, shoulders, summits, footslopes

Slope shape: linear, convex

Slope range: 0 to 12 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Southpaw and similar soils

Extent: 30 to 50 percent of the map unit

Landform: hills on moraines

Position on slope: summits, shoulders, backslopes, footslopes

Slope shape: linear, concave, convex

Slope range: 0 to 12 percent

Parent material: loess over glacial till

Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.2 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 4 inches; brown with light gray mottles slightly decomposed plant material, high permeability

Bw1—4 to 13 inches; brown with light gray mottles silt loam, moderately high permeability

Bw2—13 to 22 inches; brown with light gray mottles fine sandy loam, high permeability

2BC—22 to 36 inches; brown with light gray mottles gravelly sandy loam, high permeability

2C—36 to 60 inches; brown with light gray mottles very gravelly loamy sand, high permeability

Minor Components

Butchlake, moderately steep, and similar soils: 0 to 15 percent of the map unit

Typic Aquiturbels and similar soils: 5 to 15 percent of the map unit

611—Butchlake-Southpaw complex, 0 to 35 percent slopes

Elevation: 1,270 to 2,005 feet

Mean annual precipitation: 16 to 20 inches

Frost-free period: 75 to 104 days

Butchlake and similar soils

Extent: 50 to 70 percent of the map unit

Landform: hills on moraines

Position on slope: backslopes, shoulders, summits, footslopes

Slope shape: linear, convex

Slope range: 0 to 35 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Southpaw and similar soils

Extent: 30 to 40 percent of the map unit

Landform: hills on moraines

Position on slope: summits, shoulders, backslopes, footslopes

Slope shape: linear, concave, convex

Slope range: 0 to 35 percent

Parent material: loess over glacial till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.2 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 4 inches; brown with light gray mottles slightly decomposed plant material, high permeability

Bw1—4 to 13 inches; brown with light gray mottles silt loam, moderately high permeability

Bw2—13 to 22 inches; brown with light gray mottles fine sandy loam, high permeability

2BC—22 to 36 inches; brown with light gray mottles gravelly sandy loam, high permeability

2C—36 to 60 inches; brown with light gray mottles very gravelly loamy sand, high permeability

Minor Components

Typic Aquiturbels and similar soils: 0 to 5 percent of the map unit

612—Butchlake-Southpaw complex, subalpine, 0 to 35 percent slopes

Elevation: 1,841 to 2,648 feet
Mean annual precipitation: 20 to 24 inches
Frost-free period: 65 to 95 days

Butchlake, strongly sloping, and similar soils

Extent: 70 to 90 percent of the map unit
Landform: hills on moraines
Position on slope: backslopes, shoulders, summits, footslopes
Slope shape: linear, convex
Slope range: 0 to 35 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: medium
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.9 inches
Vegetation: paper birch, spruce, and aspen forest
Representative Profile:
 Oi—0 to 3 inches; slightly decomposed plant material, high permeability
 A—3 to 4 inches; mucky silt loam, moderately high permeability
 Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability
 2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Southpaw and similar soils

Extent: 10 to 30 percent of the map unit
Landform: hills on moraines
Position on slope: summits, shoulders, backslopes, footslopes
Slope shape: convex, linear, concave
Slope range: 0 to 12 percent
Parent material: loess over glacial till
Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate
Runoff: medium
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 7.2 inches
Vegetation: paper birch, spruce, and aspen forest
Representative Profile:
 Oi—0 to 4 inches; brown with light gray mottles slightly decomposed plant material, high permeability
 Bw1—4 to 13 inches; brown with light gray mottles silt loam, moderately high permeability
 Bw2—13 to 22 inches; brown with light gray mottles fine sandy loam, high permeability
 2BC—22 to 36 inches; brown with light gray mottles gravelly sandy loam, high permeability

2C—36 to 60 inches; brown with light gray mottles very gravelly loamy sand, high permeability

Minor Components

Butchlake, steep, and similar soils: 0 to 10 percent of the map unit

613—Chena very fine sandy loam

Elevation: 1,175 to 1,631 feet

Mean annual precipitation: 12 to 15 inches

Frost-free period: 75 to 104 days

Chena and similar soils

Extent: 90 to 100 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 2 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: very low

Drainage class: excessively drained

Flooding: rare

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.5 inches

Vegetation: white spruce and balsam poplar forest

Representative Profile:

Oi—0 to 4 inches; very dark gray slightly decomposed plant material, high permeability

C1—4 to 9 inches; olive brown stratified fine sand to silt loam, high permeability

2C2—9 to 60 inches; grayish brown very gravelly sand, high permeability

Note: This soil has 0 to 10 inches of loamy material over sand and gravel.

Minor Components

Jarvis and similar soils: 0 to 10 percent of the map unit

614—Chena very fine sandy loam, flooded

Elevation: 1,217 to 1,680 feet

Mean annual precipitation: 10 to 15 inches

Frost-free period: 75 to 104 days

Chena and similar soils

Extent: 80 to 95 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: very low

Drainage class: excessively drained

Flooding: rare

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.5 inches

Vegetation: balsam poplar, willow, silverberry, and white spruce scrub

Representative Profile:

Oi—0 to 4 inches; very dark gray slightly decomposed plant material, high permeability

C1—4 to 9 inches; olive brown stratified fine sand to silt loam, high permeability

2C2—9 to 60 inches; grayish brown very gravelly sand, high permeability

Note: This soil has 0 to 10 inches of loamy material over sand and gravel.

Minor Components

Jarvis and similar soils: 0 to 15 percent of the map unit

Riverwash: 0 to 10 percent of the map unit

615—Chetlake silt loam, 0 to 15 percent slopes

Elevation: 2,139 to 3,284 feet

Mean annual precipitation: 26 to 30 inches

Frost-free period: 65 to 95 days

Chetlake and similar soils

Extent: 70 to 90 percent of the map unit

Landform: hummocks on moraines

Slope shape: linear

Slope range: 0 to 15 percent

Parent material: loess over till

Depth to permafrost: 20 to 35 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—26 to 31 inches

Ponding: frequent

Available water capacity (approximate): 6.8 inches

Vegetation: low shrubs, sedges, grass, and moss

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, moderately high permeability

Bjgg—3 to 20 inches; loam, moderately high permeability

Abjj—20 to 26 inches; silt loam, moderately high permeability

2BC—26 to 31 inches; gravelly loam, high permeability

2Cf—31 to 60 inches; permanently frozen very stony loam, impermeable

Minor Components

Typic Aquiturbels and similar soils: 5 to 15 percent of the map unit

Babel and similar soils: 0 to 5 percent of the map unit

Terric Hemistels and similar soils: 0 to 10 percent of the map unit

616—Donnelly silt loam, 0 to 3 percent slopes

Elevation: 1,460 to 2,096 feet
Mean annual precipitation: 10 to 15 inches
Frost-free period: 75 to 104 days

Donnelly and similar soils

Extent: 80 to 100 percent of the map unit
Landform: stream terraces
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: loess over sandy and gravelly alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: somewhat excessively drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.4 inches
Vegetation: open black spruce forest or birch scrub
Representative Profile:
 Oi—0 to 2 inches; very dark brown slightly decomposed plant material, high permeability
 Bw—2 to 6 inches; dark yellowish brown gravelly silt loam, moderately high permeability
 2BC—6 to 12 inches; variegated gravelly silt loam, high permeability
 2C—12 to 60 inches; very dark brown very gravelly sand, high permeability
Note: This soil has less than 10 inches of loamy material over sand and gravel.

Minor Components

Nenana and similar soils: 0 to 20 percent of the map unit

617—Donnelly silt loam, 45 to 70 percent slopes

Elevation: 1,197 to 1,818 feet
Mean annual precipitation: 12 to 15 inches
Frost-free period: 75 to 104 days

Donnelly, very steep, and similar soils

Extent: 80 to 90 percent of the map unit
Landform: escarpments on stream terraces
Position on slope: backslopes
Slope shape: linear
Slope range: 45 to 70 percent
Parent material: loess over sandy and gravelly alluvium
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: high
Drainage class: somewhat excessively drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.4 inches

Vegetation: open black spruce forest or birch scrub

Representative Profile:

Oi—0 to 2 inches; very dark brown slightly decomposed plant material, high permeability

Bw—2 to 6 inches; dark yellowish brown gravelly silt loam, moderately high permeability

2BC—6 to 12 inches; variegated gravelly silt loam, high permeability

2C—12 to 60 inches; very dark brown very gravelly sand, high permeability

Note: This soil has less than 10 inches of loamy material over sand and gravel.

Minor Components

Donnelly, steep, and similar soils: 10 to 20 percent of the map unit

618—Donnelly-Nenana complex, 0 to 3 percent slopes

Elevation: 1,388 to 2,041 feet

Mean annual precipitation: 16 to 20 inches

Frost-free period: 75 to 104 days

Donnelly and similar soils

Extent: 20 to 80 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: loess over sandy and gravelly alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: somewhat excessively drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.4 inches

Vegetation: open black spruce forest or birch scrub

Representative Profile:

Oi—0 to 2 inches; very dark brown slightly decomposed plant material, high permeability

Bw—2 to 6 inches; dark yellowish brown gravelly silt loam, moderately high permeability

2BC—6 to 12 inches; variegated gravelly silt loam, high permeability

2C—12 to 60 inches; very dark brown very gravelly sand, high permeability

Note: This soil has less than 10 inches of loamy material over sand and gravel.

Nenana and similar soils

Extent: 20 to 80 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: loess over alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 5.9 inches

Vegetation: white spruce, quaking aspen, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; brown moderately decomposed plant material, moderately high permeability

Bw—2 to 15 inches; dark yellowish brown silt loam, moderately high permeability

BC—15 to 21 inches; dark brown gravelly silt loam, moderately high permeability

2C—21 to 60 inches; strong brown extremely gravelly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Volkmar and similar soils: 0 to 5 percent of the map unit

619—Gerstle-Moosehead complex, 0 to 3 percent slopes

Elevation: 1,286 to 1,752 feet

Mean annual precipitation: 15 to 19 inches

Frost-free period: 75 to 104 days

Gerstle and similar soils

Extent: 60 to 70 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: frequent

Available water capacity (approximate): 11.1 inches

Vegetation: black spruce, white spruce, paper birch, and aspen forest

Representative Profile:

Oi—0 to 5 inches; black slightly decomposed plant material, high permeability

A—5 to 7 inches; dark brown silt loam, moderately high permeability

BC—7 to 60 inches; brown and dark grayish brown stratified loamy fine sand to silt loam, moderately high permeability

Note: This soil has more than 40 inches of loamy material over sand and gravel.

Moosehead and similar soils

Extent: 25 to 35 percent of the map unit

Landform: stream terraces

Slope shape: linear
Slope range: 0 to 3 percent
Parent material: alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: moderately well drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches
Ponding: frequent
Available water capacity (approximate): 3.6 inches
Vegetation: paper birch, spruce, and aspen forest
Representative Profile:
 Oi—0 to 5 inches; dark brown slightly decomposed plant material, high permeability
 A—5 to 6 inches; dark grayish brown silt loam, moderately high permeability
 Bw—6 to 10 inches; dark brown stratified loamy fine sand to silt loam, high permeability
 2C—10 to 60 inches; dark brown very gravelly sand, high permeability
Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Tanana and similar soils: 0 to 10 percent of the map unit
 Jarvis and similar soils: 0 to 10 percent of the map unit

620—Gerstle-Tanana complex, 0 to 3 percent slopes

Elevation: 1,280 to 1,407 feet
Mean annual precipitation: 12 to 16 inches
Frost-free period: 75 to 104 days

Gerstle and similar soils

Extent: 80 to 90 percent of the map unit
Landform: stream terraces
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches
Ponding: frequent
Available water capacity (approximate): 11.1 inches
Vegetation: black spruce, white spruce, paper birch, and aspen forest
Representative Profile:
 Oi—0 to 5 inches; dark brown slightly decomposed plant material, high permeability
 A—5 to 7 inches; black silt loam, moderately high permeability
 BC—7 to 60 inches; brown and dark grayish brown stratified loamy fine sand to silt loam, moderately high permeability
Note: This soil has more than 40 inches of loamy material over sand and gravel.

Tanana and similar soils

Extent: 10 to 20 percent of the map unit

Landform: terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium loess over alluvium

Depth to permafrost: 16 to 47 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: very high

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to 12 inches

Ponding: frequent

Available water capacity (approximate): 5.2 inches

Vegetation: black spruce forest

Representative Profile:

Oi—0 to 3 inches; dark grayish brown slightly decomposed plant material, high permeability

A—3 to 6 inches; very dark grayish brown mucky silt loam, moderately high permeability

Bjgg—6 to 25 inches; very dark brown very fine sandy loam, moderately high permeability

Cjjgf—25 to 60 inches; dark grayish brown permanently frozen material, impermeable

621—Gravel pits

Elevation: 397 to 650 feet

Mean annual precipitation: 10 to 14 inches

Frost-free period: 80 to 120 days

Pits, gravel

Extent: 100 percent of the map unit

Landform: gravel pits

Slope shape: convex, concave, linear

Slope range: 0 to 60 percent

622—Histels, impact area

Elevation: 1,430 to 2,149 feet

Mean annual precipitation: 16 to 22 inches

Frost-free period: 75 to 105 days

Histels, outwash plains, and similar soils

Extent: 100 percent of the map unit

Landform: outwash plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: organic material over loess over outwash

Depth to permafrost: 12 to 28 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: low
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches
Ponding: none
Available water capacity (approximate): 10.7 inches
Representative Profile:
 Oe—0 to 20 inches; mucky peat, high permeability
 A—20 to 24 inches; silt loam, moderately high permeability
 Bjff—24 to 27 inches; permanently frozen silt loam, impermeable
 Cgf—27 to 34 inches; permanently frozen very fine sandy loam, impermeable
 Cf—34 to 60 inches; permanently frozen material, impermeable

623—Histels-Orthels-Turbels association

Elevation: 1,749 to 2,703 feet
Mean annual precipitation: 21 to 25 inches
Frost-free period: 75 to 105 days

Histels, outwash plains, and similar soils

Extent: 40 to 60 percent of the map unit
Landform: outwash plains
Slope shape: linear
Slope range: 0 to 5 percent
Parent material: organic material over loess over outwash
Depth to permafrost: 12 to 28 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches
Ponding: none
Available water capacity (approximate): 10.7 inches
Representative Profile:
 Oe—0 to 20 inches; mucky peat, high permeability
 A—20 to 24 inches; silt loam, moderately high permeability
 Bjff—24 to 27 inches; permanently frozen silt loam, impermeable
 Cgf—27 to 34 inches; permanently frozen very fine sandy loam, impermeable
 Cf—34 to 60 inches; permanently frozen material, impermeable

Orthels, outwash plains, and similar soils

Extent: 15 to 35 percent of the map unit
Landform: outwash plains
Slope shape: linear
Slope range: 0 to 5 percent
Parent material: organic material over loess over outwash
Depth to permafrost: 8 to 16 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to more than 60 inches

Ponding: none

Available water capacity (approximate): 3.5 inches

Representative Profile:

Oi—0 to 5 inches; slightly decomposed plant material, high permeability

OA—5 to 10 inches; mucky silt loam, moderately high permeability

A—10 to 13 inches; silt loam, moderately high permeability

Bf, Bfg—13 to 28 inches; permanently frozen silt loam, impermeable

Cfg—28 to 60 inches; permanently frozen sandy loam, impermeable

Turbels, outwash plains, and similar soils

Extent: 20 to 35 percent of the map unit

Landform: outwash plains

Slope shape: linear, concave

Slope range: 0 to 5 percent

Parent material: loess over outwash

Depth to permafrost: 10 to 24 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 13 inches

Ponding: none

Available water capacity (approximate): 3 inches

Representative Profile:

Oi—0 to 7 inches; slightly decomposed plant material, high permeability

Oe—7 to 10 inches; moderately decomposed plant material, high permeability

AO—10 to 13 inches; mucky silt loam, moderately high permeability

Bjff—13 to 18 inches; permanently frozen silt loam, impermeable

Cf1—18 to 20 inches; permanently frozen silt loam, impermeable

Cf2—20 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Dystrocryepts, outwash plains, and similar soils: 5 to 10 percent of the map unit

624—Histels-Orthels-Typic Dystrogelepts complex

Elevation: 2,333 to 3,379 feet

Mean annual precipitation: 23 to 27 inches

Frost-free period: 60 to 80 days

Histels, mountains, and similar soils

Extent: 40 to 60 percent of the map unit

Landform: mountains

Position on slope: footslopes, toeslopes, backslopes

Slope shape: linear, concave

Slope range: 10 to 45 percent

Parent material: organic material over loess over colluvium
Depth to permafrost: 10 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 22 inches
Ponding: none
Available water capacity (approximate): 6.4 inches
Representative Profile:
 Oi—0 to 3 inches; peat, high permeability
 Oa—3 to 15 inches; muck, moderately high permeability
 Oaf—15 to 20 inches; permanently frozen highly decomposed plant material, impermeable
 Oaf—20 to 24 inches; permanently frozen mucky fine sand, impermeable
 Cf—24 to 60 inches; permanently frozen material, impermeable

Orthels, mountains, and similar soils

Extent: 15 to 25 percent of the map unit
Landform: mountains
Position on slope: backslopes, footslopes
Slope shape: linear, concave
Slope range: 20 to 35 percent
Parent material: organic material over colluvium and/or eolian deposits over glaciofluvial deposits
Depth to permafrost: 9 to 31 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 15 inches
Ponding: none
Available water capacity (approximate): 4.3 inches
Representative Profile:
 Oi—0 to 2 inches; slightly decomposed plant material, high permeability
 Oa—2 to 7 inches; highly decomposed plant material, moderately high permeability
 A—7 to 9 inches; mucky silt loam, moderately high permeability
 2Bg—9 to 12 inches; sandy loam, high permeability
 2Cf—12 to 60 inches; permanently frozen gravelly loam, impermeable

Typic Dystrogelepts, mountains, and similar soils

Extent: 15 to 25 percent of the map unit
Landform: mountains
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 20 to 40 percent
Parent material: loess over colluvium and/or slope alluvium
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: well drained
Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 4.8 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability

AO—4 to 6 inches; mucky silt loam, moderately high permeability

Bw—6 to 9 inches; silt loam, moderately high permeability

2C1—9 to 18 inches; loamy very fine sand, high permeability

2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Minor Components

Typic Histoturbels, mountains, and similar soils: 5 to 15 percent of the map unit

625—Histels-Turbels association

Elevation: 2,149 to 3,159 feet

Mean annual precipitation: 27 to 28 inches

Frost-free period: 70 to 95 days

Histels, high moraines, and similar soils

Extent: 35 to 55 percent of the map unit

Landform: moraines, till plains

Slope shape: linear, concave

Slope range: 0 to 3 percent

Parent material: loess over till

Depth to permafrost: 16 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 22 inches

Ponding: none

Available water capacity (approximate): 10.6 inches

Representative Profile:

Oe—0 to 4 inches; mucky peat, high permeability

Oa—4 to 22 inches; muck, moderately high permeability

OAJjf—22 to 28 inches; permanently frozen mucky silt loam, impermeable

Bf—28 to 60 inches; permanently frozen material, impermeable

Turbels, high moraines, and similar soils

Extent: 35 to 55 percent of the map unit

Landform: moraines

Position on slope: shoulders, footslopes, backslopes

Slope shape: linear, concave

Slope range: 0 to 10 percent

Parent material: loess over till

Depth to permafrost: 8 to 16 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 12 inches

Ponding: none

Available water capacity (approximate): 3.3 inches

Representative Profile:

Oi—0 to 6 inches; peat, high permeability

Oe—6 to 11 inches; mucky peat, high permeability

OA—11 to 12 inches; mucky silt loam, moderately high permeability

Bjff—12 to 24 inches; permanently frozen loam, impermeable

Cf—24 to 60 inches; permanently frozen material, impermeable

Minor Components

Orthels, high moraines, and similar soils: 5 to 15 percent of the map unit

626—Histels-Typic Cryaquepts-Typic Dystrcryepts complex

Elevation: 1,834 to 2,684 feet

Mean annual precipitation: 21 to 21 inches

Frost-free period: 70 to 95 days

Histels, high moraines, and similar soils

Extent: 50 to 65 percent of the map unit

Landform: moraines, till plains

Slope shape: linear, concave

Slope range: 0 to 5 percent

Parent material: loess over till

Depth to permafrost: 16 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 22 inches

Ponding: none

Available water capacity (approximate): 10.6 inches

Representative Profile:

Oe—0 to 4 inches; mucky peat, high permeability

Oa—4 to 22 inches; muck, moderately high permeability

OAjff—22 to 28 inches; permanently frozen mucky silt loam, impermeable

Bf—28 to 60 inches; permanently frozen material, impermeable

Typic Cryaquepts, high moraines, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: moraines

Slope shape: concave

Slope range: 0 to 10 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: high

Drainage class: poorly drained

Flooding: occasional

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 16 inches

Ponding: occasional

Available water capacity (approximate): 7.8 inches

Representative Profile:

OA—0 to 4 inches; mucky silt loam, moderately high permeability

2Bg—4 to 12 inches; gravelly sandy loam, high permeability

2C—12 to 60 inches; gravelly sandy loam, high permeability

Typic Dystricrypts, high moraines, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: moraines

Position on slope: shoulders, backslopes, summits

Slope shape: linear, convex

Slope range: 10 to 20 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 5.8 inches

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, high permeability

A—2 to 3 inches; silt loam, moderately high permeability

2Bw—3 to 4 inches; gravelly sandy loam, high permeability

2BC—4 to 9 inches; gravelly sandy loam, high permeability

2C—9 to 60 inches; gravelly sandy loam, high permeability

Minor Components

Typic Haplorthels, high moraines, and similar soils: 5 to 15 percent of the map unit

627—Histels-Typic Histoturbels-Typic Historthels complex

Elevation: 1,145 to 2,467 feet

Mean annual precipitation: 14 to 21 inches

Frost-free period: 75 to 105 days

Histels, river valleys, and similar soils

Extent: 25 to 35 percent of the map unit

Landform: terraces

Slope shape: linear

Slope range: 0 to 5 percent

Parent material: organic material over loess

Depth to permafrost: 16 to 24 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—4 to 16 inches

Ponding: none

Available water capacity (approximate): 4.4 inches

Representative Profile:

Oi—0 to 13 inches; peat, high permeability

Oa—13 to 18 inches; muck, moderately high permeability

Bjjgf—18 to 60 inches; permanently frozen silt loam, impermeable

Typic Histoturbels, river valleys, and similar soils

Extent: 25 to 35 percent of the map unit

Landform: terraces

Slope shape: linear, concave

Slope range: 0 to 5 percent

Parent material: organic material over loess

Depth to permafrost: 10 to 18 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 10 inches

Ponding: none

Available water capacity (approximate): 5 inches

Representative Profile:

Oe—0 to 7 inches; mucky peat, high permeability

Oi—7 to 12 inches; peat, high permeability

A—12 to 15 inches; mucky silt loam, moderately high permeability

Bjjgf—15 to 60 inches; permanently frozen very fine sandy loam, impermeable

Typic Historthels, river valleys, and similar soils

Extent: 15 to 30 percent of the map unit

Landform: alluvial fans, stream terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: loess over alluvium

Depth to permafrost: 8 to 17 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches

Ponding: frequent

Available water capacity (approximate): 3.1 inches

Representative Profile:

Oi—0 to 5 inches; peat, high permeability

Oe—5 to 10 inches; mucky peat, high permeability

Af—10 to 12 inches; permanently frozen silt loam, impermeable

Bf—12 to 16 inches; permanently frozen silt loam, impermeable

Cf—16 to 60 inches; permanently frozen material, impermeable

Typic Aquiturbels, river valleys, and similar soils

Extent: 5 to 10 percent of the map unit

Landform: outwash plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: loess over outwash

Depth to permafrost: 6 to 18 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches

Ponding: frequent

Available water capacity (approximate): 2.4 inches

Representative Profile:

Oe—0 to 4 inches; moderately decomposed plant material, high permeability

OA—4 to 6 inches; mucky silt loam, moderately high permeability

Bjff—6 to 16 inches; permanently frozen silt loam, impermeable

Cf—16 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Cryofluvents, river valleys, and similar soils: 5 to 10 percent of the map unit

Typic Dystrocryepts, river valleys, and similar soils: 0 to 5 percent of the map unit

628—Humic Dystrocryepts-Aquic Umbrorthels complex

Elevation: 1,873 to 3,944 feet

Mean annual precipitation: 22 to 36 inches

Frost-free period: 70 to 95 days

Humic Dystrocryepts, high moraines, and similar soils

Extent: 40 to 60 percent of the map unit

Landform: moraines

Position on slope: backslopes, shoulders

Slope shape: linear, concave

Slope range: 50 to 60 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.8 inches

Representative Profile:

Oi—0 to 2 inches; slightly decomposed plant material, high permeability

A—2 to 12 inches; silt loam, moderately high permeability

2C—12 to 60 inches; gravelly loamy sand, high permeability

Aquic Umbrorthels, high moraines, and similar soils

Extent: 30 to 50 percent of the map unit

Landform: moraines

Position on slope: backslopes

Slope shape: linear

Slope range: 20 to 35 percent

Parent material: loess over till

Depth to permafrost: 20 to 28 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 12 inches

Ponding: none

Available water capacity (approximate): 4.7 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability

OA—4 to 12 inches; mucky silt loam, moderately high permeability

A—12 to 17 inches; gravelly silt loam, moderately high permeability

2Bg—17 to 28 inches; very gravelly sandy loam, high permeability

Cf—28 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Dystrocryepts, high moraines, and similar soils: 5 to 15 percent of the map unit

629—Jarvis very fine sandy loam

Elevation: 1,175 to 2,096 feet

Mean annual precipitation: 15 to 22 inches

Frost-free period: 75 to 104 days

Jarvis and similar soils

Extent: 70 to 95 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-May—0 to more than 60 inches; June-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 6.5 inches

Vegetation: white spruce, balsam poplar, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; gray moderately decomposed plant material, moderately high permeability

AC—2 to 6 inches; grayish brown very fine sandy loam, moderately high permeability

C1—6 to 24 inches; olive brown stratified sand to fine sand to very fine sandy loam, moderately high permeability

C2—24 to 60 inches; black very cobbly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Salchaket and similar soils: 5 to 15 percent of the map unit

Chena and similar soils: 0 to 10 percent of the map unit

Tanana and similar soils: 0 to 10 percent of the map unit

630—Jarvis very fine sandy loam, flooded

Elevation: 1,263 to 1,762 feet

Mean annual precipitation: 10 to 15 inches

Frost-free period: 75 to 104 days

Jarvis and similar soils

Extent: 80 to 95 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-May—0 to more than 60 inches; June-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 6.5 inches

Vegetation: balsam poplar, willow, silverberry, and white spruce scrub

Representative Profile:

Oe—0 to 2 inches; gray moderately decomposed plant material, moderately high permeability

AC—2 to 6 inches; grayish brown very fine sandy loam, moderately high permeability

C1—6 to 24 inches; olive brown stratified sand to fine sand to very fine sandy loam, moderately high permeability

C2—24 to 60 inches; black very cobbly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Riverwash: 0 to 20 percent of the map unit

Salchaket and similar soils: 0 to 10 percent of the map unit

631—Jarvis-Chena complex

Elevation: 1,237 to 1,768 feet

Mean annual precipitation: 10 to 15 inches

Frost-free period: 75 to 104 days

Jarvis and similar soils

Extent: 50 to 60 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 2 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-May—0 to more than 60 inches; June-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 6.5 inches

Vegetation: white spruce, balsam poplar, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; olive brown moderately decomposed plant material, moderately high permeability

AC—2 to 6 inches; grayish brown very fine sandy loam, moderately high permeability

C1—6 to 24 inches; gray stratified sand to fine sand to very fine sandy loam, moderately high permeability

C2—24 to 60 inches; black very cobbly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Chena and similar soils

Extent: 30 to 50 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 2 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: very low

Drainage class: excessively drained

Flooding: rare

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.5 inches

Vegetation: white spruce and balsam poplar forest

Representative Profile:

Oi—0 to 4 inches; olive brown slightly decomposed plant material, high permeability

C1—4 to 9 inches; grayish brown stratified fine sand to silt loam, high permeability

2C2—9 to 60 inches; very dark gray very gravelly sand, high permeability

Note: This soil has 0 to 10 inches of loamy material over sand and gravel.

Minor Components

Salchaket and similar soils: 0 to 10 percent of the map unit

Tanana and similar soils: 0 to 5 percent of the map unit

632—Jarvis-Chena complex, flooded

Elevation: 1,257 to 1,788 feet
Mean annual precipitation: 10 to 15 inches
Frost-free period: 75 to 104 days

Chena and similar soils

Extent: 45 to 55 percent of the map unit
Landform: stream terraces
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: very low
Drainage class: excessively drained
Flooding: rare
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.5 inches
Vegetation: balsam poplar, willow, silverberry, and white spruce scrub
Representative Profile:
 Oi—0 to 4 inches; very dark gray slightly decomposed plant material, high permeability
 C1—4 to 9 inches; olive brown stratified fine sand to silt loam, high permeability
 2C2—9 to 60 inches; grayish brown very gravelly sand, high permeability
Note: This soil has 0 to 10 inches of loamy material over sand and gravel.

Jarvis and similar soils

Extent: 40 to 50 percent of the map unit
Landform: flood plains
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: low
Drainage class: well drained
Flooding: rare
Depth to high water table (approximate): April-May—0 to more than 60 inches; June-Sept.—more than 60 inches
Ponding: occasional
Available water capacity (approximate): 6.5 inches
Vegetation: balsam poplar, willow, silverberry, and white spruce scrub
Representative Profile:
 Oe—0 to 2 inches; grayish brown moderately decomposed plant material, moderately high permeability
 AC—2 to 6 inches; gray very fine sandy loam, moderately high permeability
 C1—6 to 24 inches; black stratified sand to fine sand to very fine sandy loam, moderately high permeability
 C2—24 to 60 inches; olive brown very cobbly sand, high permeability
Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Riverwash: 0 to 10 percent of the map unit

633—Jarvis-Salchaket complex

Elevation: 1,214 to 2,047 feet

Mean annual precipitation: 12 to 16 inches

Frost-free period: 75 to 104 days

Jarvis and similar soils

Extent: 45 to 65 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 2 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-May—0 to more than 60 inches; June-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 6.5 inches

Vegetation: white spruce, balsam poplar, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; black moderately decomposed plant material, moderately high permeability

AC—2 to 6 inches; olive brown very fine sandy loam, moderately high permeability

C1—6 to 24 inches; grayish brown stratified sand to fine sand to very fine sandy loam, moderately high permeability

C2—24 to 60 inches; gray very cobbly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Salchaket and similar soils

Extent: 30 to 55 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 2 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: frequent

Available water capacity (approximate): 9.7 inches

Vegetation: white spruce, balsam poplar, and paper birch forest

Representative Profile:

Oi—0 to 3 inches; dark grayish brown slightly decomposed plant material, high permeability

C1—3 to 24 inches; variegated very fine sandy loam, moderately high permeability

C2—24 to 45 inches; dark brown stratified silt loam to fine sand, moderately high permeability

2C3—45 to 60 inches; olive brown very gravelly sand, high permeability

Note: This soil has more than 40 inches of loamy material over sand and gravel.

Minor Components

Chena and similar soils: 3 to 5 percent of the map unit

Tanana and similar soils: 3 to 5 percent of the map unit

634—Lithic Cryofolists-Typic Cryorthents-Typic Dystroglepts complex

Elevation: 2,447 to 6,181 feet

Mean annual precipitation: 28 to 37 inches

Frost-free period: 60 to 80 days

Lithic Cryofolists, mountains, and similar soils

Extent: 25 to 50 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 10 to 55 percent

Parent material: loess over residuum

Depth to bedrock (lithic): 4 to 14 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 1.5 inches

Representative Profile:

Oi—0 to 8 inches; peat, high permeability

A—8 to 10 inches; silt loam, high permeability

R—10 to 60 inches; bedrock, impermeable

Typic Cryorthents, mountains, and similar soils

Extent: 25 to 35 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 26 to 45 percent

Parent material: colluvium

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 2 inches

Representative Profile:

Oe—0 to 4 inches; moderately decomposed plant material, high permeability

A/C—4 to 6 inches; silt loam, moderately high permeability

2C—6 to 60 inches; extremely gravelly loamy coarse sand, high permeability

Typic Dystroglepts, mountains, and similar soils

Extent: 15 to 20 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 10 to 20 percent

Parent material: loess over colluvium and/or slope alluvium

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 4.8 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability

AO—4 to 6 inches; mucky silt loam, moderately high permeability

Bw—6 to 9 inches; silt loam, moderately high permeability

2C1—9 to 18 inches; loamy very fine sand, high permeability

2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Typic Histoturbels, mountains, and similar soils

Extent: 20 to 30 percent of the map unit

Landform: mountains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 8 to 35 percent

Parent material: loess over colluvium and/or glaciofluvial deposits

Depth to permafrost: 8 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 5.8 inches

Representative Profile:

Oi—0 to 3 inches; peat, high permeability

Oe—3 to 6 inches; mucky peat, high permeability

OA—6 to 13 inches; mucky silt loam, moderately high permeability

Bw—13 to 18 inches; silt loam, moderately high permeability

2BCjff—18 to 60 inches; permanently frozen gravelly silt loam, impermeable

Minor Components

Rock outcrop and Rubble land: 0 to 25 percent of the map unit

635—McKinley stony mucky silt loam, 12 to 20 percent slopes

Elevation: 2,887 to 3,891 feet
Mean annual precipitation: 26 to 301 inches
Frost-free period: 65 to 95 days

McKinley, moderately steep, and similar soils

Extent: 85 to 95 percent of the map unit
Landform: hills
Position on slope: summits, backslopes, shoulders
Slope shape: linear, convex
Slope range: 12 to 20 percent
Parent material: colluvium over residuum weathered from mica schist
Depth to bedrock (paralithic): 20 to 40 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 1.8 inches
Representative Profile:
 A—0 to 2 inches; gravelly mucky silt loam, high permeability
 2Bw—2 to 12 inches; extremely stony sandy loam, high permeability
 2BC—12 to 26 inches; extremely stony sandy loam, high permeability
 2C—26 to 30 inches; extremely stony sandy loam, high permeability
 2Cr—30 to 60 inches; bedrock, impermeable

Minor Components

McKinley, steep, and similar soils: 5 to 15 percent of the map unit

636—McKinley stony mucky silt loam, 40 to 70 percent slopes

Elevation: 2,283 to 3,891 feet
Mean annual precipitation: 26 to 30 inches
Frost-free period: 65 to 95 days

McKinley, very steep, and similar soils

Extent: 80 to 95 percent of the map unit
Landform: hills
Position on slope: backslopes, shoulders, summits
Slope shape: convex, linear
Slope range: 40 to 70 percent
Parent material: colluvium over residuum weathered from mica schist
Depth to bedrock (paralithic): 20 to 40 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 1.8 inches

Representative Profile:

A—0 to 2 inches; gravelly mucky silt loam, high permeability

2Bw—2 to 12 inches; extremely stony sandy loam, high permeability

2BC—12 to 26 inches; extremely stony sandy loam, high permeability

2C—26 to 30 inches; extremely stony sandy loam, high permeability

2Cr—30 to 60 inches; bedrock, impermeable

Minor Components

Typic Eutrocryepts and similar soils: 5 to 15 percent of the map unit

McKinley, steep, and similar soils: 0 to 10 percent of the map unit

637—Moosehead fine sandy loam, 0 to 3 percent slopes

Elevation: 1,522 to 1,946 feet

Mean annual precipitation: 12 to 16 inches

Frost-free period: 75 to 104 days

Moosehead and similar soils

Extent: 85 to 95 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: frequent

Available water capacity (approximate): 3.6 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 5 inches; dark brown slightly decomposed plant material, high permeability

A—5 to 6 inches; dark grayish brown silt loam, moderately high permeability

Bw—6 to 10 inches; dark brown stratified loamy fine sand to silt loam, high permeability

2C—10 to 60 inches; dark brown very gravelly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Gerstle and similar soils: 5 to 15 percent of the map unit

638—Mosquito peat

Elevation: 1,316 to 2,018 feet
Mean annual precipitation: 10 to 14 inches
Frost-free period: 75 to 104 days

Mosquito and similar soils

Extent: 70 to 90 percent of the map unit
Landform: depressions on alluvial flats
Slope shape: linear, concave
Slope range: 0 to 3 percent
Parent material: organic material over alluvium
Depth to permafrost: 14 to 31 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: very high
Drainage class: very poorly drained
Flooding: rare
Depth to high water table (approximate): April-Sept.—0 inches
Ponding: frequent
Available water capacity (approximate): 4.1 inches
Representative Profile:
 Oi—0 to 18 inches; black peat, high permeability
 Cg—18 to 42 inches; dark grayish brown very fine sandy loam, moderately high permeability
 Cfg—42 to 60 inches; black permanently frozen material, impermeable

Minor Components

Tanana and similar soils: 5 to 10 percent of the map unit
 Terric Hemistels and similar soils: 5 to 15 percent of the map unit

639—Nenana silt loam, 0 to 3 percent slopes

Elevation: 1,194 to 1,765 feet
Mean annual precipitation: 12 to 16 inches
Frost-free period: 75 to 104 days

Nenana and similar soils

Extent: 75 to 95 percent of the map unit
Landform: stream terraces
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: loess over alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: occasional
Available water capacity (approximate): 5.9 inches
Vegetation: white spruce, quaking aspen, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; dark brown moderately decomposed plant material, moderately high permeability

Bw—2 to 15 inches; strong brown silt loam, moderately high permeability

BC—15 to 21 inches; dark yellowish brown gravelly silt loam, moderately high permeability

2C—21 to 60 inches; brown extremely gravelly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Donnelly and similar soils: 5 to 15 percent of the map unit

Volkmar and similar soils: 0 to 10 percent of the map unit

640—Nenana-Donnelly complex, hilly

Elevation: 1,375 to 2,096 feet

Mean annual precipitation: 14 to 18 inches

Frost-free period: 75 to 104 days

Nenana and similar soils

Extent: 55 to 85 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 35 percent

Parent material: loess over alluvium

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 5.9 inches

Vegetation: white spruce, quaking aspen, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; dark brown moderately decomposed plant material, moderately high permeability

Bw—2 to 15 inches; strong brown silt loam, moderately high permeability

BC—15 to 21 inches; dark yellowish brown gravelly silt loam, moderately high permeability

2C—21 to 60 inches; brown extremely gravelly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Donnelly and similar soils

Extent: 10 to 20 percent of the map unit

Landform: stream terraces

Position on slope: backslopes

Slope shape: linear

Slope range: 0 to 35 percent

Parent material: loess over sandy and gravelly alluvium

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: somewhat excessively drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.4 inches

Vegetation: open black spruce forest or birch scrub

Representative Profile:

Oi—0 to 2 inches; very dark brown slightly decomposed plant material, high permeability

Bw—2 to 6 inches; dark yellowish brown gravelly silt loam, moderately high permeability

2BC—6 to 12 inches; variegated gravelly silt loam, high permeability

2C—12 to 60 inches; very dark brown very gravelly sand, high permeability

Note: This soil has less than 10 inches of loamy material over sand and gravel.

Minor Components

Typic Aquiturbels and similar soils: 5 to 15 percent of the map unit

Volkmar and similar soils: 0 to 10 percent of the map unit

Water: 0 to 10 percent of the map unit

641—Nenana-Donnelly complex, rolling

Elevation: 1,453 to 2,155 feet

Mean annual precipitation: 10 to 15 inches

Frost-free period: 75 to 104 days

Nenana and similar soils

Extent: 70 to 85 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 15 percent

Parent material: loess over alluvium

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 5.9 inches

Vegetation: white spruce, quaking aspen, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; dark brown moderately decomposed plant material, moderately high permeability

Bw—2 to 15 inches; strong brown silt loam, moderately high permeability

BC—15 to 21 inches; dark yellowish brown gravelly silt loam, moderately high permeability

2C—21 to 60 inches; brown extremely gravelly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Donnelly and similar soils

Extent: 10 to 20 percent of the map unit

Landform: stream terraces
Position on slope: backslopes
Slope shape: linear
Slope range: 0 to 15 percent
Parent material: loess over sandy and gravelly alluvium
Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate
Runoff: medium
Drainage class: somewhat excessively drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.4 inches
Vegetation: open black spruce forest or birch scrub
Representative Profile:
 Oi—0 to 2 inches; very dark brown slightly decomposed plant material, high permeability
 Bw—2 to 6 inches; dark yellowish brown gravelly silt loam, moderately high permeability
 2BC—6 to 12 inches; variegated gravelly silt loam, high permeability
 2C—12 to 60 inches; very dark brown very gravelly sand, high permeability
Note: This soil has less than 10 inches of loamy material over sand and gravel.

Minor Components

Volkmar and similar soils: 0 to 15 percent of the map unit

642—Nenana-Urban Land complex, 0 to 3 percent slopes

Elevation: 1,220 to 1,329 feet
Mean annual precipitation: 11 to 15 inches
Frost-free period: 75 to 104 days

Nenana and similar soils

Extent: 55 to 65 percent of the map unit
Landform: stream terraces
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: loess over alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: occasional
Available water capacity (approximate): 5.9 inches
Vegetation: white spruce, quaking aspen, and paper birch forest
Representative Profile:
 Oe—0 to 2 inches; dark brown moderately decomposed plant material, moderately high permeability
 Bw—2 to 15 inches; brown silt loam, moderately high permeability
 BC—15 to 21 inches; dark yellowish brown gravelly silt loam, moderately high permeability
 2C—21 to 60 inches; strong brown extremely gravelly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Urban land

Extent: 25 to 35 percent of the map unit

Slope range: 0 to 3 percent

Minor Components

Typic Cryorthents and similar soils: 5 to 15 percent of the map unit

643—Ninchuun silt loam, 0 to 15 percent slopes

Elevation: 1,437 to 1,965 feet

Mean annual precipitation: 12 to 16 inches

Frost-free period: 75 to 104 days

Ninchuun and similar soils

Extent: 75 to 90 percent of the map unit

Landform: moraines

Position on slope: footslopes, backslopes

Slope shape: linear, concave

Slope range: 0 to 15 percent

Parent material: loess over glaciofluvial deposits

Depth to permafrost: 16 to 33 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.6 inches

Vegetation: black spruce forest

Representative Profile:

Oe—0 to 6 inches; moderately decomposed plant material, moderately high permeability

A—6 to 12 inches; silt loam, moderately high permeability

Bg/Ajj—12 to 16 inches; silt loam, moderately high permeability

Bjgg—16 to 20 inches; silt loam, moderately high permeability

Bjjgf—20 to 32 inches; permanently frozen silt loam, impermeable

2Cf—32 to 60 inches; permanently frozen gravelly sandy loam, impermeable

Minor Components

Audrey and similar soils: 5 to 20 percent of the map unit

Typic Aquiturbels and similar soils: 5 to 10 percent of the map unit

Ninchuun, steep, and similar soils: 0 to 5 percent of the map unit

Typic Cryaquepts and similar soils: 0 to 5 percent of the map unit

644—Ninchuun-Audrey complex, 0 to 7 percent slopes

Elevation: 1,352 to 1,824 feet
Mean annual precipitation: 12 to 15 inches
Frost-free period: 75 to 104 days

Ninchuun and similar soils

Extent: 30 to 60 percent of the map unit
Landform: moraines
Position on slope: footslopes, backslopes
Slope shape: linear, concave
Slope range: 0 to 7 percent
Parent material: loess over glaciofluvial deposits
Depth to permafrost: 16 to 33 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches
Ponding: frequent
Available water capacity (approximate): 5.6 inches
Vegetation: black spruce forest
Representative Profile:
 Oe—0 to 6 inches; moderately decomposed plant material, moderately high permeability
 A—6 to 12 inches; silt loam, moderately high permeability
 Bg/Ajj—12 to 16 inches; silt loam, moderately high permeability
 Bjgg—16 to 20 inches; silt loam, moderately high permeability
 Bjggf—20 to 32 inches; permanently frozen silt loam, impermeable
 2Cf—32 to 60 inches; permanently frozen gravelly sandy loam, impermeable

Audrey and similar soils

Extent: 30 to 60 percent of the map unit
Landform: hills on moraines
Position on slope: shoulders, summits, footslopes, backslopes
Slope shape: linear, concave, convex
Slope range: 0 to 7 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: low
Drainage class: moderately well drained
Flooding: none
Depth to high water table (approximate): April-May—4 to 8 inches; June-Sept.—8 to more than 60 inches
Ponding: none
Available water capacity (approximate): 8.5 inches
Vegetation: black spruce, white spruce, and paper birch forest
Representative Profile:
 Oe—0 to 1 inch; moderately decomposed plant material, moderately high permeability
 A—1 to 8 inches; silt loam, moderately high permeability
 Bw/Ajj—8 to 17 inches; silt loam, moderately high permeability
 2BC—17 to 28 inches; cobbly very fine sandy loam, high permeability

2C—28 to 60 inches; very gravelly sandy loam, high permeability

Minor Components

Southpaw and similar soils: 0 to 10 percent of the map unit

Typic Aquiturbels and similar soils: 5 to 10 percent of the map unit

645—Ninchuun-Audrey complex, 0 to 35 percent slopes

Elevation: 1,447 to 2,329 feet

Mean annual precipitation: 12 to 16 inches

Frost-free period: 75 to 104 days

Ninchuun and similar soils

Extent: 70 to 85 percent of the map unit

Landform: moraines

Position on slope: footslopes, backslopes

Slope shape: linear, concave

Slope range: 0 to 35 percent

Parent material: loess over glaciofluvial deposits

Depth to permafrost: 16 to 33 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.6 inches

Vegetation: black spruce forest

Representative Profile:

Oe—0 to 6 inches; moderately decomposed plant material, moderately high permeability

A—6 to 12 inches; silt loam, moderately high permeability

Bg/Ajj—12 to 16 inches; silt loam, moderately high permeability

Bjgg—16 to 20 inches; silt loam, moderately high permeability

Bjjgf—20 to 32 inches; permanently frozen silt loam, impermeable

2Cf—32 to 60 inches; permanently frozen gravelly sandy loam, impermeable

Audrey and similar soils

Extent: 10 to 20 percent of the map unit

Landform: hills on moraines

Position on slope: shoulders, summits, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 35 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: medium

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 8 inches; June-Sept.—8 to more than 60 inches

Ponding: none

Available water capacity (approximate): 8.5 inches

Vegetation: black spruce, white spruce, and paper birch forest

Representative Profile:

Oe—0 to 1 inch; moderately decomposed plant material, moderately high permeability

A—1 to 8 inches; silt loam, moderately high permeability

Bw/Ajj—8 to 17 inches; silt loam, moderately high permeability

2BC—17 to 28 inches; cobbly very fine sandy loam, high permeability

2C—28 to 60 inches; very gravelly sandy loam, high permeability

Minor Components

Typic Aquiturbels and similar soils: 5 to 15 percent of the map unit

646—Nomeracy Lake-Butchlake-Water complex, 0 to 35 percent slopes

Elevation: 1,299 to 2,835 feet

Mean annual precipitation: 17 to 21 inches

Frost-free period: 50 to 104 days

Nomeracy Lake and similar soils

Extent: 30 to 40 percent of the map unit

Landform: hills on moraines

Slope shape: linear, convex, concave

Slope range: 0 to 35 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 5.9 inches

Vegetation: sparse vegetation of aspen scrub, low shrubs, and lichens

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, high permeability

Bw1—2 to 4 inches; silt loam, moderately high permeability

2Bw2—4 to 13 inches; gravelly fine sandy loam, high permeability

2C—13 to 60 inches; very gravelly fine sandy loam, high permeability

Butchlake and similar soils

Extent: 20 to 30 percent of the map unit

Landform: hills on moraines

Position on slope: backslopes, shoulders, summits, footslopes

Slope shape: linear, convex

Slope range: 0 to 35 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 3 inches; slightly decomposed plant material, high permeability

A—3 to 4 inches; mucky silt loam, moderately high permeability

Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability

2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Water

Extent: 10 to 30 percent of the map unit

Landform: lakes

Minor Components

Typic Cryaquepts and similar soils: 5 to 10 percent of the map unit

Typic Aquiturbels and similar soils: 5 to 10 percent of the map unit

Butchlake, very steep, and similar soils: 3 to 10 percent of the map unit

Terric Hemistels and similar soils: 0 to 2 percent of the map unit

647—Riverwash

Elevation: 397 to 1,640 feet

Mean annual precipitation: 10 to 14 inches

Frost-free period: 75 to 104 days

Riverwash

Extent: 100 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 2 percent

648—Salchaket very fine sandy loam

Elevation: 1,181 to 1,870 feet

Mean annual precipitation: 13 to 15 inches

Frost-free period: 75 to 104 days

Salchaket and similar soils

Extent: 80 to 95 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: frequent

Available water capacity (approximate): 9.7 inches

Vegetation: white spruce, balsam poplar, and paper birch forest

Representative Profile:

Oi—0 to 3 inches; variegated slightly decomposed plant material, high permeability

C1—3 to 24 inches; dark grayish brown very fine sandy loam, moderately high permeability

C2—24 to 45 inches; olive brown stratified silt loam to fine sand, moderately high permeability

2C3—45 to 60 inches; dark brown very gravelly sand, high permeability

Note: This soil has more than 40 inches of loamy material over sand and gravel.

Minor Components

Jarvis and similar soils: 5 to 10 percent of the map unit

Chena and similar soils: 0 to 10 percent of the map unit

Tanana and similar soils: 0 to 5 percent of the map unit

649—Salchaket very fine sandy loam, flooded

Elevation: 1,401 to 1,526 feet

Mean annual precipitation: 10 to 15 inches

Frost-free period: 75 to 104 days

Salchaket and similar soils

Extent: 85 to 100 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: frequent

Available water capacity (approximate): 9.7 inches

Vegetation: white spruce, balsam poplar, and paper birch forest

Representative Profile:

Oi—0 to 3 inches; dark brown slightly decomposed plant material, high permeability

C1—3 to 24 inches; olive brown very fine sandy loam, moderately high permeability

C2—24 to 45 inches; variegated stratified silt loam to fine sand, moderately high permeability

2C3—45 to 60 inches; dark grayish brown very gravelly sand, high permeability

Note: This soil has more than 40 inches of loamy material over sand and gravel.

Minor Components

Jarvis and similar soils: 0 to 10 percent of the map unit

Riverwash: 0 to 10 percent of the map unit

650—Tanacross peat

Elevation: 1,654 to 1,804 feet
Mean annual precipitation: 10 to 14 inches
Frost-free period: 75 to 104 days

Tanacross and similar soils

Extent: 80 to 95 percent of the map unit
Landform: alluvial flats
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: organic material over alluvium
Depth to permafrost: 10 to 28 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: very high
Drainage class: poorly drained
Flooding: rare
Depth to high water table (approximate): April-Sept.—0 inches
Ponding: frequent
Available water capacity (approximate): 3 inches
Vegetation: stunted black spruce, low shrubs, and moss
Representative Profile:
 Oi—0 to 9 inches; dark gray and dark yellowish brown peat, high permeability
 A—9 to 11 inches; dark brown mucky silt loam, moderately high permeability
 Bjjg—11 to 17 inches; black stratified fine sandy loam to silt loam, moderately high permeability
 Cf—17 to 60 inches; dark gray and dark yellowish brown permanently frozen material, impermeable

Minor Components

Jarvis and similar soils: 0 to 20 percent of the map unit
 Tanana and similar soils: 0 to 10 percent of the map unit

651—Tanana silt loam

Elevation: 1,197 to 2,064 feet
Mean annual precipitation: 13 to 20 inches
Frost-free period: 75 to 104 days

Tanana and similar soils

Extent: 80 to 95 percent of the map unit
Landform: terraces
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: alluvium loess over alluvium
Depth to permafrost: 16 to 47 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: very high

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to 12 inches

Ponding: frequent

Available water capacity (approximate): 5.2 inches

Vegetation: black spruce forest

Representative Profile:

Oi—0 to 3 inches; dark grayish brown slightly decomposed plant material, high permeability

A—3 to 6 inches; very dark grayish brown mucky silt loam, moderately high permeability

Bjgg—6 to 25 inches; very dark brown very fine sandy loam, moderately high permeability

Cjjgf—25 to 60 inches; dark grayish brown permanently frozen material, impermeable

Minor Components

Jarvis and similar soils: 0 to 10 percent of the map unit

Salchaket and similar soils: 0 to 5 percent of the map unit

Tanacross and similar soils: 0 to 5 percent of the map unit

652—Terric Fibristels-Ruptic-Histic Aquiturbels-Typic Aquiturbels complex

Elevation: 1,407 to 1,985 feet

Mean annual precipitation: 16 to 20 inches

Frost-free period: 75 to 105 days

Terric Fibristels, river valleys, and similar soils

Extent: 35 to 45 percent of the map unit

Landform: terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: organic material over loess

Depth to permafrost: 16 to 24 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—4 to 16 inches

Ponding: none

Available water capacity (approximate): 4.4 inches

Representative Profile:

Oi—0 to 13 inches; peat, high permeability

Oa—13 to 18 inches; muck, moderately high permeability

Bjjgf—18 to 60 inches; permanently frozen silt loam, impermeable

Ruptic-Histic Aquiturbels, river valleys, and similar soils

Extent: 35 to 45 percent of the map unit

Landform: outwash plains
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: loess
Depth to permafrost: 6 to 18 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: very high
Drainage class: poorly drained
Flooding: rare
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches
Ponding: frequent
Available water capacity (approximate): 2.1 inches
Representative Profile:
 Oi—0 to 4 inches; peat, high permeability
 Oe—4 to 7 inches; mucky peat, high permeability
 OA—7 to 8 inches; mucky silt loam, moderately high permeability
 Bjff—8 to 28 inches; permanently frozen silt loam, impermeable
 Cf2—28 to 60 inches; permanently frozen material, impermeable

Typic Aquiturbels, river valleys, and similar soils

Extent: 5 to 15 percent of the map unit
Landform: outwash plains
Slope shape: linear
Slope range: 0 to 5 percent
Parent material: loess over outwash
Depth to permafrost: 6 to 18 inches
Hazard of erosion (organic mat removed): by water—moderate; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: rare
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches
Ponding: frequent
Available water capacity (approximate): 2.4 inches
Representative Profile:
 Oe—0 to 4 inches; moderately decomposed plant material, high permeability
 OA—4 to 6 inches; mucky silt loam, moderately high permeability
 Bjff—6 to 16 inches; permanently frozen silt loam, impermeable
 Cf—16 to 60 inches; permanently frozen material, impermeable

Typic Histoturbels, river valleys, and similar soils

Extent: 0 to 5 percent of the map unit
Landform: outwash plains
Slope shape: linear, concave
Slope range: 0 to 5 percent
Parent material: organic material over loess
Depth to permafrost: 10 to 18 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 10 inches

Ponding: none

Available water capacity (approximate): 5 inches

Representative Profile:

Oe—0 to 7 inches; mucky peat, high permeability

Oi—7 to 12 inches; peat, high permeability

A—12 to 15 inches; mucky silt loam, moderately high permeability

Bjjgf—15 to 60 inches; permanently frozen very fine sandy loam, impermeable

653—Terric Fibristels-Typic Histoturbels, complex

Elevation: 1,250 to 1,404 feet

Mean annual precipitation: 15 to 16 inches

Frost-free period: 70 to 95 days

Terric Fibristels, moraines, and similar soils

Extent: 50 to 70 percent of the map unit

Landform: moraines

Slope shape: linear

Slope range: 0 to 5 percent

Parent material: loess over till

Depth to permafrost: 16 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: low

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 18 inches

Ponding: occasional

Available water capacity (approximate): 6.6 inches

Representative Profile:

Oi—0 to 15 inches; peat, high permeability

Oa—15 to 20 inches; muck, moderately high permeability

OA—20 to 27 inches; mucky silt loam, moderately high permeability

Bjjf—27 to 32 inches; permanently frozen silt loam, impermeable

Cf—32 to 60 inches; permanently frozen material, impermeable

Typic Histoturbels, moraines, and similar soils

Extent: 15 to 30 percent of the map unit

Landform: moraines

Slope shape: linear, concave

Slope range: 0 to 3 percent

Parent material: organic material over loess over till

Depth to permafrost: 8 to 22 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: very poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 inches

Ponding: occasional

Available water capacity (approximate): 7.5 inches

Representative Profile:

- Oe—0 to 9 inches; mucky peat, high permeability
- OA—9 to 15 inches; mucky silt loam, moderately high permeability
- Bjig—15 to 19 inches; silt loam, moderately high permeability
- Cjif—19 to 28 inches; permanently frozen silt loam, impermeable
- Cf, 2Cf—28 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Aquiturbels, moraines, and similar soils: 5 to 20 percent of the map unit

654—Terric Hemistels, 0 to 3 percent slopes

- Elevation:* 1,634 to 3,002 feet
- Mean annual precipitation:* 12 to 16 inches
- Frost-free period:* 75 to 104 days

Terric Hemistels and similar soils

- Extent:* 90 to 100 percent of the map unit
- Landform:* depressions on moraines
- Slope shape:* concave
- Slope range:* 0 to 3 percent
- Parent material:* partially decomposed organic material over loess over permanently frozen loess
- Depth to permafrost:* 14 to 30 inches
- Hazard of erosion (organic mat removed):* by water—slight; by wind—slight
- Runoff:* low
- Drainage class:* very poorly drained
- Flooding:* none
- Depth to high water table (approximate):* April-Sept.—0 inches
- Ponding:* frequent
- Available water capacity (approximate):* 10.1 inches
- Vegetation:* sedges, cottonsedge, low shrubs, and moss
- Representative Profile:*
 - Oe—0 to 20 inches; mucky peat, moderately high permeability
 - A/O—20 to 24 inches; moderately decomposed plant material, silt loam, moderately high permeability
 - Bjigf—24 to 60 inches; permanently frozen silt loam, impermeable

Minor Components

Typic Aquiturbels and similar soils: 0 to 10 percent of the map unit

655—Terric Hemistels-Typic Aquiturbels-Water complex, 0 to 3 percent slopes

- Elevation:* 1,309 to 2,018 feet
- Mean annual precipitation:* 12 to 15 inches
- Frost-free period:* 50 to 104 days

Terric Hemistels and similar soils

Extent: 30 to 70 percent of the map unit

Landform: depressions on moraines

Slope shape: concave

Slope range: 0 to 1 percent

Parent material: partially decomposed organic material over loess over permanently frozen loess

Depth to permafrost: 14 to 30 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: low

Drainage class: very poorly drained

Flooding: none

Depth to high water table (approximate): April-Sept.—0 inches

Ponding: frequent

Available water capacity (approximate): 10.1 inches

Vegetation: sedges, cottonsedge, low shrubs, and moss

Representative Profile:

Oe—0 to 20 inches; mucky peat, moderately high permeability

A/O—20 to 24 inches; moderately decomposed plant material, silt loam, moderately high permeability

Bjjgf—24 to 60 inches; permanently frozen silt loam, impermeable

Typic Aquiturbels and similar soils

Extent: 15 to 40 percent of the map unit

Landform: hills on moraines, depressions on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 3 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: low

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjjgf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Minor Components

Water: 15 to 55 percent of the map unit

Audrey and similar soils: 0 to 10 percent of the map unit

656—Tetlin silt loam, 12 to 20 percent slopes

Elevation: 1,978 to 2,953 feet
Mean annual precipitation: 22 to 26 inches
Frost-free period: 65 to 95 days

Tetlin, moderately steep, and similar soils

Extent: 90 to 100 percent of the map unit
Landform: hills
Position on slope: backslopes
Slope shape: linear, convex
Slope range: 12 to 20 percent
Parent material: loess
Depth to permafrost: 16 to 39 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to 12 inches
Ponding: none
Available water capacity (approximate): 5.5 inches
Vegetation: white and black spruce forest with alder understory
Representative Profile:
 Oi—0 to 6 inches; olive brown, mottled slightly decomposed plant material, high permeability
 Bw—6 to 24 inches; dark brown silt loam, moderately high permeability
 Bgf—24 to 60 inches; olive brown, mottled permanently frozen material, impermeable

Minor Components

Tetlin, steep, and similar soils: 0 to 10 percent of the map unit

657—Tetlin silt loam, hilly

Elevation: 1,716 to 2,280 feet
Mean annual precipitation: 22 to 26 inches
Frost-free period: 65 to 95 days

Tetlin and similar soils

Extent: 95 to 100 percent of the map unit
Landform: hills
Position on slope: backslopes
Slope shape: linear, convex
Slope range: 0 to 35 percent
Parent material: loess
Depth to permafrost: 16 to 39 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: very high
Drainage class: poorly drained
Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to 12 inches

Ponding: none

Available water capacity (approximate): 5.5 inches

Vegetation: white and black spruce forest with alder understory

Representative Profile:

Oi—0 to 6 inches; olive brown, mottled slightly decomposed plant material, high permeability

Bw—6 to 24 inches; dark brown silt loam, moderately high permeability

Bgf—24 to 60 inches; olive brown, mottled permanently frozen material, impermeable

Minor Components

Richardson and similar soils: 0 to 5 percent of the map unit

658—Tetlin silt loam, steep

Elevation: 1,650 to 2,405 feet

Mean annual precipitation: 22 to 26 inches

Frost-free period: 65 to 95 days

Tetlin and similar soils

Extent: 95 to 100 percent of the map unit

Landform: hills

Position on slope: backslopes

Slope shape: linear, convex

Slope range: 0 to 50 percent

Parent material: loess

Depth to permafrost: 16 to 39 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to 12 inches

Ponding: none

Available water capacity (approximate): 5.5 inches

Vegetation: white and black spruce forest with alder understory

Representative Profile:

Oi—0 to 6 inches; dark brown slightly decomposed plant material, high permeability

Bw—6 to 24 inches; olive brown, mottled silt loam, moderately high permeability

Bgf—24 to 60 inches; dark brown permanently frozen material, impermeable

Minor Components

Richardson and similar soils: 0 to 5 percent of the map unit

659—Trident Glacier

Elevation: 2,759 to 3,494 feet

Glacier

Extent: 100 percent of the map unit

Landform: mountains

660—Turbels-Tetlin complex, 7 to 12 percent slopes

Elevation: 2,188 to 2,244 feet

Mean annual precipitation: 12 to 16 inches

Frost-free period: 65 to 95 days

Turbels and similar soils

Extent: 80 to 90 percent of the map unit

Landform: hills

Position on slope: backslopes, toeslopes, footslopes

Slope shape: concave, linear

Slope range: 7 to 12 percent

Parent material: loess over colluvium

Depth to permafrost: 12 to 30 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—6 to 10 inches

Ponding: none

Available water capacity (approximate): 4.9 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

2Bw/Ajj—6 to 18 inches; very stony silt loam, moderately high permeability

2C—18 to 30 inches; extremely gravelly sandy loam, high permeability

2Cf—30 to 60 inches; permanently frozen extremely gravelly sandy loam, impermeable

Tetlin and similar soils

Extent: 10 to 20 percent of the map unit

Landform: hills

Position on slope: backslopes

Slope shape: linear, convex

Slope range: 7 to 12 percent

Parent material: loess

Depth to permafrost: 16 to 39 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to 12 inches

Ponding: none

Available water capacity (approximate): 5.5 inches

Vegetation: white and black spruce forest with alder understory

Representative Profile:

- Oi—0 to 6 inches; olive brown, mottled slightly decomposed plant material, high permeability
- Bw—6 to 24 inches; dark brown silt loam, moderately high permeability
- Bgf—24 to 60 inches; olive brown, mottled permanently frozen material, impermeable

661—Turbels silt loam, 12 to 20 percent slopes

- Elevation:* 2,395 to 3,150 feet
- Mean annual precipitation:* 12 to 16 inches
- Frost-free period:* 65 to 95 days

Turbels, moderately steep, and similar soils

- Extent:* 75 to 95 percent of the map unit
- Landform:* hills
- Position on slope:* footslopes, backslopes, toeslopes
- Slope shape:* concave, linear
- Slope range:* 12 to 20 percent
- Parent material:* loess over colluvium
- Depth to permafrost:* 12 to 30 inches
- Hazard of erosion (organic mat removed):* by water—severe; by wind—severe
- Runoff:* high
- Drainage class:* poorly drained
- Flooding:* none
- Depth to high water table (approximate):* April-May—2 to 4 inches; June-Sept.—6 to 10 inches
- Ponding:* none
- Available water capacity (approximate):* 4.9 inches
- Representative Profile:*
 - Oe—0 to 3 inches; moderately decomposed plant material, high permeability
 - A—3 to 6 inches; silt loam, moderately high permeability
 - 2Bw/Ajj—6 to 18 inches; very stony silt loam, moderately high permeability
 - 2C—18 to 30 inches; extremely gravelly sandy loam, high permeability
 - 2Cf—30 to 60 inches; permanently frozen extremely gravelly sandy loam, impermeable

Minor Components

- Turbels, steep, and similar soils: 5 to 15 percent of the map unit
- Typic Eutrocryepts and similar soils: 5 to 15 percent of the map unit

662—Turbels silt loam, 20 to 30 percent slopes

- Elevation:* 2,123 to 3,212 feet
- Mean annual precipitation:* 12 to 16 inches
- Frost-free period:* 65 to 95 days

Turbels, steep, and similar soils

- Extent:* 80 to 95 percent of the map unit
- Landform:* hills

Position on slope: backslopes, toeslopes, footslopes
Slope shape: linear, concave
Slope range: 20 to 30 percent
Parent material: loess over colluvium
Depth to permafrost: 12 to 30 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—6 to 10 inches
Ponding: none
Available water capacity (approximate): 4.9 inches
Vegetation: white and black spruce forest with alder understory
Representative Profile:
 Oe—0 to 3 inches; moderately decomposed plant material, high permeability
 A—3 to 6 inches; silt loam, moderately high permeability
 2Bw/Ajj—6 to 18 inches; very stony silt loam, moderately high permeability
 2C—18 to 30 inches; extremely gravelly sandy loam, high permeability
 2Cf—30 to 60 inches; permanently frozen extremely gravelly sandy loam, impermeable

Minor Components

Turbels, moderately steep, and similar soils: 5 to 15 percent of the map unit
 Typic Eutrocrypts and similar soils: 0 to 5 percent of the map unit

663—Turbels silt loam, 30 to 45 percent slopes

Elevation: 2,034 to 2,933 feet
Mean annual precipitation: 12 to 16 inches
Frost-free period: 65 to 95 days

Turbels, very steep, and similar soils

Extent: 80 to 95 percent of the map unit
Landform: hills
Position on slope: backslopes, toeslopes, footslopes
Slope shape: concave, linear
Slope range: 30 to 45 percent
Parent material: loess over colluvium
Depth to permafrost: 12 to 30 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—6 to 10 inches
Ponding: none
Available water capacity (approximate): 4.9 inches
Representative Profile:
 Oe—0 to 3 inches; moderately decomposed plant material, high permeability
 A—3 to 6 inches; silt loam, moderately high permeability
 2Bw/Ajj—6 to 18 inches; very stony silt loam, moderately high permeability

2C—18 to 30 inches; extremely gravelly sandy loam, high permeability
 2Cf—30 to 60 inches; permanently frozen extremely gravelly sandy loam,
 impermeable

Minor Components

Turbels, steep, and similar soils: 5 to 15 percent of the map unit
 Typic Eutrocryepts and similar soils: 0 to 5 percent of the map unit

664—Turbels-Aquic Dystrocryepts-Water association

Elevation: 2,379 to 4,347 feet
Mean annual precipitation: 32 to 39 inches
Frost-free period: 60 to 80 days

Turbels, mountains, and similar soils

Extent: 50 to 80 percent of the map unit
Landform: moraines
Position on slope: backslopes, toeslopes
Slope shape: linear, concave
Slope range: 1 to 6 percent
Parent material: organic material over alluvium and/or loess over colluvium and/or glaciofluvial deposits
Depth to permafrost: 6 to 30 inches
Hazard of erosion (organic mat removed): by water—moderate; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 to 4 inches; June-Sept.—7 to 20 inches
Ponding: none
Available water capacity (approximate): 2 inches
Representative Profile:
 Oi—0 to 4 inches; peat, high permeability
 Oe—4 to 7 inches; mucky peat, high permeability
 Oef—7 to 9 inches; permanently frozen mucky peat, impermeable
 BAjff—9 to 15 inches; permanently frozen silt loam, impermeable
 Cf—15 to 60 inches; permanently frozen gravelly loamy sand, impermeable

Aquic Dystrocryepts, mountains, and similar soils

Extent: 10 to 25 percent of the map unit
Landform: moraines
Position on slope: toeslopes, summits, backslopes
Slope shape: linear
Slope range: 1 to 15 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: medium
Drainage class: moderately well drained
Flooding: none
Depth to high water table (approximate): April-May—8 to 12 inches; June-Sept.—26 to more than 60 inches

Ponding: none

Available water capacity (approximate): 5.4 inches

Representative Profile:

Oe—0 to 5 inches; moderately decomposed plant material, moderately high permeability

OA—5 to 10 inches; mucky silt loam, moderately high permeability

2Bg—10 to 19 inches; very gravelly coarse sandy loam, high permeability

2C—19 to 60 inches; very gravelly coarse sandy loam, high permeability

Water

Extent: 10 to 20 percent of the map unit

Landform: lakes

Minor Components

Humic Dystrocrypts, mountains, and similar soils: 0 to 10 percent of the map unit

665—Turbels-Typic Dystrogelepts-Ruptic-Histic Aquiturbels complex

Elevation: 2,244 to 3,468 feet

Mean annual precipitation: 24 to 28 inches

Frost-free period: 60 to 80 days

Turbels, mountains, and similar soils

Extent: 50 to 65 percent of the map unit

Landform: moraines

Position on slope: backslopes, toeslopes

Slope shape: linear, concave

Slope range: 3 to 25 percent

Parent material: organic material over alluvium and/or loess over colluvium and/or glaciofluvial deposits

Depth to permafrost: 6 to 30 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 to 4 inches; June-Sept.—7 to 20 inches

Ponding: none

Available water capacity (approximate): 2 inches

Representative Profile:

Oi—0 to 4 inches; peat, high permeability

Oe—4 to 7 inches; mucky peat, high permeability

Oef—7 to 9 inches; permanently frozen mucky peat, impermeable

BAjff—9 to 15 inches; permanently frozen silt loam, impermeable

Cf—15 to 60 inches; permanently frozen gravelly loamy sand, impermeable

Typic Dystrogelepts, mountains, and similar soils

Extent: 15 to 30 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 0 to 32 percent
Parent material: loess over colluvium and/or slope alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 4.8 inches
Representative Profile:
 Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 AO—4 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 2C1—9 to 18 inches; loamy very fine sand, high permeability
 2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Ruptic-Histic Aquiturbels, mountains, and similar soils

Extent: 10 to 20 percent of the map unit
Landform: mountains
Position on slope: footslopes, backslopes
Slope shape: concave, linear
Slope range: 10 to 30 percent
Parent material: glaciofluvial deposits
Depth to permafrost: 11 to 30 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—2 inches; June-Sept.—4 to 8 inches
Ponding: none
Available water capacity (approximate): 3.1 inches
Representative Profile:
 Oe—0 to 1 inch; moderately decomposed plant material, high permeability
 A—1 to 3 inches; gravelly fine sandy loam, high permeability
 Bg—3 to 30 inches; very gravelly sandy loam, high permeability
 Cgf—30 to 60 inches; permanently frozen very gravelly coarse sandy loam, impermeable

Minor Components

Lithic Cryofolists, mountains, and similar soils: 0 to 10 percent of the map unit

666—Typic Aquiturbels, 0 to 7 percent slopes

Elevation: 1,319 to 2,251 feet
Mean annual precipitation: 15 to 19 inches
Frost-free period: 50 to 104 days

Typic Aquiturbels and similar soils

Extent: 85 to 95 percent of the map unit

Landform: hills on moraines, depressions on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 7 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjjgf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Minor Components

Audrey and similar soils: 0 to 10 percent of the map unit

Terric Hemistels and similar soils: 0 to 5 percent of the map unit

667—Typic Aquiturbels, 0 to 20 percent slopes

Elevation: 2,582 to 3,002 feet

Mean annual precipitation: 12 to 15 inches

Frost-free period: 75 to 104 days

Typic Aquiturbels and similar soils

Extent: 85 to 95 percent of the map unit

Landform: hills on moraines, depressions on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 20 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjjgf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Minor Components

Butchlake and similar soils: 5 to 15 percent of the map unit

668—Typic Aquiturbels, subalpine, 0 to 7 percent slopes

Elevation: 1,532 to 2,726 feet

Mean annual precipitation: 16 to 20 inches

Frost-free period: 65 to 95 days

Typic Aquiturbels, gently sloping, and similar soils

Extent: 90 to 100 percent of the map unit

Landform: hills on moraines, depressions on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 7 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjjgf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Minor Components

Terric Hemistels and similar soils: 0 to 10 percent of the map unit

Typic Aquiturbels, strongly sloping, and similar soils: 0 to 10 percent of the map unit

669—Typic Aquiturbels-Butchlake-Southpaw complex, 0 to 35 percent slopes

Elevation: 1,968 to 2,933 feet
Mean annual precipitation: 12 to 15 inches
Frost-free period: 75 to 104 days

Typic Aquiturbels and similar soils

Extent: 30 to 50 percent of the map unit
Landform: hills on moraines, depressions on moraines
Position on slope: toeslopes, footslopes, backslopes
Slope shape: linear, concave, convex
Slope range: 0 to 20 percent
Parent material: loess over till
Depth to permafrost: 14 to 31 inches
Hazard of erosion (organic mat removed): by water—moderate; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches
Ponding: frequent
Available water capacity (approximate): 5.1 inches
Vegetation: open black spruce forest with low shrubs and moss
Representative Profile:
 Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability
 Bg—7 to 15 inches; very fine sandy loam, moderately high permeability
 Bjjgf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable
 Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable
 2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Butchlake and similar soils

Extent: 20 to 45 percent of the map unit
Landform: hills on moraines
Position on slope: backslopes, shoulders, summits, footslopes
Slope shape: linear, convex
Slope range: 0 to 35 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: medium
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.9 inches
Vegetation: paper birch, spruce, and aspen forest
Representative Profile:
 Oi—0 to 3 inches; slightly decomposed plant material, high permeability
 A—3 to 4 inches; mucky silt loam, moderately high permeability
 Bw/2Bw—4 to 9 inches; extremely gravelly coarse sandy loam, cobbly sandy loam, high permeability
 2BC—9 to 60 inches; very cobbly sandy loam, high permeability

Southpaw and similar soils

Extent: 15 to 30 percent of the map unit

Landform: hills on moraines

Position on slope: summits, shoulders, backslopes, footslopes

Slope shape: linear, concave, convex

Slope range: 0 to 20 percent

Parent material: loess over glacial till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.2 inches

Vegetation: paper birch, spruce, and aspen forest

Representative Profile:

Oi—0 to 4 inches; brown with light gray mottles slightly decomposed plant material, high permeability

Bw1—4 to 13 inches; brown with light gray mottles silt loam, moderately high permeability

Bw2—13 to 22 inches; brown with light gray mottles fine sandy loam, high permeability

2BC—22 to 36 inches; brown with light gray mottles gravelly sandy loam, high permeability

2C—36 to 60 inches; brown with light gray mottles very gravelly loamy sand, high permeability

Minor Components

Water: 5 to 10 percent of the map unit

670—Typic Aquiturbels-Terric Hemistels complex, 0 to 3 percent slopes

Elevation: 1,640 to 1,719 feet

Mean annual precipitation: 12 to 16 inches

Frost-free period: 65 to 95 days

Typic Aquiturbels and similar soils

Extent: 75 to 85 percent of the map unit

Landform: depressions on moraines, hills on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 3 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: low

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjjgf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Terric Hemistels and similar soils

Extent: 15 to 25 percent of the map unit

Landform: depressions on moraines

Slope shape: concave

Slope range: 0 to 3 percent

Parent material: partially decomposed organic material over loess over permanently frozen loess

Depth to permafrost: 14 to 30 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: low

Drainage class: very poorly drained

Flooding: none

Depth to high water table (approximate): April-Sept.—0 inches

Ponding: frequent

Available water capacity (approximate): 10.1 inches

Vegetation: sedges, cottonsedge, low shrubs, and moss

Representative Profile:

Oe—0 to 20 inches; mucky peat, moderately high permeability

A/O—20 to 24 inches; moderately decomposed plant material, silt loam, moderately high permeability

Bjjgf—24 to 60 inches; permanently frozen silt loam, impermeable

671—Typic Aquiturbels-Terric Hemistels complex, 0 to 20 percent slopes

Elevation: 1,266 to 1,946 feet

Mean annual precipitation: 15 to 19 inches

Frost-free period: 50 to 104 days

Typic Aquiturbels and similar soils

Extent: 80 to 100 percent of the map unit

Landform: depressions on moraines, hills on moraines

Position on slope: toeslopes, footslopes, backslopes

Slope shape: linear, concave, convex

Slope range: 0 to 20 percent

Parent material: loess over till

Depth to permafrost: 14 to 31 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 inches

Ponding: frequent

Available water capacity (approximate): 5.1 inches

Vegetation: open black spruce forest with low shrubs and moss

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, moderately high permeability

Bg—7 to 15 inches; very fine sandy loam, moderately high permeability

Bjggf—15 to 33 inches; permanently frozen very fine sandy loam, impermeable

Bgf1—33 to 41 inches; permanently frozen very fine sandy loam, impermeable

2Bgf—41 to 60 inches; permanently frozen gravelly very fine sandy loam, impermeable

Terric Hemistels and similar soils

Extent: 0 to 20 percent of the map unit

Landform: depressions on moraines

Slope shape: concave

Slope range: 0 to 12 percent

Parent material: partially decomposed organic material over loess over permanently frozen loess

Depth to permafrost: 14 to 30 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: very high

Drainage class: very poorly drained

Flooding: none

Depth to high water table (approximate): April-Sept.—0 inches

Ponding: frequent

Available water capacity (approximate): 10.1 inches

Vegetation: sedges, cottonsedge, low shrubs, and moss

Representative Profile:

Oe—0 to 20 inches; mucky peat, moderately high permeability

A/O—20 to 24 inches; moderately decomposed plant material, silt loam, moderately high permeability

Bjggf—24 to 60 inches; permanently frozen silt loam, impermeable

Minor Components

Water: 0 to 20 percent of the map unit

Southpaw and similar soils: 0 to 10 percent of the map unit

Typic Cryaquepts and similar soils: 0 to 10 percent of the map unit

672—Typic Aquiturbels-Typic Dystrocryepts complex

Elevation: 1,493 to 2,497 feet

Mean annual precipitation: 16 to 24 inches

Frost-free period: 70 to 95 days

Typic Aquiturbels, ridges, and similar soils

Extent: 60 to 80 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 10 percent
Parent material: alluvium and/or loess
Depth to permafrost: 8 to 31 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—6 to 8 inches
Ponding: none
Available water capacity (approximate): 1.5 inches
Representative Profile:
 Oi—0 to 5 inches; slightly decomposed plant material, high permeability
 A—5 to 8 inches; silt loam, high permeability
 Bjjgf—8 to 15 inches; permanently frozen silt loam, impermeable
 Cf1—15 to 24 inches; permanently frozen silt loam, impermeable
 Cf2—24 to 60 inches; permanently frozen material, impermeable

Typic Dystrocryepts, ridges, and similar soils

Extent: 10 to 25 percent of the map unit
Landform: outwash plains
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 5 to 20 percent
Parent material: loess over outwash
Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate
Runoff: medium
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 7.1 inches
Representative Profile:
 Oe—0 to 3 inches; moderately decomposed plant material, high permeability
 A—3 to 6 inches; silt loam, moderately high permeability
 Bw—6 to 13 inches; silt loam, moderately high permeability
 2BC—13 to 18 inches; sandy loam, high permeability
 2C—18 to 60 inches; very gravelly coarse sand, high permeability

Minor Components

Typic Histoturbels, ridges, and similar soils: 5 to 10 percent of the map unit

673—Typic Aquiturbels-Typic Dystrocryepts-Typic Haploturbels complex

Elevation: 1,168 to 1,732 feet
Mean annual precipitation: 17 to 19 inches
Frost-free period: 70 to 95 days

Typic Aquiturbels, moraines, and similar soils

Extent: 30 to 50 percent of the map unit

Landform: moraines
Slope shape: linear
Slope range: 0 to 5 percent
Parent material: loess over till
Depth to permafrost: 12 to 26 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: high
Drainage class: somewhat poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 to 4 inches; June-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 6.9 inches
Representative Profile:
 OA—0 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 Bjj—9 to 19 inches; very fine sandy loam, moderately high permeability
 Bjjgf—19 to 24 inches; permanently frozen very fine sandy loam, impermeable
 2Cgf—24 to 60 inches; permanently frozen fine sandy loam, impermeable

Typic Dystrocryepts, moraines, and similar soils

Extent: 25 to 35 percent of the map unit
Landform: moraines
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 2 to 10 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate
Runoff: medium
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 6.3 inches
Representative Profile:
 Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 A—4 to 5 inches; silt loam, moderately high permeability
 Bw1—5 to 8 inches; sandy loam, high permeability
 2Bw2—8 to 24 inches; gravelly sandy loam, high permeability
 2C—24 to 60 inches; gravelly sandy loam, high permeability

Typic Haploturbels, moraines, and similar soils

Extent: 15 to 25 percent of the map unit
Landform: moraines
Position on slope: backslopes, footslopes, toeslopes
Slope shape: concave, linear
Slope range: 2 to 5 percent
Parent material: loess over till
Depth to permafrost: 10 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: moderately well drained
Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 3.3 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability

OA—4 to 6 inches; mucky silt loam, moderately high permeability

A—6 to 8 inches; very fine sandy loam, moderately high permeability

Bw—8 to 11 inches; very fine sandy loam, moderately high permeability

Bjff—11 to 16 inches; permanently frozen sandy loam, impermeable

Cgf—16 to 60 inches; permanently frozen sandy loam, impermeable

Minor Components

Terric Fibristels, moraines, and similar soils: 0 to 5 percent of the map unit

Typic Histoturbels, moraines, and similar soils: 0 to 5 percent of the map unit

674—Typic Aquiturbels-Typic Histoturbels association

Elevation: 1,040 to 1,388 feet

Mean annual precipitation: 12 to 16 inches

Frost-free period: 75 to 105 days

Typic Aquiturbels, river valleys, and similar soils

Extent: 35 to 55 percent of the map unit

Landform: outwash plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: loess over outwash

Depth to permafrost: 6 to 18 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches

Ponding: frequent

Available water capacity (approximate): 2.4 inches

Representative Profile:

Oe—0 to 4 inches; moderately decomposed plant material, high permeability

OA—4 to 6 inches; mucky silt loam, moderately high permeability

Bjff—6 to 16 inches; permanently frozen silt loam, impermeable

Cf—16 to 60 inches; permanently frozen material, impermeable

Typic Histoturbels, river valleys, and similar soils

Extent: 30 to 50 percent of the map unit

Landform: outwash plains

Slope shape: linear, concave

Slope range: 2 to 7 percent

Parent material: organic material over loess

Depth to permafrost: 10 to 18 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 10 inches

Ponding: none

Available water capacity (approximate): 5 inches

Representative Profile:

Oe—0 to 7 inches; mucky peat, high permeability

Oi—7 to 12 inches; peat, high permeability

A—12 to 15 inches; mucky silt loam, moderately high permeability

Bjjgf—15 to 60 inches; permanently frozen very fine sandy loam, impermeable

Minor Components

Ruptic-Histic Aquiturbels, river valleys, and similar soils: 10 to 15 percent of the map unit

675—Typic Aquorthels-Typic Histoturbels complex

Elevation: 2,342 to 4,856 feet

Mean annual precipitation: 28 to 35 inches

Frost-free period: 60 to 80 days

Typic Aquorthels, mountains, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: mountains

Position on slope: footslopes, backslopes

Slope shape: linear

Slope range: 5 to 25 percent

Parent material: organic material over colluvium

Depth to permafrost: 9 to 23 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 5.2 inches

Representative Profile:

OA—0 to 3 inches; mucky silt loam, moderately high permeability

Bw—3 to 14 inches; silt loam, moderately high permeability

Bgf—14 to 24 inches; permanently frozen silt loam, impermeable

Cf—24 to 60 inches; permanently frozen material, impermeable

Typic Histoturbels, mountains, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: outwash plains, till plains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: concave, linear

Slope range: 20 to 30 percent

Parent material: loess over glaciofluvial deposits

Depth to permafrost: 8 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 5.8 inches

Representative Profile:

Oi—0 to 3 inches; peat, high permeability

Oe—3 to 6 inches; mucky peat, high permeability

OA—6 to 13 inches; mucky silt loam, moderately high permeability

Bw—13 to 18 inches; silt loam, moderately high permeability

2BCjff—18 to 60 inches; permanently frozen gravelly silt loam, impermeable

Minor Components

Histels, mountains, and similar soils: 5 to 10 percent of the map unit

Typic Cryofluvents, mountains, and similar soils: 5 to 15 percent of the map unit

Typic Haplothels, mountains, and similar soils: 10 to 15 percent of the map unit

676—Typic Cryaquepts, 0 to 3 percent slopes

Elevation: 1,535 to 1,647 feet

Mean annual precipitation: 13 to 15 inches

Frost-free period: 75 to 104 days

Typic Cryaquepts and similar soils

Extent: 60 to 95 percent of the map unit

Landform: depressions on pitted outwash plains, depressions on moraines

Slope shape: concave

Slope range: 0 to 3 percent

Parent material: alluvium over lacustrine deposits

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: poorly drained

Flooding: rare

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 4 inches

Ponding: frequent

Available water capacity (approximate): 11.2 inches

Vegetation: sedges and grasses

Representative Profile:

A—0 to 4 inches; silt loam, moderately high permeability

Bg1—4 to 8 inches; gravelly silt loam, high permeability

2Bg2—8 to 29 inches; very gravelly sandy loam, high permeability

3BC—29 to 35 inches; loam, moderately high permeability

4Cg—35 to 56 inches; clay loam, moderately high permeability

5Ck—56 to 60 inches; loam, moderately high permeability

Minor Components

Water: 0 to 40 percent of the map unit

Typic Aquiturbels and similar soils: 0 to 15 percent of the map unit

677—Typic Cryofluvents

Elevation: 1,188 to 1,286 feet

Mean annual precipitation: 13 to 17 inches

Frost-free period: 75 to 105 days

Typic Cryofluvents, river valleys, and similar soils

Extent: 100 percent of the map unit

Landform: terraces

Slope shape: linear

Slope range: 0 to 2 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: occasional

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 2.1 inches

Representative Profile:

Oi—0 to 2 inches; slightly decomposed plant material, high permeability

A—2 to 4 inches; loamy fine sand, high permeability

2C1—4 to 11 inches; gravelly coarse sand, high permeability

2C2—11 to 60 inches; extremely gravelly coarse sand, high permeability

678—Typic Cryofluvents-Histels-Typic Haploturbels association

Elevation: 1,073 to 2,733 feet

Mean annual precipitation: 17 to 20 inches

Frost-free period: 75 to 105 days

Typic Cryofluvents, river valleys, and similar soils

Extent: 30 to 50 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: occasional

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 2.1 inches

Representative Profile:

Oi—0 to 2 inches; slightly decomposed plant material, high permeability

- A—2 to 4 inches; loamy fine sand, high permeability
- 2C1—4 to 11 inches; gravelly coarse sand, high permeability
- 2C2—11 to 60 inches; extremely gravelly coarse sand, high permeability

Histels, river valleys, and similar soils

- Extent:* 20 to 40 percent of the map unit
- Landform:* terraces
- Slope shape:* linear
- Slope range:* 0 to 3 percent
- Parent material:* organic material over loess
- Depth to permafrost:* 16 to 24 inches
- Hazard of erosion (organic mat removed):* by water—slight; by wind—slight
- Runoff:* high
- Drainage class:* poorly drained
- Flooding:* rare
- Depth to high water table (approximate):* April-May—0 inches; June-Sept.—4 to 16 inches
- Ponding:* none
- Available water capacity (approximate):* 4.4 inches
- Representative Profile:*
 - Oi—0 to 13 inches; peat, high permeability
 - Oa—13 to 18 inches; muck, moderately high permeability
 - Bjjf—18 to 60 inches; permanently frozen silt loam, impermeable

Typic Haploturbels, river valleys, and similar soils

- Extent:* 20 to 40 percent of the map unit
- Landform:* hills
- Position on slope:* footslopes, toeslopes
- Slope shape:* concave, linear
- Slope range:* 10 to 20 percent
- Parent material:* loess
- Depth to permafrost:* 10 to 16 inches
- Hazard of erosion (organic mat removed):* by water—severe; by wind—slight
- Runoff:* high
- Drainage class:* somewhat poorly drained
- Flooding:* none
- Depth to high water table (approximate):* April-May—0 inches; June-Sept.—0 to more than 60 inches
- Ponding:* none
- Available water capacity (approximate):* 5.1 inches
- Representative Profile:*
 - Oe—0 to 6 inches; slightly decomposed plant material, high permeability
 - OA—6 to 10 inches; mucky silt loam, moderately high permeability
 - Bw—10 to 15 inches; very fine sandy loam, moderately high permeability
 - Bjjf—15 to 23 inches; permanently frozen very fine sandy loam, impermeable
 - Cgf1—23 to 28 inches; permanently frozen sandy loam, impermeable
 - Cgf2—28 to 60 inches; permanently frozen material, impermeable

679—Typic Cryofluvents-Typic Dystrocryepts complex

- Elevation:* 1,693 to 2,805 feet
- Mean annual precipitation:* 24 to 28 inches

Frost-free period: 75 to 105 days

Typic Cryofluvents, river valleys, and similar soils

Extent: 30 to 50 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 5 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: occasional

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 2.1 inches

Representative Profile:

Oi—0 to 2 inches; slightly decomposed plant material, high permeability

A—2 to 4 inches; loamy fine sand, high permeability

2C1—4 to 11 inches; gravelly coarse sand, high permeability

2C2—11 to 60 inches; extremely gravelly coarse sand, high permeability

Typic Dystrocrypts, river valleys, and similar soils

Extent: 30 to 50 percent of the map unit

Landform: flood plains

Slope shape: convex, linear

Slope range: 0 to 5 percent

Parent material: loess over alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 11.7 inches

Representative Profile:

Oe—0 to 7 inches; moderately decomposed plant material, high permeability

A—7 to 10 inches; silt loam, moderately high permeability

Bw—10 to 24 inches; silt loam, moderately high permeability

2C—24 to 60 inches; very gravelly coarse sand, high permeability

Minor Components

Typic Historthels, river valleys, and similar soils: 5 to 15 percent of the map unit

Histels, river valleys, and similar soils: 0 to 5 percent of the map unit

680—Typic Cryofluvents-Typic Dystrocrypts-Typic Histoturbels complex

Elevation: 899 to 2,169 feet

Mean annual precipitation: 15 to 19 inches

Frost-free period: 75 to 105 days

Typic Cryofluvents, river valleys, and similar soils

Extent: 30 to 55 percent of the map unit

Landform: flood plains

Slope shape: linear

Slope range: 0 to 10 percent

Parent material: alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: occasional

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 2.1 inches

Representative Profile:

O_i—0 to 2 inches; slightly decomposed plant material, high permeability

A—2 to 4 inches; loamy fine sand, high permeability

2C₁—4 to 11 inches; gravelly coarse sand, high permeability

2C₂—11 to 60 inches; extremely gravelly coarse sand, high permeability

Typic Dystrocrypts, river valleys, and similar soils

Extent: 40 to 60 percent of the map unit

Landform: flood plains

Slope shape: linear, convex

Slope range: 0 to 7 percent

Parent material: loess over alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: rare

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 11.7 inches

Representative Profile:

O_e—0 to 7 inches; moderately decomposed plant material, high permeability

A—7 to 10 inches; silt loam, moderately high permeability

B_w—10 to 24 inches; silt loam, moderately high permeability

2C—24 to 60 inches; very gravelly coarse sand, high permeability

Typic Histoturbels, river valleys, and similar soils

Extent: 5 to 10 percent of the map unit

Landform: flood plains

Slope shape: linear, concave

Slope range: 0 to 1 percent

Parent material: organic material over loess

Depth to permafrost: 10 to 18 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 10 inches

Ponding: none

Available water capacity (approximate): 5 inches

Representative Profile:

Oe—0 to 7 inches; mucky peat, high permeability

Oi—7 to 12 inches; peat, high permeability

A—12 to 15 inches; mucky silt loam, moderately high permeability

Bjjgf—15 to 60 inches; permanently frozen very fine sandy loam, impermeable

681—Typic Dystrocryepts-Ruptic-Histic Aquiturbels complex

Elevation: 2,356 to 3,740 feet

Mean annual precipitation: 23 to 27 inches

Frost-free period: 70 to 95 days

Typic Dystrocryepts, ridges, and similar soils

Extent: 45 to 65 percent of the map unit

Landform: ridges

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 15 to 30 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.1 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

Bw—6 to 13 inches; silt loam, moderately high permeability

2BC—13 to 18 inches; sandy loam, high permeability

2C—18 to 60 inches; very gravelly coarse sand, high permeability

Ruptic-Histic Aquiturbels, ridges, and similar soils

Extent: 30 to 45 percent of the map unit

Landform: hills, ridges

Position on slope: footslopes, shoulders

Slope shape: concave, convex

Slope range: 5 to 15 percent

Parent material: loess over colluvium and/or slope alluvium

Depth to permafrost: 12 to 24 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 6.7 inches

Representative Profile:

Oi—0 to 4 inches; peat, high permeability

OA—4 to 9 inches; mucky silt loam, moderately high permeability
 Bjjg—9 to 21 inches; silt loam, moderately high permeability
 Bgf—21 to 60 inches; permanently frozen silt loam, impermeable

Minor Components

Typic Historthels, ridges, and similar soils: 5 to 10 percent of the map unit
 Aquic Dystricryepts, ridges, and similar soils: 0 to 5 percent of the map unit

682—Typic Dystricryepts-Turbels-Water complex, high moraines

Elevation: 1,890 to 2,946 feet
Mean annual precipitation: 21 to 32 inches
Frost-free period: 70 to 95 days

Typic Dystricryepts, high moraines, and similar soils

Extent: 35 to 45 percent of the map unit
Landform: moraines
Position on slope: shoulders, backslopes, summits
Slope shape: linear, convex
Slope range: 3 to 30 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 5.8 inches
Representative Profile:
 Oe—0 to 2 inches; moderately decomposed plant material, high permeability
 A—2 to 3 inches; silt loam, moderately high permeability
 2Bw—3 to 4 inches; gravelly sandy loam, high permeability
 2BC—4 to 9 inches; gravelly sandy loam, high permeability
 2C—9 to 60 inches; gravelly sandy loam, high permeability

Turbels, high moraines, and similar soils

Extent: 15 to 30 percent of the map unit
Landform: moraines
Position on slope: shoulders, footslopes, backslopes
Slope shape: linear, concave
Slope range: 5 to 15 percent
Parent material: loess over till
Depth to permafrost: 8 to 16 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 12 inches
Ponding: none
Available water capacity (approximate): 3.3 inches

Representative Profile:

- Oi—0 to 6 inches; peat, high permeability
- Oe—6 to 11 inches; mucky peat, high permeability
- OA—11 to 12 inches; mucky silt loam, moderately high permeability
- Bjff—12 to 24 inches; permanently frozen loam, impermeable
- Cf—24 to 60 inches; permanently frozen material, impermeable

Water

Extent: 15 to 40 percent of the map unit

Landform: lakes

Minor Components

Histels, high moraines, and similar soils: 0 to 10 percent of the map unit

Typic Cryaquepts, high moraines, and similar soils: 0 to 10 percent of the map unit

683—Typic Dystricrypts-Turbels-Water complex, moraines

Elevation: 1,207 to 2,917 feet

Mean annual precipitation: 16 to 34 inches

Frost-free period: 70 to 95 days

Typic Dystricrypts, moraines, and similar soils

Extent: 50 to 65 percent of the map unit

Landform: moraines

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 10 to 25 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 6.3 inches

Representative Profile:

- Oi—0 to 4 inches; slightly decomposed plant material, high permeability
- A—4 to 5 inches; silt loam, moderately high permeability
- Bw1—5 to 8 inches; sandy loam, high permeability
- 2Bw2—8 to 24 inches; gravelly sandy loam, high permeability
- 2C—24 to 60 inches; gravelly sandy loam, high permeability

Turbels, moraines, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: depressions on moraines

Position on slope: toeslopes, footslopes

Slope shape: linear, concave

Slope range: 1 to 15 percent

Parent material: loess over till

Depth to permafrost: 10 to 24 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: high

Drainage class: somewhat poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 to 4 inches; June-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 5.7 inches

Representative Profile:

Oi—0 to 5 inches; peat, high permeability

AO—5 to 10 inches; mucky silt loam, moderately high permeability

Bjj—10 to 19 inches; silt loam, moderately high permeability

Cfg1—19 to 24 inches; permanently frozen silt loam, impermeable

Cfg2—24 to 60 inches; permanently frozen material, impermeable

Water

Extent: 15 to 25 percent of the map unit

Landform: lakes

Minor Components

Histels, moraines, and similar soils: 5 to 15 percent of the map unit

684—Typic Dystrocryepts-Typic Aquiturbels-Typic Haplorthels complex

Elevation: 1,224 to 1,631 feet

Mean annual precipitation: 16 to 17 inches

Frost-free period: 75 to 105 days

Typic Dystrocryepts, outwash plains, and similar soils

Extent: 55 to 75 percent of the map unit

Landform: hills on outwash plains

Slope shape: linear, convex

Slope range: 1 to 7 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 9.2 inches

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, moderately high permeability

OA—2 to 5 inches; mucky silt loam, moderately high permeability

Bw—5 to 16 inches; silt loam, moderately high permeability

Bjj—16 to 30 inches; silt loam, moderately high permeability

2C—30 to 60 inches; gravelly loamy sand, high permeability

Typic Aquiturbels, outwash plains, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: outwash plains

Slope shape: linear

Slope range: 0 to 5 percent

Parent material: loess over outwash

Depth to permafrost: 12 to 28 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to more than 60 inches

Ponding: none

Available water capacity (approximate): 8.2 inches

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, high permeability

OA—2 to 7 inches; mucky silt loam, moderately high permeability

A—7 to 12 inches; silt loam, moderately high permeability

Bw—12 to 22 inches; silt loam, moderately high permeability

2BCf, 2Cgf—22 to 31 inches; permanently frozen loamy sand, impermeable

2Cf—31 to 60 inches; permanently frozen material, impermeable

Typic Haplorthels, outwash plains, and similar soils

Extent: 10 to 25 percent of the map unit

Landform: outwash plains

Slope shape: linear, concave

Slope range: 1 to 5 percent

Parent material: loess over outwash

Depth to permafrost: 20 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: somewhat poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to more than 60 inches

Ponding: none

Available water capacity (approximate): 9.2 inches

Representative Profile:

Oi—0 to 5 inches; slightly decomposed plant material, high permeability

OA—5 to 10 inches; mucky silt loam, moderately high permeability

A—10 to 13 inches; very fine sandy loam, moderately high permeability

Bw—13 to 28 inches; very fine sandy loam, moderately high permeability

Cf—28 to 60 inches; permanently frozen sandy loam, impermeable

Minor Components

Histels, outwash plains, and similar soils: 0 to 5 percent of the map unit

685—Typic Dystrocryepts-Typic Cryaquepts-Aquic Dystrocryepts complex

Elevation: 2,050 to 3,921 feet
Mean annual precipitation: 27 to 35 inches
Frost-free period: 70 to 95 days

Typic Dystrocryepts, high moraines, and similar soils

Extent: 25 to 40 percent of the map unit
Landform: moraines
Position on slope: shoulders, backslopes, summits
Slope shape: linear, convex
Slope range: 0 to 15 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 5.8 inches
Representative Profile:
 Oe—0 to 2 inches; moderately decomposed plant material, high permeability
 A—2 to 3 inches; silt loam, moderately high permeability
 2Bw—3 to 4 inches; gravelly sandy loam, high permeability
 2BC—4 to 9 inches; gravelly sandy loam, high permeability
 2C—9 to 60 inches; gravelly sandy loam, high permeability

Typic Cryaquepts, high moraines, and similar soils

Extent: 20 to 30 percent of the map unit
Landform: drainageways on moraines, depressions on moraines
Slope shape: concave
Slope range: 0 to 30 percent
Parent material: loess over water worked till
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: high
Drainage class: poorly drained
Flooding: occasional
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 16 inches
Ponding: occasional
Available water capacity (approximate): 7.8 inches
Representative Profile:
 OA—0 to 4 inches; mucky silt loam, moderately high permeability
 2Bg—4 to 12 inches; gravelly sandy loam, high permeability
 2C—12 to 60 inches; gravelly sandy loam, high permeability

Aquic Dystrocryepts, high moraines, and similar soils

Extent: 0 to 20 percent of the map unit
Landform: depressions on moraines
Slope shape: concave, linear
Slope range: 0 to 40 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 8 inches; June-Sept.—8 to more than 60 inches

Ponding: none

Available water capacity (approximate): 4.9 inches

Representative Profile:

Oa—0 to 2 inches; highly decomposed plant material, high permeability

A—2 to 4 inches; silt loam, moderately high permeability

2Bw—4 to 16 inches; gravelly sandy loam, moderately high permeability

2C—16 to 60 inches; very gravelly sandy loam, moderately high permeability

Ruptic Histoturbels, high moraines, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: moraines

Position on slope: backslopes, toeslopes

Slope shape: linear, concave

Slope range: 20 to 40 percent

Parent material: loess over till

Depth to permafrost: 8 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2 inches

Representative Profile:

Oi—0 to 5 inches; peat, high permeability

Oe—5 to 8 inches; mucky peat, high permeability

Af—8 to 10 inches; permanently frozen mucky silt loam, impermeable

BCjff—10 to 11 inches; permanently frozen silt loam, impermeable

2Cf—11 to 60 inches; permanently frozen gravelly sandy loam, impermeable

Minor Components

Water: 5 to 15 percent of the map unit

Terric Hemistels, high moraines, and similar soils: 0 to 5 percent of the map unit

686—Typic Dystrocryepts-Typic Cryaquepts-Typic Histoturbels complex

Elevation: 1,742 to 2,805 feet

Mean annual precipitation: 27 to 32 inches

Frost-free period: 70 to 95 days

Typic Dystrocryepts, moraines, and similar soils

Extent: 25 to 40 percent of the map unit

Landform: moraines

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 0 to 20 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 6.3 inches

Representative Profile:

O_i—0 to 4 inches; slightly decomposed plant material, high permeability

A—4 to 5 inches; silt loam, moderately high permeability

Bw₁—5 to 8 inches; sandy loam, high permeability

2Bw₂—8 to 24 inches; gravelly sandy loam, high permeability

2C—24 to 60 inches; gravelly sandy loam, high permeability

Typic Cryaquepts, moraines, and similar soils

Extent: 20 to 35 percent of the map unit

Landform: depressions on moraines

Position on slope: footslopes, toeslopes

Slope shape: concave

Slope range: 0 to 3 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 12 inches

Ponding: occasional

Available water capacity (approximate): 10 inches

Representative Profile:

A—0 to 5 inches; fine sandy loam, moderately high permeability

B_g—5 to 41 inches; fine sandy loam, moderately high permeability

C_g—41 to 60 inches; fine sandy loam, moderately high permeability

Typic Histoturbels, moraines, and similar soils

Extent: 25 to 30 percent of the map unit

Landform: moraines

Slope shape: linear, concave

Slope range: 0 to 3 percent

Parent material: organic material over loess over till

Depth to permafrost: 8 to 22 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: very poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 inches

Ponding: occasional

Available water capacity (approximate): 7.5 inches

Representative Profile:

- Oe—0 to 9 inches; mucky peat, high permeability
- OA—9 to 15 inches; mucky silt loam, moderately high permeability
- Bjig—15 to 19 inches; silt loam, moderately high permeability
- Cjff—19 to 28 inches; permanently frozen silt loam, impermeable
- Cf, 2Cf—28 to 60 inches; permanently frozen material, impermeable

Minor Components

Aquic Dystricrypts, moraines, and similar soils: 5 to 15 percent of the map unit

687—Typic Dystricrypts-Typic Haplocryands-Typic Histoturbels complex

Elevation: 1,594 to 2,739 feet
Mean annual precipitation: 17 to 27 inches
Frost-free period: 70 to 95 days

Typic Dystricrypts, ridges, and similar soils

Extent: 40 to 60 percent of the map unit
Landform: ridges
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 4 to 50 percent
Parent material: loess over outwash
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: medium
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 7.1 inches
Representative Profile:

- Oe—0 to 3 inches; moderately decomposed plant material, high permeability
- A—3 to 6 inches; silt loam, moderately high permeability
- Bw—6 to 13 inches; silt loam, moderately high permeability
- 2BC—13 to 18 inches; sandy loam, high permeability
- 2C—18 to 60 inches; very gravelly coarse sand, high permeability

Typic Haplocryands, ridges, and similar soils

Extent: 30 to 40 percent of the map unit
Landform: mountains
Position on slope: backslopes, shoulders, summits
Slope shape: convex, linear
Slope range: 20 to 30 percent
Parent material: volcanic ash over colluvium
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none

Available water capacity (approximate): 9.2 inches

Representative Profile:

- Oi—0 to 3 inches; slightly decomposed plant material, high permeability
- Bw—3 to 23 inches; very fine sandy loam, moderately high permeability
- 2C—23 to 60 inches; very gravelly loamy coarse sand, high permeability

Typic Histoturbels, ridges, and similar soils

Extent: 10 to 20 percent of the map unit

Landform: mountains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 3 to 45 percent

Parent material: loess over colluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

- Oi—0 to 10 inches; peat, high permeability
- Oe—10 to 11 inches; mucky peat, high permeability
- OA—11 to 13 inches; mucky silt loam, moderately high permeability
- Bjff—13 to 20 inches; permanently frozen silt loam, impermeable
- 2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

688—Typic Dystrocryepts-Typic Haploturbels-Typic Aquiturbels complex

Elevation: 1,627 to 2,379 feet

Mean annual precipitation: 24 to 27 inches

Frost-free period: 70 to 95 days

Typic Dystrocryepts, moraines, and similar soils

Extent: 35 to 45 percent of the map unit

Landform: moraines

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 2 to 15 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 6.3 inches

Representative Profile:

- Oi—0 to 4 inches; slightly decomposed plant material, high permeability

A—4 to 5 inches; silt loam, moderately high permeability
 Bw1—5 to 8 inches; sandy loam, high permeability
 2Bw2—8 to 24 inches; gravelly sandy loam, high permeability
 2C—24 to 60 inches; gravelly sandy loam, high permeability

Typic Haploturbels, moraines, and similar soils

Extent: 25 to 35 percent of the map unit
Landform: moraines
Position on slope: backslopes, footslopes, toeslopes
Slope shape: concave, linear
Slope range: 5 to 15 percent
Parent material: loess over till
Depth to permafrost: 10 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: moderately well drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 3.3 inches
Representative Profile:
 Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 OA—4 to 6 inches; mucky silt loam, moderately high permeability
 A—6 to 8 inches; very fine sandy loam, moderately high permeability
 Bw—8 to 11 inches; very fine sandy loam, moderately high permeability
 Bjff—11 to 16 inches; permanently frozen sandy loam, impermeable
 Cgf—16 to 60 inches; permanently frozen sandy loam, impermeable

Typic Aquiturbels, moraines, and similar soils

Extent: 10 to 15 percent of the map unit
Landform: moraines
Slope shape: linear
Slope range: 0 to 5 percent
Parent material: loess over till
Depth to permafrost: 12 to 26 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: high
Drainage class: somewhat poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 to 4 inches; June-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 6.9 inches
Representative Profile:
 OA—0 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 Bjj—9 to 19 inches; very fine sandy loam, moderately high permeability
 Bjjgf—19 to 24 inches; permanently frozen very fine sandy loam, impermeable
 2Cgf—24 to 60 inches; permanently frozen fine sandy loam, impermeable

Minor Components

Typic Histoturbels, moraines, and similar soils: 10 to 15 percent of the map unit

689—Typic Dystricrypts-Typic Histoturbels complex, moraines

Elevation: 1,286 to 1,585 feet
Mean annual precipitation: 15 to 16 inches
Frost-free period: 70 to 95 days

Typic Dystricrypts, moraines, and similar soils

Extent: 30 to 50 percent of the map unit
Landform: moraines
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 0 to 10 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 6.3 inches
Representative Profile:
 Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 A—4 to 5 inches; silt loam, moderately high permeability
 Bw1—5 to 8 inches; sandy loam, high permeability
 2Bw2—8 to 24 inches; gravelly sandy loam, high permeability
 2C—24 to 60 inches; gravelly sandy loam, high permeability

Typic Histoturbels, moraines, and similar soils

Extent: 30 to 50 percent of the map unit
Landform: moraines
Slope shape: linear, concave
Slope range: 0 to 5 percent
Parent material: organic material over loess over till
Depth to permafrost: 8 to 22 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: very poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 inches
Ponding: occasional
Available water capacity (approximate): 7.5 inches
Representative Profile:
 Oe—0 to 9 inches; mucky peat, high permeability
 OA—9 to 15 inches; mucky silt loam, moderately high permeability
 Bjjg—15 to 19 inches; silt loam, moderately high permeability
 Cjff—19 to 28 inches; permanently frozen silt loam, impermeable
 Cf, 2Cf—28 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Aquiturbels, moraines, and similar soils: 5 to 20 percent of the map unit

690—Typic Dystricrypts-Typic Histoturbels complex, ridges

Elevation: 1,775 to 3,740 feet

Mean annual precipitation: 22 to 30 inches

Frost-free period: 70 to 95 days

Typic Dystricrypts, ridges, and similar soils

Extent: 60 to 70 percent of the map unit

Landform: ridges

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 25 to 60 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.1 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

Bw—6 to 13 inches; silt loam, moderately high permeability

2BC—13 to 18 inches; sandy loam, high permeability

2C—18 to 60 inches; very gravelly coarse sand, high permeability

Typic Histoturbels, ridges, and similar soils

Extent: 30 to 40 percent of the map unit

Landform: ridges on hills, mountains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 6 to 30 percent

Parent material: loess over alluvium and/or colluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to

10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

Oe—10 to 11 inches; mucky peat, high permeability

OA—11 to 13 inches; mucky silt loam, moderately high permeability

Bjff—13 to 20 inches; permanently frozen silt loam, impermeable

2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

691—Typic Dystrocryepts-Typic Histoturbels-Folists association

Elevation: 1,900 to 3,924 feet

Mean annual precipitation: 22 to 36 inches

Frost-free period: 70 to 95 days

Typic Dystrocryepts, high moraines, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: moraines

Position on slope: shoulders, backslopes, summits

Slope shape: linear, convex

Slope range: 3 to 10 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 5.8 inches

Representative Profile:

Oe—0 to 2 inches; moderately decomposed plant material, high permeability

A—2 to 3 inches; silt loam, moderately high permeability

2Bw—3 to 4 inches; gravelly sandy loam, high permeability

2BC—4 to 9 inches; gravelly sandy loam, high permeability

2C—9 to 60 inches; gravelly sandy loam, high permeability

Typic Histoturbels, high moraines, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: moraines

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 5 to 20 percent

Parent material: organic material over loess over till

Depth to permafrost: 12 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 12 inches

Ponding: none

Available water capacity (approximate): 4.4 inches

Representative Profile:

Oi—0 to 6 inches; peat, high permeability

Oe—6 to 11 inches; mucky peat, high permeability

OA—11 to 15 inches; mucky silt loam, moderately high permeability

Bjif—15 to 24 inches; permanently frozen loam, impermeable

Cf—24 to 60 inches; permanently frozen material, impermeable

Folists, high moraines, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: moraines

Position on slope: toeslopes, footslopes

Slope shape: concave, linear

Slope range: 5 to 20 percent

Parent material: organic material over colluvium and/or till

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

OA—10 to 14 inches; mucky silt loam, moderately high permeability

2C—14 to 60 inches; stones, very high permeability

Minor Components

Histels, high moraines, and similar soils: 10 to 25 percent of the map unit

692—Typic Dystricrypts-Typic Histoturbels-Typic Aquiturbels complex

Elevation: 1,791 to 2,749 feet

Mean annual precipitation: 26 to 30 inches

Frost-free period: 70 to 95 days

Typic Dystricrypts, ridges, and similar soils

Extent: 50 to 70 percent of the map unit

Landform: ridges

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 2 to 22 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.1 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

Bw—6 to 13 inches; silt loam, moderately high permeability

2BC—13 to 18 inches; sandy loam, high permeability

2C—18 to 60 inches; very gravelly coarse sand, high permeability

Typic Histoturbels, ridges, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: ridges on hills, alluvial fans

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 3 to 20 percent

Parent material: loess over alluvium and/or colluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

Oe—10 to 11 inches; mucky peat, high permeability

OA—11 to 13 inches; mucky silt loam, moderately high permeability

Bjff—13 to 20 inches; permanently frozen silt loam, impermeable

2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

Typic Aquiturbels, ridges, and similar soils

Extent: 10 to 20 percent of the map unit

Landform: hills

Position on slope: footslopes, backslopes, shoulders

Slope shape: linear, convex, concave

Slope range: 10 to 20 percent

Parent material: loess

Depth to permafrost: 8 to 31 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—6 to 8 inches

Ponding: none

Available water capacity (approximate): 1.5 inches

Representative Profile:

Oi—0 to 5 inches; slightly decomposed plant material, high permeability

A—5 to 8 inches; silt loam, high permeability

Bjggf—8 to 15 inches; permanently frozen silt loam, impermeable

Cf1—15 to 24 inches; permanently frozen silt loam, impermeable

Cf2—24 to 60 inches; permanently frozen material, impermeable

693—Typic Dystrocrypts-Typic Histoturbels-Typic Cryofluvents complex

Elevation: 1,647 to 3,412 feet

Mean annual precipitation: 25 to 28 inches

Frost-free period: 70 to 95 days

Typic Dystrocryepts, ridges, and similar soils

Extent: 60 to 75 percent of the map unit

Landform: ridges

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 25 to 45 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.1 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

Bw—6 to 13 inches; silt loam, moderately high permeability

2BC—13 to 18 inches; sandy loam, high permeability

2C—18 to 60 inches; very gravelly coarse sand, high permeability

Typic Histoturbels, ridges, and similar soils

Extent: 15 to 30 percent of the map unit

Landform: ridges on hills, mountains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 30 to 50 percent

Parent material: loess over alluvium and/or colluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

Oe—10 to 11 inches; mucky peat, high permeability

OA—11 to 13 inches; mucky silt loam, moderately high permeability

Bjff—13 to 20 inches; permanently frozen silt loam, impermeable

2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

Typic Cryofluvents, ridges, and similar soils

Extent: 10 to 15 percent of the map unit

Landform: drainageways on mountains

Position on slope: footslopes, backslopes

Slope shape: linear

Slope range: 20 to 45 percent

Parent material: loess over alluvium

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 6.2 inches

Representative Profile:

O_i—0 to 6 inches; slightly decomposed plant material, high permeability

A—6 to 9 inches; silt loam, moderately high permeability

C—9 to 24 inches; very fine sandy loam, moderately high permeability

2C—24 to 60 inches; stratified very fine sandy loam to silt loam, high permeability

694—Typic Dystrogelepts-Aquic Dystrocryepts-Orthels complex

Elevation: 2,290 to 3,816 feet

Mean annual precipitation: 25 to 25 inches

Frost-free period: 60 to 80 days

Typic Dystrogelepts, mountains, and similar soils

Extent: 50 to 60 percent of the map unit

Landform: moraines, hills

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 20 to 40 percent

Parent material: loess over glaciofluvial deposits

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 4.8 inches

Representative Profile:

O_i—0 to 4 inches; slightly decomposed plant material, high permeability

AO—4 to 6 inches; mucky silt loam, moderately high permeability

Bw—6 to 9 inches; silt loam, moderately high permeability

2C1—9 to 18 inches; loamy very fine sand, high permeability

2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Aquic Dystrocryepts, mountains, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: moraines

Position on slope: summits, backslopes

Slope shape: linear

Slope range: 0 to 35 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: moderately well drained

Flooding: none

Depth to high water table (approximate): April-May—8 to 12 inches; June-Sept.—26 to more than 60 inches

Ponding: none

Available water capacity (approximate): 5.4 inches

Representative Profile:

Oe—0 to 5 inches; moderately decomposed plant material, moderately high permeability

OA—5 to 10 inches; mucky silt loam, moderately high permeability

2Bg—10 to 19 inches; very gravelly coarse sandy loam, high permeability

2C—19 to 60 inches; very gravelly coarse sandy loam, high permeability

Orthels, mountains, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: mountains

Position on slope: backslopes, footslopes

Slope shape: linear, concave

Slope range: 0 to 15 percent

Parent material: organic material over colluvium and/or eolian deposits over glaciofluvial deposits

Depth to permafrost: 9 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 15 inches

Ponding: none

Available water capacity (approximate): 4.3 inches

Representative Profile:

Oi—0 to 2 inches; slightly decomposed plant material, high permeability

Oa—2 to 7 inches; highly decomposed plant material, moderately high permeability

A—7 to 9 inches; mucky silt loam, moderately high permeability

2Bg—9 to 12 inches; sandy loam, high permeability

2Cf—12 to 60 inches; permanently frozen gravelly loam, impermeable

Minor Components

Histels, mountains, and similar soils: 5 to 10 percent of the map unit

695—Typic Dystroglepts-Aquic Dystrocryepts-Typic Haplorthels complex

Elevation: 2,234 to 3,802 feet

Mean annual precipitation: 22 to 26 inches

Frost-free period: 60 to 80 days

Typic Dystroglepts, mountains, and similar soils

Extent: 25 to 40 percent of the map unit

Landform: hills, moraines

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 0 to 32 percent

Parent material: loess over glaciofluvial deposits
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 4.8 inches
Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 AO—4 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 2C1—9 to 18 inches; loamy very fine sand, high permeability
 2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Aquic Dystricrypts, mountains, and similar soils

Extent: 20 to 30 percent of the map unit
Landform: moraines
Position on slope: backslopes, summits
Slope shape: linear
Slope range: 10 to 35 percent
Parent material: loess over till
Hazard of erosion (organic mat removed): by water—severe; by wind—moderate
Runoff: medium
Drainage class: moderately well drained
Flooding: none
Depth to high water table (approximate): April-May—8 to 12 inches; June-Sept.—26 to more than 60 inches
Ponding: none
Available water capacity (approximate): 5.4 inches
Representative Profile:

Oe—0 to 5 inches; moderately decomposed plant material, moderately high permeability
 OA—5 to 10 inches; mucky silt loam, moderately high permeability
 2Bg—10 to 19 inches; very gravelly coarse sandy loam, high permeability
 2C—19 to 60 inches; very gravelly coarse sandy loam, high permeability

Typic Haplorthels, mountains, and similar soils

Extent: 20 to 30 percent of the map unit
Landform: mountains
Position on slope: backslopes
Slope shape: linear
Slope range: 20 to 35 percent
Parent material: colluvium and/or slope alluvium
Depth to permafrost: 8 to 16 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: somewhat poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—16 to more than 60 inches
Ponding: none
Available water capacity (approximate): 3.1 inches

Representative Profile:

Oe—0 to 4 inches; moderately decomposed plant material, high permeability
 A—4 to 5 inches; mucky silt loam, moderately high permeability
 Bw—5 to 7 inches; silt loam, moderately high permeability
 C—7 to 15 inches; gravelly sandy loam, high permeability
 2Cf—15 to 60 inches; permanently frozen loamy sand, impermeable

Ruptic Histoturbels, mountains, and similar soils

Extent: 15 to 30 percent of the map unit

Landform: hills

Position on slope: backslopes, footslopes

Slope shape: linear, concave

Slope range: 15 to 25 percent

Parent material: organic material over loess over glaciofluvial deposits

Depth to permafrost: 11 to 24 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 to 4 inches; June-Sept.—7 to 12 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Representative Profile:

Oi—0 to 12 inches; peat, high permeability
 Oe—12 to 14 inches; mucky peat, high permeability
 OA—14 to 17 inches; mucky silt loam, high permeability
 BCjff—17 to 20 inches; permanently frozen silt loam, impermeable
 BCjff—20 to 39 inches; permanently frozen silt loam, impermeable
 Cf, 2Cf—39 to 60 inches; permanently frozen material, impermeable

696—Typic Dystrogelepts-Lithic Cryofolists complex

Elevation: 2,677 to 5,197 feet

Mean annual precipitation: 28 to 37 inches

Frost-free period: 60 to 80 days

Typic Dystrogelepts, mountains, and similar soils

Extent: 75 to 85 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 5 to 15 percent

Parent material: loess over colluvium and/or slope alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 4.8 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 AO—4 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 2C1—9 to 18 inches; loamy very fine sand, high permeability
 2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Lithic Cryofolists, mountains, and similar soils

Extent: 15 to 25 percent of the map unit
Landform: mountains
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 10 to 55 percent
Parent material: loess over residuum
Depth to bedrock (lithic): 4 to 14 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—slight
Runoff: high
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 1.5 inches
Representative Profile:
 Oi—0 to 8 inches; peat, high permeability
 A—8 to 10 inches; silt loam, high permeability
 R—10 to 60 inches; bedrock, impermeable

Minor Components

Aquic Dystricrypts, mountains, and similar soils: 0 to 10 percent of the map unit
 Lithic Dystricrypts, mountains, and similar soils: 0 to 10 percent of the map unit

697—Typic Dystrigelepts-Typic Cryaquepts-Humic Dystricrypts complex

Elevation: 2,457 to 4,688 feet
Mean annual precipitation: 23 to 27 inches
Frost-free period: 60 to 80 days

Typic Dystrigelepts, mountains, and similar soils

Extent: 30 to 50 percent of the map unit
Landform: mountains
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 20 to 60 percent
Parent material: loess over colluvium and/or slope alluvium
Hazard of erosion (organic mat removed): by water—severe; by wind—severe
Runoff: high
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none

Available water capacity (approximate): 4.8 inches

Representative Profile:

- Oi—0 to 4 inches; slightly decomposed plant material, high permeability
- AO—4 to 6 inches; mucky silt loam, moderately high permeability
- Bw—6 to 9 inches; silt loam, moderately high permeability
- 2C1—9 to 18 inches; loamy very fine sand, high permeability
- 2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Typic Cryaquepts, mountains, and similar soils

Extent: 25 to 40 percent of the map unit

Landform: mountains

Position on slope: footslopes, toeslopes, backslopes

Slope shape: linear, concave

Slope range: 2 to 10 percent

Parent material: loess over alluvium and/or colluvium

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—5 to 30 inches

Ponding: none

Available water capacity (approximate): 3.4 inches

Representative Profile:

- Oa—0 to 3 inches; highly decomposed plant material, moderately high permeability
- Bg—3 to 8 inches; very gravelly coarse sandy loam, high permeability
- 2C—8 to 60 inches; very gravelly coarse sand, high permeability

Humic Dystrocrypts, mountains, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders

Slope shape: linear, convex

Slope range: 2 to 15 percent

Parent material: loess over colluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.8 inches

Representative Profile:

- OA—0 to 4 inches; mucky silt loam, moderately high permeability
- A—4 to 11 inches; silt loam, moderately high permeability
- 2Bw—11 to 27 inches; very stony coarse sandy loam, high permeability
- 2C—27 to 60 inches; very gravelly loamy sand, high permeability

Minor Components

Typic Histoturbels, mountains, and similar soils: 0 to 10 percent of the map unit

698—Typic Haplorthels-Typic Aquiturbels-Ruptic Histoturbels complex

Elevation: 1,519 to 3,583 feet
Mean annual precipitation: 18 to 34 inches
Frost-free period: 70 to 95 days

Typic Haplorthels, high moraines, and similar soils

Extent: 35 to 45 percent of the map unit
Landform: moraines
Position on slope: summits, backslopes, toeslopes
Slope shape: linear, concave
Slope range: 3 to 20 percent
Parent material: loess over till
Depth to permafrost: 8 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 inches
Ponding: none
Available water capacity (approximate): 2.2 inches
Representative Profile:
 Oi—0 to 6 inches; slightly decomposed plant material, high permeability
 AO—6 to 10 inches; mucky silt loam, moderately high permeability
 2Bf, Bf—10 to 15 inches; permanently frozen fine sandy loam, impermeable
 2Cf—15 to 60 inches; permanently frozen gravelly coarse sandy loam, impermeable

Typic Aquiturbels, high moraines, and similar soils

Extent: 20 to 40 percent of the map unit
Landform: drainageways on moraines
Position on slope: footslopes, backslopes
Slope shape: linear
Slope range: 3 to 20 percent
Parent material: alluvium over till
Depth to permafrost: 16 to 31 inches
Hazard of erosion (organic mat removed): by water—moderate; by wind—severe
Runoff: high
Drainage class: poorly drained
Flooding: rare
Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 to 22 inches
Ponding: none
Available water capacity (approximate): 4.9 inches
Representative Profile:
 Oe—0 to 3 inches; moderately decomposed plant material, high permeability
 AO—3 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 11 inches; loamy sand, high permeability
 Bg, Bgjj—11 to 22 inches; silt loam, moderately high permeability
 Bjjgf—22 to 24 inches; permanently frozen very fine sandy loam, impermeable
 Cgf—24 to 60 inches; permanently frozen gravelly loam, impermeable

Ruptic Histoturbels, high moraines, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: moraines

Position on slope: backslopes, toeslopes

Slope shape: linear, concave

Slope range: 10 to 35 percent

Parent material: loess over till

Depth to permafrost: 8 to 20 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2 inches

Representative Profile:

Oi—0 to 5 inches; peat, high permeability

Oe—5 to 8 inches; mucky peat, high permeability

Af—8 to 10 inches; permanently frozen mucky silt loam, impermeable

BCjff—10 to 11 inches; permanently frozen silt loam, impermeable

2Cf—11 to 60 inches; permanently frozen gravelly sandy loam, impermeable

Minor Components

Histels, high moraines, and similar soils: 5 to 10 percent of the map unit

Typic Dystrocryepts, high moraines, and similar soils: 5 to 10 percent of the map unit

699—Typic Haploturbels-Typic Cryaquepts-Typic Dystrogelepts complex

Elevation: 2,385 to 5,335 feet

Mean annual precipitation: 25 to 39 inches

Frost-free period: 60 to 80 days

Typic Haploturbels, mountains, and similar soils

Extent: 30 to 40 percent of the map unit

Landform: mountains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: concave, linear

Slope range: 20 to 35 percent

Parent material: loess over colluvium and/or glaciofluvial deposits

Depth to permafrost: 8 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: somewhat poorly drained

Flooding: none

Depth to high water table (approximate): April-May—8 to 12 inches; June-Sept.—18 to 26 inches

Ponding: none

Available water capacity (approximate): 3.8 inches

Representative Profile:

Oe—0 to 4 inches; moderately decomposed plant material, high permeability
 OA—4 to 5 inches; mucky silt loam, moderately high permeability
 Bw—5 to 19 inches; very fine sandy loam, moderately high permeability
 Bjff—19 to 25 inches; permanently frozen very fine sandy loam, impermeable
 Cf—25 to 60 inches; permanently frozen material, impermeable

Typic Cryaquepts, mountains, and similar soils

Extent: 20 to 30 percent of the map unit

Landform: mountains

Position on slope: backslopes, toeslopes, footslopes

Slope shape: concave, linear

Slope range: 15 to 30 percent

Parent material: loess over alluvium and/or colluvium

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—5 to 30 inches

Ponding: none

Available water capacity (approximate): 3.4 inches

Representative Profile:

Oa—0 to 3 inches; highly decomposed plant material, moderately high permeability
 Bg—3 to 8 inches; very gravelly coarse sandy loam, high permeability
 2C—8 to 60 inches; very gravelly coarse sand, high permeability

Typic Dystrogelepts, mountains, and similar soils

Extent: 20 to 30 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 10 to 30 percent

Parent material: loess over colluvium and/or slope alluvium

Hazard of erosion (organic mat removed): by water—moderate; by wind—severe

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 4.8 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 AO—4 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 2C1—9 to 18 inches; loamy very fine sand, high permeability
 2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Minor Components

Lithic Dystrocryepts, mountains, and similar soils: 15 to 20 percent of the map unit

700—Typic Haploturbels-Typic Histoturbels-Histels complex

Elevation: 1,191 to 1,657 feet
Mean annual precipitation: 14 to 19 inches
Frost-free period: 75 to 105 days

Typic Haploturbels, outwash plains, and similar soils

Extent: 35 to 50 percent of the map unit
Landform: outwash plains
Slope shape: concave, linear
Slope range: 0 to 3 percent
Parent material: loess over outwash
Depth to permafrost: 12 to 28 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: low
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to more than 60 inches
Ponding: none
Available water capacity (approximate): 6.5 inches
Representative Profile:
 Oi—0 to 2 inches; slightly decomposed plant material, high permeability
 OA—2 to 9 inches; mucky silt loam, moderately high permeability
 A—9 to 14 inches; silt loam, moderately high permeability
 Bjj—14 to 20 inches; silt loam, moderately high permeability
 Bjjf—20 to 24 inches; permanently frozen silt loam, impermeable
 Cf—24 to 60 inches; permanently frozen material, impermeable

Typic Histoturbels, outwash plains, and similar soils

Extent: 30 to 40 percent of the map unit
Landform: outwash plains
Slope shape: linear, concave
Slope range: 0 to 3 percent
Parent material: organic material over loess over outwash
Depth to permafrost: 12 to 24 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 18 inches
Ponding: none
Available water capacity (approximate): 5 inches
Representative Profile:
 Oi—0 to 7 inches; peat, high permeability
 Oe—7 to 10 inches; mucky peat, high permeability
 AO—10 to 13 inches; mucky silt loam, moderately high permeability
 Bw—13 to 18 inches; silt loam, moderately high permeability
 Cf1—18 to 20 inches; permanently frozen silt loam, impermeable
 Cf2—20 to 60 inches; permanently frozen material, impermeable

Histels, outwash plains, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: outwash plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: organic material over loess over outwash

Depth to permafrost: 12 to 28 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: low

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches

Ponding: none

Available water capacity (approximate): 10.7 inches

Representative Profile:

Oe—0 to 20 inches; mucky peat, high permeability

A—20 to 24 inches; silt loam, moderately high permeability

Bjff—24 to 27 inches; permanently frozen silt loam, impermeable

Cgf—27 to 34 inches; permanently frozen very fine sandy loam, impermeable

Cf—34 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Aquiturbels, outwash plains, and similar soils: 0 to 5 percent of the map unit

701—Typic Historthels-Typic Histoturbels-Terric Fibristels, complex

Elevation: 1,522 to 1,759 feet

Mean annual precipitation: 17 to 21 inches

Frost-free period: 75 to 105 days

Typic Historthels, outwash plains, and similar soils

Extent: 30 to 50 percent of the map unit

Landform: outwash plains

Slope shape: linear, concave

Slope range: 0 to 5 percent

Parent material: organic material over loess over outwash

Depth to permafrost: 10 to 16 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 14 inches

Ponding: none

Available water capacity (approximate): 3.9 inches

Representative Profile:

Oi—0 to 7 inches; peat, high permeability

Oe—7 to 12 inches; mucky peat, high permeability

OA—12 to 14 inches; mucky silt loam, moderately high permeability

Cfg—14 to 24 inches; permanently frozen silt loam, impermeable
 Cf—24 to 60 inches; permanently frozen material, impermeable

Typic Histoturbels, outwash plains, and similar soils

Extent: 25 to 45 percent of the map unit

Landform: outwash plains

Slope shape: linear, concave

Slope range: 0 to 2 percent

Parent material: organic material over loess over outwash

Depth to permafrost: 12 to 24 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 18 inches

Ponding: none

Available water capacity (approximate): 5 inches

Representative Profile:

Oi—0 to 7 inches; peat, high permeability

Oe—7 to 10 inches; mucky peat, high permeability

AO—10 to 13 inches; mucky silt loam, moderately high permeability

Bw—13 to 18 inches; silt loam, moderately high permeability

Cf1—18 to 20 inches; permanently frozen silt loam, impermeable

Cf2—20 to 60 inches; permanently frozen material, impermeable

Teric Fibristels, outwash plains, and similar soils

Extent: 10 to 25 percent of the map unit

Landform: outwash plains

Slope shape: linear

Slope range: 0 to 5 percent

Parent material: organic material over loess over outwash

Depth to permafrost: 12 to 28 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches

Ponding: none

Available water capacity (approximate): 10.7 inches

Representative Profile:

Oi—0 to 20 inches; peat, high permeability

A—20 to 24 inches; silt loam, moderately high permeability

Bjif—24 to 27 inches; permanently frozen silt loam, impermeable

Cgf—27 to 34 inches; permanently frozen very fine sandy loam, impermeable

Cf—34 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Aquiturbels, outwash plains, and similar soils: 5 to 15 percent of the map unit

702—Typic Histoturbels

Elevation: 1,142 to 1,486 feet
Mean annual precipitation: 15 to 17 inches
Frost-free period: 75 to 105 days

Typic Histoturbels, river valleys, and similar soils

Extent: 60 to 80 percent of the map unit
Landform: outwash plains
Slope shape: linear, concave
Slope range: 0 to 10 percent
Parent material: organic material over loess
Depth to permafrost: 10 to 18 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 10 inches
Ponding: none
Available water capacity (approximate): 5 inches
Representative Profile:
 Oe—0 to 7 inches; mucky peat, high permeability
 Oi—7 to 12 inches; peat, high permeability
 A—12 to 15 inches; mucky silt loam, moderately high permeability
 Bjjgf—15 to 60 inches; permanently frozen very fine sandy loam, impermeable

Minor Components

Aquic Dystrocryepts, river valleys, and similar soils: 10 to 15 percent of the map unit
 Histels, river valleys, and similar soils: 10 to 15 percent of the map unit
 Typic Dystrocryepts, river valleys, and similar soils: 0 to 5 percent of the map unit

703—Typic Histoturbels-Glacic Aquiturbels-Histels association

Elevation: 1,946 to 3,107 feet
Mean annual precipitation: 23 to 28 inches
Frost-free period: 70 to 95 days

Typic Histoturbels, high moraines, and similar soils

Extent: 50 to 70 percent of the map unit
Landform: moraines
Position on slope: backslopes, footslopes, toeslopes
Slope shape: linear, concave
Slope range: 0 to 15 percent
Parent material: organic material over loess over till
Depth to permafrost: 12 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 12 inches

Ponding: none

Available water capacity (approximate): 4.4 inches

Representative Profile:

Oi—0 to 6 inches; peat, high permeability

Oe—6 to 11 inches; mucky peat, high permeability

OA—11 to 15 inches; mucky silt loam, moderately high permeability

Bjff—15 to 24 inches; permanently frozen loam, impermeable

Cf—24 to 60 inches; permanently frozen material, impermeable

Glacic Aquiturbels, high moraines, and similar soils

Extent: 15 to 30 percent of the map unit

Landform: till plains

Slope shape: linear

Slope range: 0 to 5 percent

Parent material: loess over frozen water

Depth to permafrost: 10 to 16 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—severe

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 14 inches

Ponding: none

Available water capacity (approximate): 5.8 inches

Representative Profile:

Oa—0 to 4 inches; highly decomposed plant material, moderately high permeability

Bjgg—4 to 14 inches; silt loam, moderately high permeability

Bjggf—14 to 16 inches; permanently frozen silt loam, impermeable

Wf—16 to 60 inches; permanently frozen water, impermeable

Histels, high moraines, and similar soils

Extent: 10 to 20 percent of the map unit

Landform: moraines, till plains

Slope shape: linear, concave

Slope range: 0 to 5 percent

Parent material: loess over till

Depth to permafrost: 16 to 31 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 22 inches

Ponding: none

Available water capacity (approximate): 10.6 inches

Representative Profile:

Oe—0 to 4 inches; mucky peat, high permeability

Oa—4 to 22 inches; muck, moderately high permeability

OAjff—22 to 28 inches; permanently frozen mucky silt loam, impermeable

Bf—28 to 60 inches; permanently frozen material, impermeable

704—Typic Histoturbels-Histels-Typic Dystrogelepts complex

Elevation: 2,178 to 3,448 feet
Mean annual precipitation: 23 to 27 inches
Frost-free period: 60 to 80 days

Typic Histoturbels, mountains, and similar soils

Extent: 40 to 60 percent of the map unit
Landform: V-shaped valleys, moraines
Position on slope: backslopes, footslopes, toeslopes
Slope shape: linear, concave
Slope range: 2 to 55 percent
Parent material: loess over glaciofluvial deposits
Depth to permafrost: 8 to 20 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—slight
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches
Ponding: none
Available water capacity (approximate): 5.8 inches
Representative Profile:
 Oi—0 to 3 inches; peat, high permeability
 Oe—3 to 6 inches; mucky peat, high permeability
 OA—6 to 13 inches; mucky silt loam, moderately high permeability
 Bw—13 to 18 inches; silt loam, moderately high permeability
 2BCjff—18 to 60 inches; permanently frozen gravelly silt loam, impermeable

Histels, mountains, and similar soils

Extent: 20 to 40 percent of the map unit
Landform: mountains
Position on slope: footslopes, toeslopes, backslopes
Slope shape: linear, concave
Slope range: 10 to 30 percent
Parent material: organic material over loess over colluvium
Depth to permafrost: 10 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 22 inches
Ponding: none
Available water capacity (approximate): 6.4 inches
Representative Profile:
 Oi—0 to 3 inches; peat, high permeability
 Oa—3 to 15 inches; muck, moderately high permeability
 Oaf—15 to 20 inches; permanently frozen highly decomposed plant material, impermeable
 OAf—20 to 24 inches; permanently frozen mucky fine sand, impermeable
 Cf—24 to 60 inches; permanently frozen material, impermeable

Typic Dystrogelepts, mountains, and similar soils

Extent: 20 to 30 percent of the map unit

Landform: mountains

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 20 to 40 percent

Parent material: loess over colluvium and/or slope alluvium

Hazard of erosion (organic mat removed): by water—severe; by wind—severe

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 4.8 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability

AO—4 to 6 inches; mucky silt loam, moderately high permeability

Bw—6 to 9 inches; silt loam, moderately high permeability

2C1—9 to 18 inches; loamy very fine sand, high permeability

2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Minor Components

Typic Aquiturbels, mountains, and similar soils: 0 to 5 percent of the map unit

705—Typic Histoturbels-Typic Aquiturbels-Terric Fibristels complex

Elevation: 1,286 to 2,717 feet

Mean annual precipitation: 16 to 24 inches

Frost-free period: 70 to 95 days

Typic Histoturbels, ridges, and similar soils

Extent: 45 to 55 percent of the map unit

Landform: terraces, hills

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 0 to 15 percent

Parent material: loess over alluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

Oe—10 to 11 inches; mucky peat, high permeability

OA—11 to 13 inches; mucky silt loam, moderately high permeability
 Bjjf—13 to 20 inches; permanently frozen silt loam, impermeable
 2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

Typic Aquiturbels, ridges, and similar soils

Extent: 15 to 30 percent of the map unit
Landform: alluvial fans
Slope shape: linear
Slope range: 0 to 5 percent
Parent material: alluvium and/or loess
Depth to permafrost: 8 to 31 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—2 to 4 inches; June-Sept.—6 to 8 inches
Ponding: none
Available water capacity (approximate): 1.5 inches
Representative Profile:
 Oi—0 to 5 inches; slightly decomposed plant material, high permeability
 A—5 to 8 inches; silt loam, high permeability
 Bjjgf—8 to 15 inches; permanently frozen silt loam, impermeable
 Cf1—15 to 24 inches; permanently frozen silt loam, impermeable
 Cf2—24 to 60 inches; permanently frozen material, impermeable

Terric Fibristels, ridges, and similar soils

Extent: 15 to 25 percent of the map unit
Landform: terraces
Slope shape: linear
Slope range: 0 to 2 percent
Parent material: organic material over loess
Depth to permafrost: 12 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—2 to 6 inches; June-Sept.—10 to 15 inches
Ponding: none
Available water capacity (approximate): 1.8 inches
Representative Profile:
 Oi—0 to 12 inches; peat, high permeability
 Oef—12 to 17 inches; permanently frozen mucky peat, impermeable
 Bjjf—17 to 24 inches; permanently frozen silt loam, impermeable
 Cf—24 to 60 inches; permanently frozen material, impermeable

Minor Components

Typic Dystricrypts, ridges, and similar soils: 5 to 10 percent of the map unit

706—Typic Histoturbels-Typic Dystrocryepts complex

Elevation: 1,716 to 1,880 feet
Mean annual precipitation: 19 to 23 inches
Frost-free period: 75 to 105 days

Typic Histoturbels, river valleys, and similar soils

Extent: 60 to 90 percent of the map unit
Landform: alluvial fans
Slope shape: linear, concave
Slope range: 0 to 5 percent
Parent material: organic material over loess
Depth to permafrost: 10 to 18 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 10 inches
Ponding: none
Available water capacity (approximate): 5 inches
Representative Profile:
 Oe—0 to 7 inches; mucky peat, high permeability
 Oi—7 to 12 inches; peat, high permeability
 A—12 to 15 inches; mucky silt loam, moderately high permeability
 Bjjgf—15 to 60 inches; permanently frozen very fine sandy loam, impermeable

Typic Dystrocryepts, river valleys, and similar soils

Extent: 10 to 40 percent of the map unit
Landform: drainageways on alluvial fans
Slope shape: linear, convex
Slope range: 0 to 5 percent
Parent material: loess over alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: well drained
Flooding: rare
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 11.7 inches
Representative Profile:
 Oe—0 to 7 inches; moderately decomposed plant material, high permeability
 A—7 to 10 inches; silt loam, moderately high permeability
 Bw—10 to 24 inches; silt loam, moderately high permeability
 2C—24 to 60 inches; very gravelly coarse sand, high permeability

707—Typic Histoturbels-Typic Dystrocryepts complex, hills

Elevation: 988 to 2,211 feet
Mean annual precipitation: 19 to 19 inches
Frost-free period: 75 to 105 days

Typic Histoturbels, hills, and similar soils

Extent: 50 to 65 percent of the map unit

Landform: hills

Slope shape: linear, concave

Slope range: 3 to 10 percent

Parent material: loess

Depth to permafrost: 14 to 24 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: somewhat poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 6.1 inches

Representative Profile:

Oe—0 to 6 inches; mucky peat, high permeability

OA—6 to 11 inches; mucky silt loam, moderately high permeability

Bjj—11 to 16 inches; silt loam, moderately high permeability

Cjff—16 to 21 inches; permanently frozen silt loam, impermeable

Cf—21 to 60 inches; permanently frozen material, impermeable

Typic Dystrocryepts, hills, and similar soils

Extent: 25 to 35 percent of the map unit

Landform: hills

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 35 to 70 percent

Parent material: loess over colluvium and/or residuum

Depth to bedrock (lithic): 16 to 60 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: high

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 8.4 inches

Representative Profile:

Oi—0 to 6 inches; slightly decomposed plant material, high permeability

A—6 to 8 inches; silt loam, moderately high permeability

Bw—8 to 12 inches; silt loam, moderately high permeability

BC—12 to 24 inches; very fine sandy loam, moderately high permeability

C—24 to 28 inches; very gravelly sandy loam, high permeability

R—28 to 60 inches; bedrock, impermeable

Minor Components

Typic Haploturbels, hills, and similar soils: 10 to 15 percent of the map unit

708—Typic Histoturbels-Typic Dystrocryepts complex, ridges

Elevation: 1,398 to 3,189 feet

Mean annual precipitation: 17 to 27 inches

Frost-free period: 70 to 95 days

Typic Histoturbels, ridges, and similar soils

Extent: 75 to 85 percent of the map unit

Landform: ridges on hills, ridges on mountains, terraces

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 0 to 25 percent

Parent material: loess over alluvium and/or colluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

Oe—10 to 11 inches; mucky peat, high permeability

OA—11 to 13 inches; mucky silt loam, moderately high permeability

Bjff—13 to 20 inches; permanently frozen silt loam, impermeable

2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

Typic Dystricrypts, ridges, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: ridges

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 0 to 5 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.1 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

Bw—6 to 13 inches; silt loam, moderately high permeability

2BC—13 to 18 inches; sandy loam, high permeability

2C—18 to 60 inches; very gravelly coarse sand, high permeability

709—Typic Histoturbels-Typic Dystricrypts-Terric Fibristels complex

Elevation: 1,457 to 2,201 feet

Mean annual precipitation: 18 to 22 inches

Frost-free period: 70 to 95 days

Typic Histoturbels, ridges, and similar soils

Extent: 55 to 70 percent of the map unit

Landform: mountains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 0 to 10 percent

Parent material: loess over colluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

Oe—10 to 11 inches; mucky peat, high permeability

OA—11 to 13 inches; mucky silt loam, moderately high permeability

Bjff—13 to 20 inches; permanently frozen silt loam, impermeable

2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

Typic Dystrocrypts, ridges, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: outwash plains

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 2 to 50 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.1 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

Bw—6 to 13 inches; silt loam, moderately high permeability

2BC—13 to 18 inches; sandy loam, high permeability

2C—18 to 60 inches; very gravelly coarse sand, high permeability

Terric Fibristels, ridges, and similar soils

Extent: 5 to 20 percent of the map unit

Landform: terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: organic material over loess

Depth to permafrost: 12 to 20 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—2 to 6 inches; June-Sept.—10 to 15 inches

Ponding: none

Available water capacity (approximate): 1.8 inches

Representative Profile:

Oi—0 to 12 inches; peat, high permeability

Oef—12 to 17 inches; permanently frozen mucky peat, impermeable

Bjff—17 to 24 inches; permanently frozen silt loam, impermeable

Cf—24 to 60 inches; permanently frozen material, impermeable

710—Typic Histoturbels-Typic Dystrocryepts-Typic Historthels complex

Elevation: 2,024 to 3,022 feet

Mean annual precipitation: 25 to 25 inches

Frost-free period: 70 to 95 days

Typic Histoturbels, ridges, and similar soils

Extent: 45 to 55 percent of the map unit

Landform: ridges on hills, mountains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 0 to 25 percent

Parent material: loess over alluvium and/or colluvium

Depth to permafrost: 10 to 20 inches

Hazard of erosion (organic mat removed): by water—severe; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 2.7 inches

Representative Profile:

Oi—0 to 10 inches; peat, high permeability

Oe—10 to 11 inches; mucky peat, high permeability

OA—11 to 13 inches; mucky silt loam, moderately high permeability

Bjff—13 to 20 inches; permanently frozen silt loam, impermeable

2Cfg—20 to 60 inches; permanently frozen silt loam, impermeable

Typic Dystrocryepts, ridges, and similar soils

Extent: 15 to 30 percent of the map unit

Landform: ridges

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 20 to 30 percent

Parent material: loess over outwash

Hazard of erosion (organic mat removed): by water—severe; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 7.1 inches

Representative Profile:

Oe—0 to 3 inches; moderately decomposed plant material, high permeability

A—3 to 6 inches; silt loam, moderately high permeability

Bw—6 to 13 inches; silt loam, moderately high permeability

2BC—13 to 18 inches; sandy loam, high permeability

2C—18 to 60 inches; very gravelly coarse sand, high permeability

Typic Historthels, ridges, and similar soils

Extent: 15 to 25 percent of the map unit

Landform: ridges

Position on slope: backslopes, footslopes

Slope shape: linear, concave

Slope range: 0 to 10 percent

Parent material: alluvium and/or loess

Depth to permafrost: 10 to 18 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 6 inches

Representative Profile:

Oe—0 to 9 inches; mucky peat, high permeability

OA—9 to 11 inches; mucky silt loam, moderately high permeability

Bg—11 to 15 inches; sandy loam, moderately high permeability

Bgf—15 to 24 inches; permanently frozen sandy loam, impermeable

2Cf—24 to 60 inches; permanently frozen sandy loam, impermeable

Minor Components

Histels, ridges, and similar soils: 5 to 15 percent of the map unit

Typic Aquiturbels, ridges, and similar soils: 0 to 5 percent of the map unit

711—Typic Histoturbels-Typic Dystrogelepts complex

Elevation: 2,365 to 4,144 feet

Mean annual precipitation: 33 to 38 inches

Frost-free period: 60 to 80 days

Typic Histoturbels, mountains, and similar soils

Extent: 50 to 70 percent of the map unit

Landform: U-shaped valleys

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave
Slope range: 2 to 8 percent
Parent material: loess over glaciofluvial deposits
Depth to permafrost: 8 to 20 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: very high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches
Ponding: none
Available water capacity (approximate): 5.8 inches
Representative Profile:
 Oi—0 to 3 inches; peat, high permeability
 Oe—3 to 6 inches; mucky peat, high permeability
 OA—6 to 13 inches; mucky silt loam, moderately high permeability
 Bw—13 to 18 inches; silt loam, moderately high permeability
 2BCjff—18 to 60 inches; permanently frozen gravelly silt loam, impermeable

Typic Dystrogelepts, mountains, and similar soils

Extent: 15 to 25 percent of the map unit
Landform: mountains
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 10 to 20 percent
Parent material: loess over colluvium and/or slope alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: medium
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 4.8 inches
Representative Profile:
 Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 AO—4 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 2C1—9 to 18 inches; loamy very fine sand, high permeability
 2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Minor Components

Aquic Dystrocryepts, mountains, and similar soils: 5 to 15 percent of the map unit
 Ruptic Histoturbels, mountains, and similar soils: 0 to 10 percent of the map unit

712—Typic Histoturbels-Typic Dystrocryepts-Water complex

Elevation: 1,316 to 1,762 feet
Mean annual precipitation: 16 to 18 inches
Frost-free period: 70 to 95 days

Typic Histoturbels, moraines, and similar soils

Extent: 40 to 60 percent of the map unit

Landform: moraines

Slope shape: linear, concave

Slope range: 0 to 3 percent

Parent material: organic material over loess over till

Depth to permafrost: 8 to 22 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: very poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 inches

Ponding: occasional

Available water capacity (approximate): 7.5 inches

Representative Profile:

Oe—0 to 9 inches; mucky peat, high permeability

OA—9 to 15 inches; mucky silt loam, moderately high permeability

Bjig—15 to 19 inches; silt loam, moderately high permeability

Cjif—19 to 28 inches; permanently frozen silt loam, impermeable

Cf, 2Cf—28 to 60 inches; permanently frozen material, impermeable

Typic Dystrocryepts, moraines, and similar soils

Extent: 25 to 50 percent of the map unit

Landform: moraines

Position on slope: backslopes, shoulders, summits

Slope shape: linear, convex

Slope range: 1 to 15 percent

Parent material: loess over till

Hazard of erosion (organic mat removed): by water—moderate; by wind—moderate

Runoff: medium

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: none

Available water capacity (approximate): 6.3 inches

Representative Profile:

Oi—0 to 4 inches; slightly decomposed plant material, high permeability

A—4 to 5 inches; silt loam, moderately high permeability

Bw1—5 to 8 inches; sandy loam, high permeability

2Bw2—8 to 24 inches; gravelly sandy loam, high permeability

2C—24 to 60 inches; gravelly sandy loam, high permeability

Water

Extent: 15 to 25 percent of the map unit

Landform: lakes

Minor Components

Terric Fibristels, moraines, and similar soils: 0 to 5 percent of the map unit

Typic Aquiturbels, moraines, and similar soils: 0 to 5 percent of the map unit

713—Typic Histoturbels-Typic Haplorthels-Terric Hemistels complex

Elevation: 1,470 to 2,083 feet
Mean annual precipitation: 21 to 25 inches
Frost-free period: 75 to 105 days

Typic Histoturbels, outwash plains, and similar soils

Extent: 35 to 60 percent of the map unit
Landform: outwash plains
Slope shape: linear, concave
Slope range: 0 to 10 percent
Parent material: organic material over loess over outwash
Depth to permafrost: 12 to 24 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—slight
Runoff: high
Drainage class: poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 18 inches
Ponding: none
Available water capacity (approximate): 5 inches
Representative Profile:
 Oi—0 to 7 inches; peat, high permeability
 Oe—7 to 10 inches; mucky peat, high permeability
 AO—10 to 13 inches; mucky silt loam, moderately high permeability
 Bw—13 to 18 inches; silt loam, moderately high permeability
 Cf1—18 to 20 inches; permanently frozen silt loam, impermeable
 Cf2—20 to 60 inches; permanently frozen material, impermeable

Typic Haplorthels, outwash plains, and similar soils

Extent: 20 to 40 percent of the map unit
Landform: outwash plains
Slope shape: linear, concave
Slope range: 0 to 3 percent
Parent material: loess over outwash
Depth to permafrost: 20 to 31 inches
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: low
Drainage class: somewhat poorly drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—6 to more than 60 inches
Ponding: none
Available water capacity (approximate): 9.2 inches
Representative Profile:
 Oi—0 to 5 inches; slightly decomposed plant material, high permeability
 OA—5 to 10 inches; mucky silt loam, moderately high permeability
 A—10 to 13 inches; very fine sandy loam, moderately high permeability
 Bw—13 to 28 inches; very fine sandy loam, moderately high permeability
 Cf—28 to 60 inches; permanently frozen sandy loam, impermeable

Terric Hemistels, outwash plains, and similar soils

Extent: 20 to 40 percent of the map unit

Landform: outwash plains

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: organic material over loess over outwash

Depth to permafrost: 12 to 28 inches

Hazard of erosion (organic mat removed): by water—slight; by wind—slight

Runoff: high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—0 to 8 inches

Ponding: none

Available water capacity (approximate): 10.7 inches

Representative Profile:

Oe—0 to 20 inches; mucky peat, high permeability

A—20 to 24 inches; silt loam, moderately high permeability

Bjff—24 to 27 inches; permanently frozen silt loam, impermeable

Cgf—27 to 34 inches; permanently frozen silt loam, impermeable

Cf—34 to 60 inches; permanently frozen material, impermeable

714—Typic Histoturbels-Typic Haploturbels-Typic Dystrogelepts association

Elevation: 2,224 to 4,114 feet

Mean annual precipitation: 33 to 38 inches

Frost-free period: 60 to 80 days

Typic Histoturbels, mountains, and similar soils

Extent: 30 to 60 percent of the map unit

Landform: outwash plains, till plains

Position on slope: backslopes, footslopes, toeslopes

Slope shape: linear, concave

Slope range: 0 to 10 percent

Parent material: loess over glaciofluvial deposits

Depth to permafrost: 8 to 20 inches

Hazard of erosion (organic mat removed): by water—moderate; by wind—slight

Runoff: very high

Drainage class: poorly drained

Flooding: none

Depth to high water table (approximate): April-May—4 to 6 inches; June-Sept.—8 to 10 inches

Ponding: none

Available water capacity (approximate): 5.8 inches

Representative Profile:

Oi—0 to 3 inches; peat, high permeability

Oe—3 to 6 inches; mucky peat, high permeability

OA—6 to 13 inches; mucky silt loam, moderately high permeability

Bw—13 to 18 inches; silt loam, moderately high permeability

2BCjff—18 to 60 inches; permanently frozen gravelly silt loam, impermeable

Typic Haploturbels, mountains, and similar soils

Extent: 10 to 40 percent of the map unit
Landform: outwash plains, till plains, moraines
Position on slope: toeslopes, footslopes, backslopes
Slope shape: concave, linear
Slope range: 7 to 20 percent
Parent material: loess over glaciofluvial deposits
Depth to permafrost: 8 to 20 inches
Hazard of erosion (organic mat removed): by water—severe; by wind—slight
Runoff: very high
Drainage class: somewhat poorly drained
Flooding: none
Depth to high water table (approximate): April-May—8 to 12 inches; June-Sept.—18 to 26 inches
Ponding: none
Available water capacity (approximate): 3.8 inches
Representative Profile:
 Oe—0 to 4 inches; moderately decomposed plant material, high permeability
 OA—4 to 5 inches; mucky silt loam, moderately high permeability
 Bw—5 to 19 inches; very fine sandy loam, moderately high permeability
 Bjff—19 to 25 inches; permanently frozen very fine sandy loam, impermeable
 Cf—25 to 60 inches; permanently frozen material, impermeable

Typic Dystrogelepts, mountains, and similar soils

Extent: 10 to 25 percent of the map unit
Landform: hills, moraines
Position on slope: backslopes, shoulders, summits
Slope shape: linear, convex
Slope range: 0 to 15 percent
Parent material: loess over glaciofluvial deposits
Hazard of erosion (organic mat removed): by water—slight; by wind—severe
Runoff: low
Drainage class: well drained
Flooding: none
Depth to high water table (approximate): April-Sept.—more than 60 inches
Ponding: none
Available water capacity (approximate): 4.8 inches
Representative Profile:
 Oi—0 to 4 inches; slightly decomposed plant material, high permeability
 AO—4 to 6 inches; mucky silt loam, moderately high permeability
 Bw—6 to 9 inches; silt loam, moderately high permeability
 2C1—9 to 18 inches; loamy very fine sand, high permeability
 2C2—18 to 60 inches; extremely cobbly coarse sand, high permeability

Minor Components

Orthels, mountains, and similar soils: 10 to 15 percent of the map unit
 Ruptic Histoturbels, mountains, and similar soils: 0 to 15 percent of the map unit
 Histels, mountains, and similar soils: 0 to 10 percent of the map unit

715—Volkmar silt loam, undulating

Elevation: 1,585 to 1,680 feet
Mean annual precipitation: 18 to 29 inches
Frost-free period: 75 to 104 days

Volkmar and similar soils

Extent: 80 to 95 percent of the map unit
Landform: stream terraces
Slope shape: linear
Slope range: 0 to 7 percent
Parent material: loess over alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: moderately well drained
Flooding: none
Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches
Ponding: frequent
Available water capacity (approximate): 8.7 inches
Vegetation: white spruce, paper birch, or quaking aspen forest
Representative Profile:
 Oi—0 to 3 inches; very dark gray slightly decomposed plant material, high permeability
 Bw—3 to 10 inches; variegated very fine sandy loam, moderately high permeability
 C—10 to 30 inches; light yellowish brown very fine sandy loam, moderately high permeability
 2C—30 to 60 inches; brown with light gray mottles very gravelly coarse sand, high permeability
Note: This soil has 15 to 40 inches of loamy material over sand and gravel.

Minor Components

Richardson and similar soils: 0 to 10 percent of the map unit
 Tanana and similar soils: 0 to 10 percent of the map unit

716—Volkmar-Nenana complex, 0 to 3 percent slopes

Elevation: 1,309 to 2,014 feet
Mean annual precipitation: 18 to 29 inches
Frost-free period: 75 to 104 days

Volkmar and similar soils

Extent: 70 to 90 percent of the map unit
Landform: stream terraces
Slope shape: linear
Slope range: 0 to 3 percent
Parent material: loess over alluvium
Hazard of erosion (organic mat removed): by water—slight; by wind—moderate
Runoff: low
Drainage class: moderately well drained
Flooding: none

Depth to high water table (approximate): April-May—0 inches; June-Sept.—more than 60 inches

Ponding: frequent

Available water capacity (approximate): 8.7 inches

Vegetation: white spruce, paper birch, or quaking aspen forest

Representative Profile:

Oi—0 to 3 inches; very dark gray slightly decomposed plant material, high permeability

Bw—3 to 10 inches; brown with light gray mottles very fine sandy loam, moderately high permeability

C—10 to 30 inches; light yellowish brown very fine sandy loam, moderately high permeability

2C—30 to 60 inches; variegated very gravelly coarse sand, high permeability

Note: This soil has 15 to 40 inches of loamy material over sand and gravel.

Nenana and similar soils

Extent: 10 to 20 percent of the map unit

Landform: stream terraces

Slope shape: linear

Slope range: 0 to 3 percent

Parent material: loess over alluvium

Hazard of erosion (organic mat removed): by water—slight; by wind—moderate

Runoff: low

Drainage class: well drained

Flooding: none

Depth to high water table (approximate): April-Sept.—more than 60 inches

Ponding: occasional

Available water capacity (approximate): 5.9 inches

Vegetation: white spruce, quaking aspen, and paper birch forest

Representative Profile:

Oe—0 to 2 inches; strong brown moderately decomposed plant material, moderately high permeability

Bw—2 to 15 inches; dark brown silt loam, moderately high permeability

BC—15 to 21 inches; dark yellowish brown gravelly silt loam, moderately high permeability

2C—21 to 60 inches; brown extremely gravelly sand, high permeability

Note: This soil has 10 to 40 inches of loamy material over sand and gravel.

Minor Components

Tanana and similar soils: 0 to 15 percent of the map unit

717—Water

Extent: 100 percent of the map unit

Landform: lakes

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations; verify properties that cannot be estimated accurately by field observation; and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 5 gives the engineering index properties for each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the USDA. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. Loam, for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. An appropriate modifier is added (for example, gravelly) if the content of particles coarser than sand is 15 percent or more. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches (75 mm) in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches (75 mm) in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse-grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine-grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Rock fragments larger than 10 inches (250 mm) in diameter and 3 to 10 inches (75 to 250 mm) in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Table 6 gives the engineering sieve data for each soil in the survey area.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches (75 mm) in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. The estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. The estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 7 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root

penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown as the K factor (K_w and K_f) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor K_w indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor K_f indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. Soils are grouped according to the amount of stable aggregates more than 0.84 mm in size. Soils containing rock fragments can occur in any group. The groups are as follows:

1. 1 to 9 percent dry soil aggregates. These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
2. 10 to 24 percent dry soil aggregates. These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
3. 25 to 39 percent dry soil aggregates. These soils are erodible. Crops can be grown if intensive measures to control wind erosion are used.
4. 25 to 39 percent dry soil aggregates with greater than 35 percent clay or greater than 5 percent calcium carbonate. These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.
5. 40 to 44 percent dry soil aggregates. These soils are slightly erodible. Crops can be grown if measures to control wind erosion are used.
6. 45 to 49 percent dry soil aggregates. These soils are very slightly erodible. Crops can easily be grown.
7. 50 percent or more dry soil aggregates. These soils are very slightly erodible. Crops can easily be grown.
8. Stony, gravelly, or wet soils and other soils not subject to wind erosion.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

[Table 8](#) shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Water Features

[Table 9](#) gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and frequency are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as *none*, *very rare*, *rare*, *occasional*, *frequent*, and *very frequent*. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods is also considered. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates surface water *depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Moisture status indicates the water content in the soil at a specified depth. The *Status* is expressed as *wet*, *moist*, or *dry*. *Wet* refers to soil in which most of the pore space is filled with water and the water is retained at less than 0.00001 bar suction. *Moist* refers to soil in which some of the pore space is filled with water and the water is retained at between 0.00001 and 15 bar suction. *Dry* refers to soil with little to no water in the pore spaces. Any water is retained at greater than 15 bar suction, which is

generally near or above the wilting point of common agricultural crops. *Frozen* is used to indicate that the temperature of the soil layer is below the freezing point of water.

Soil Features

Table 10 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impedes the movement of water and air through the soil or that restricts roots or otherwise provides an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation.

Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. It can also help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, foresters, botanists, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

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

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

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. Other tables indicate the suitability of the soils for use as source materials. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *slightly limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *source*, *probable source*, and *improbable source* or as *good*, *fair*, and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. The numerical

ratings, as they relate to each specific interpretation, are explained in the sections that follow.

Engineering

This section provides information for planning land uses related to urban development and water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimates given under the heading Soil Properties.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet (1.5 to 2.1 m). Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet (1.5 to 2.1 m) of the surface, soil wetness, depth to water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. [Tables 11](#) and [12](#) show the degree and kind of soil limitations that affect

structures and site improvements, including dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical values in the tables indicate the severity of individual limitations. The values are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). If the soil is *not limited* (value = 0.00), no entry appears for the numerical value.

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet (0.6 m) or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet (2.1 m). The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, permafrost, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet (0.6 m) or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, permafrost, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented

pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet (1.5 or 1.8 m) for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock, permafrost, or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches (101 cm); the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 13 show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical values in the tables indicate the severity of individual limitations. The values are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00). If the soil is *not limited* (value = 0.00), no entry appears for the numerical value.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 4 and 6 feet (1.2 and 1.8 m) is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock, permafrost, or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet (1.2 m) below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock, permafrost, or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches (5 cm) per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches (102 cm), if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet (0.6 m) thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock, permafrost, or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Construction Materials

Table 14 and 15 give information about the soils as potential sources of gravel, sand, topsoil, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

In [table 14](#) the soils are rated as a *probable* or *improbable* source of sand and gravel. A rating of *probable* means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. Only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified

classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

In [table 15](#) the soils are rated *good*, *fair*, or *poor* as potential sources of topsoil, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil or roadfill. The lower the number, the greater the limitation. Only material in suitable quantity is evaluated.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches (102 cm) of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. Rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material affect the ease of excavating, loading, and spreading. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet (1.8 m) high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet (1.5 m). It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties affecting the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. Large stones, depth to a water table, and slope affect the ease of excavation. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential). Susceptibility to frost action is also considered. The soils are rated based on the most limiting layers. Often a soil will have finer textured upper layers that are affected by frost action, while coarser textured lower layers in the same soil may not be affected.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others 1979; U.S. Army Corps of Engineers 1987; National Research Council 1995; Tiner 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register 1994). These soils are either saturated or inundated long enough

during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or non-hydric soil, however, information that is more specific is needed, such as information about the depth and duration of the water table. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in *Soil Taxonomy* (USDA 1999) and *Keys to Soil Taxonomy* (USDA 1998b) and in the *Soil Survey Manual* (USDA 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in *Field Indicators of Hydric Soils in the United States* (USDA 1998a).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches (50 centimeters). This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Those soils that meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators, are listed in [table 16](#). This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council 1995; USDA 1998a).

Some map units consist almost entirely of hydric soils, such as map unit SrA (in which all listed components are hydric). Other map units consist primarily of non-hydric soils, such as map unit SIsE (in which all listed components are non-hydric), or map unit KnB (in which hydric soils are present only as minor components). Hydric soils may occur as minor inclusions even in map units listed without any hydric soils.

Table 16 also lists the local landform on which each soil occurs, the hydric criteria code, and whether or not each soil meets the saturation, flooding, or ponding criteria for hydric soils. Codes for hydric soil criteria are explained in the following key:

Key To Hydric Soil Criteria

1. All Histosols except Folists, or
2. Soils in Aquic suborders, Aquic subgroups, Albolls suborder, Salorthids great group, Pell great groups of Vertisols, Pachic subgroups, or cumulic subgroups that are:
 - a. somewhat poorly drained and have a frequently occurring water table at less than 0.5 foot from the surface for a significant period (usually more than 2 weeks) during the growing season, or
 - b. poorly drained or very poorly drained and have either:
 - (1) a frequently occurring water table at less than 0.5 foot from the surface for a significant period (usually more than 2 weeks) during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches, or for other soils
 - (2) a frequently occurring water table at less than 1.0 foot from the surface for a significant period (usually more than 2 weeks) during the growing season if permeability is equal to or greater than 6.0 inches/hour in all layers within 20 inches, or
 - (3) a frequently occurring water table at less than 1.5 feet from the surface for a significant period (usually more than 2 weeks) during the growing season if permeability is less than 6.0 inches/hour in any layer within 20 inches, or

3. Soils that are frequently ponded for a long duration or very long duration during the growing season, or
4. Soils that are frequently flooded for a long duration or very long duration during the growing season.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA 1998b; USDA 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 17 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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 *cryod* (*cry*, meaning cold, plus *od*, from *spodosol*).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is *haplocryod* (*haplo*, meaning low base saturation, plus *cryod*, the suborder of the spodosols that has a cryic temperature regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *typic* identifies the subgroup that typifies the great group. An example is *Typic Haplocryods*.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is *medial over loamy, amorphic, superactive Andic Haplocryods*.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example from this survey area is the Cohoe series.

Taxonomic Units and Their Morphology

The Official Series Descriptions (OSDs) provide the most current information about the series mapped in this survey area. These descriptions are available on the Web at <http://soils.usda.gov>.

Descriptions for higher level taxonomic units recognized in this survey area are provided below. Characteristics of the soil and the material in which it formed are identified for each taxonomic unit. A pedon, a small three-dimensional area of soil, typical of the taxonomic unit in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual* (USDA 1993). Many of the technical terms used in the descriptions are defined in *Soil Taxonomy* (USDA 1999) and in *Keys to Soil Taxonomy* (USDA 1998b). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the taxonomic unit.

Aquic Dystricrypts

Taxonomic Classification

- Loamy-skeletal, mixed, superactive Aquic Dystricrypts
- Aquic Dystricrypts
- Coarse-loamy, mixed, superactive Aquic Dystricrypts

Setting

Depth class: very deep

Drainage class: moderately well drained or somewhat poorly drained

Landforms: moraines; mountain slopes; terraces

Parent material: loess; loess over till

Elevation: 1,142 to 5,197 feet

Slope: 0 to 40 percent

Annual precipitation: 15 to 39 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 105 days

Representative Pedon Location

Map unit in which located: 664—Turbels-Aquic Dystricrypts-Water association in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 534844, Northing 7077407

Representative Pedon

Oe—0 to 5 inches; dark brown (10YR 3/3) moderately decomposed plant material; many very fine and fine, many medium and few coarse roots; very strongly acid; clear, wavy boundary.

OA—5 to 10 inches; very dark gray (7.5YR 3/1) mucky silt loam; weak, fine, subangular blocky structure; many very fine and fine and few medium roots; very strongly acid; clear, irregular boundary.

2Bg—10 to 19 inches; yellowish red (5YR 4/6) and olive gray (5Y 4/2) very gravelly coarse sandy loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; 40 percent gravel, 2 percent cobbles; strongly acid; clear, wavy boundary.

2C1—19 to 25 inches; reddish yellow (7.5YR 6/6) extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 60 percent gravel, 5 percent cobbles; moderately acid; abrupt, wavy boundary.

2C2—25 to 60 inches; reddish yellow (7.5YR 6/8) very gravelly silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; 35 percent gravel; moderately acid.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: 1 degree F

O horizon:

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma from 1 to 3

Texture—moderately decomposed plant material; slightly decomposed plant material

Organic matter content—75 to 90 percent

Reaction—very strongly acid to moderately acid

OA and A horizons:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 1 to 4

Texture—silt loam; mucky silt loam; silt loam; very fine sandy loam; mucky loamy coarse sand

Clay content—0 to 10 percent

Silt content—30 to 75 percent

Sand content—22 to 65 percent

Organic matter content—2 to 12 percent

Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles

Reaction—very strongly acid to moderately acid

Bw horizon (where present):

Color—hue from 7.5YR to 2.5YR; value from 3 to 5; chroma from 2 to 6

Texture—fine sandy loam; silt loam

Clay content—3 to 10 percent

Silt content—30 to 75 percent

Sand content—22 to 65 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 5 percent gravel

Reaction—strongly acid or moderately acid

BCjig horizon (where present):

Color—hue from 2.5Y to 5Y; value of 3 or 4; chroma of 1 or 2

Texture—fine sandy loam; silt loam

Clay content—3 to 10 percent

Silt content—30 to 75 percent

Sand content—22 to 65 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 5 percent gravel

Reaction—strongly acid or moderately acid

BC horizon (where present):

Color—hue from 10YR to 5Y; value of 3 or 4; chroma from 2 to 4

Texture—silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—30 to 75 percent

Sand content—22 to 65 percent

Organic matter content—1 to 6 percent

Reaction—strongly acid or moderately acid

2Bg or 2Bw horizon:

Color—hue of 10YR or 2.5Y; value from 4 to 6; chroma from 2 to 4

Texture—loamy sand; silt loam; sandy loam; very fine sandy loam; loam; coarse sandy loam

Clay content—0 to 10 percent

Silt content—10 to 70 percent

Sand content—20 to 85 percent

Organic matter content—0 to 3 percent

Rock fragments—5 to 50 percent gravel; 0 to 10 percent cobbles; 0 to 10 percent stones

Reaction—strongly acid or moderately acid

2C horizon:

Color—hue of 10YR or 2.5Y; value of 4 or 5; chroma from 1 to 4

Texture—sand; fine sandy loam; loamy coarse sand; loamy sand; sandy loam; coarse sand; loamy fine sand; very fine sandy loam; coarse sandy loam; sand

Clay content—0 to 10 percent

Silt content—10 to 45 percent

Sand content—45 to 90 percent

Rock fragments—1 to 55 percent gravel; 0 to 15 percent cobbles

Reaction—strongly acid or moderately acid

Aquic Umbrorthels

Taxonomic Classification

- Aquic Umbrorthels

Setting

Depth class: moderately deep

Drainage class: poorly drained

Landforms: moraines

Parent material: loess over till

Elevation: 1,873 to 3,944 feet

Slope: 20 to 35 percent

Annual precipitation: 22 to 35 inches

Annual temperature: 16 to 32 degrees F

Frost-free period: 70 to 95 days

Representative Pedon Location

Map unit in which located: 628—Humic Dystrocrypts-Aquic Umbrorthels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 528531, Northing 7074051

Representative Pedon

Oi—0 to 4 inches; dark reddish brown (5YR 3/2) slightly decomposed plant material; many very fine and fine, common medium and common coarse roots; strongly acid; clear, wavy boundary.

OA—4 to 12 inches; black (5YR 2.5/1) mucky silt loam; weak, fine, subangular blocky structure; common very fine and fine, common medium and few coarse roots; 5 percent gravel, 5 percent cobbles; moderately acid; clear, wavy boundary.

A—12 to 17 inches; very dark brown (7.5YR 2.5/2) gravelly silt loam; weak, fine, subangular blocky structure; friable, slightly sticky and nonplastic; common very

fine and fine and few medium roots; 20 percent gravel, 10 percent cobbles; strongly acid; clear, wavy boundary.

2Bg—17 to 28 inches; dark olive gray (5Y 3/2) and olive gray (5Y 4/2) very gravelly sandy loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; few very fine and fine roots; 30 percent gravel, 15 percent cobbles; strongly acid.

2C—28 to 60 inches; permanently frozen material

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 20 to 28 inches

O horizon:

Color—hue of 5YR or 10YR; value from 2 to 4; chroma of 1 or 2

Texture—highly decomposed plant material; slightly decomposed plant material

Organic matter content—85 to 95 percent

Reaction—extremely acid to strongly acid

OA horizon:

Color—value from 1 to 3; chroma of 2 or 3

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 60 percent

Organic matter content—11 to 20 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

Reaction—strongly acid

A horizon:

Color—chroma of 1 or 2

Clay content—3 to 10 percent

Silt content—50 to 75 percent

Sand content—20 to 45 percent

Organic matter content—3 to 6 percent

Rock fragments—20 to 30 percent total rock fragments; 15 to 25 percent gravel; 5 to 10 percent cobbles

Reaction—strongly acid or moderately acid

2Bg horizon:

Color—hue of 10YR or 2.5Y; value from 2 to 4; chroma of 1 or 2

Texture—coarse sandy loam; loamy sand; sandy loam

Clay content—0 to 10 percent

Silt content—20 to 45 percent

Sand content—55 to 80 percent

Organic matter content—2 to 5 percent

Rock fragments—15 to 30 percent gravel; 10 to 15 percent cobbles

Reaction—strongly acid or moderately acid

Glacic Aquiturbels

Taxonomic Classification

- Glacic Aquiturbels

Setting

Depth class: shallow

Drainage class: poorly drained

Landforms: till plains

Parent material: loess over frozen water

Elevation: 1,946 to 3,107 feet

Slope: 0 to 5 percent

Annual precipitation: 23 to 28 inches

Annual temperature: 16 to 34 degrees F

Frost-free period: 70 to 95 days

Representative Pedon Location

Map unit in which located: 703—Typic Histoturbels-Glacic Aquiturbels-Histels association in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 530663, Northing 7080129

Representative Pedon

Oa—0 to 4 inches; black (7.5YR 2.5/1) highly decomposed plant material; many very fine and fine roots; very strongly acid; clear, wavy boundary.

Bjgg—4 to 14 inches; dark grayish brown (2.5Y 4/2) and black (7.5YR 2.5/1) silt loam; weak, thin, platy structure; friable, nonsticky and nonplastic; few very fine and fine roots; 0.2 in. dark yellowish brown (10YR 4/6) high chroma redox concentrations (approximately 5 percent of horizon); 0.2 in. dark gray (2.5Y 4/1) low chroma redox depletions (approximately 10 percent of horizon); strongly acid; abrupt, wavy boundary.

Bjggf—14 to 16 inches; dark grayish brown (2.5Y 4/2) and black (7.5YR 2.5/1) permanently frozen silt loam; 0.2 in. dark yellowish brown (10YR 4/6) high chroma redox concentrations (approximately 5 percent of horizon); 0.2 in. dark gray (2.5Y 4/1) low chroma redox depletions (approximately 10 percent of horizon); moderately acid; abrupt, wavy boundary.

Wf—16 to 60 inches; permanently frozen water; moderately acid.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 10 to 16 inches

O horizon:

Color—hue of 7.5YR or 10YR; value from 1 to 3; chroma of 1 or 2

Organic matter content—60 to 85 percent

Reaction—very strongly acid to slightly acid

B horizon:

Color—chroma of 1 or 2

Texture—silt loam; very fine sandy loam

Clay content—3 to 10 percent
 Silt content—35 to 75 percent
 Sand content—20 to 65 percent
 Organic matter content—0 to 5 percent
 Reaction—strongly acid to slightly acid

Wf horizon:

Reaction—slightly acid or neutral

Histels

Taxonomic Classification

- Histels

Setting

Depth class: shallow or moderately deep

Drainage class: somewhat poorly drained to very poorly drained

Landforms: moraines; mountains; outwash plains; ridges; terraces; till plains; depressions on moraines

Parent material: organic material; organic material over loess; organic material over loess over colluvium; organic material over loess over outwash; organic material over loess over till

Elevation: 1,073 to 4,856 feet

Slope: 0 to 45 percent

Annual precipitation: 14 to 39 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 105 days

Representative Pedon Location

Map unit in which located: 691—Typic Dystrocryepts-Typic Histoturbels-Folists association in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 528175, Northing 7073755

Representative Pedon

Oe—0 to 4 inches; very dusky red (2.5YR 2.5/2) mucky peat; many very fine and fine, many medium and common coarse roots; strongly acid; clear, wavy boundary.

Oa—4 to 22 inches; black (5YR 2.5/1) peat; many very fine and fine and common medium roots; strongly acid; abrupt, wavy boundary.

OAJjf—22 to 28 inches; reddish black (2.5YR 2.5/1) and black (7.5YR 2.5/1) permanently frozen mucky silt loam; strongly acid; clear wavy boundary.

Bf—28 to 60 inches; permanently frozen material.

Range in Characteristics

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 6; chroma from 1 to 4

Texture—mucky peat; peat; muck

Organic matter content—75 to 90 percent

Reaction—extremely acid to slightly acid

OA, OAfj, or OAf horizons:

Color—hue from 7.5YR to 2.5Y; value of 2 or 3; chroma of 1 or 2

Texture—mucky silt loam; mucky very fine sandy loam; mucky fine sand

Clay content—0 to 10 percent

Silt content—0 to 75 percent

Sand content—18 to 100 percent

Organic matter content—11 to 20 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

A horizon (where present):

Color—hue from 7.5YR to 2.5Y; value of 2 or 3; chroma of 1 or 2

Texture—mucky silt loam; silt loam; very fine sandy loam

Clay content—3 to 7 percent

Silt content—30 to 75 percent

Sand content—22 to 65 percent

Organic matter content—4 to 12 percent

Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles

Reaction—very strongly acid to slightly acid

Bjff, Bf, Bjjgf horizons (where present):

Color—hue of 10YR or 2.5Y; value from 3 to 6; chroma from 1 to 4

Texture—fine sandy loam; silt loam; very fine sandy loam; permanently frozen material

Clay content—3 to 10 percent

Silt content—32 to 75 percent

Sand content—18 to 65 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 5 percent gravel

Reaction—strongly acid to slightly acid

Cf or Cgf horizons:

Color—hue of 10YR or 2.5Y; value from 3 to 6; chroma from 1 to 4

Texture—silt loam; very fine sandy loam; permanently frozen material

Clay content—3 to 10 percent

Silt content—32 to 75 percent

Sand content—22 to 65 percent

Organic matter content—2 to 5 percent

Reaction—strongly acid or moderately acid

2Cf horizon (where present):

Color—hue of 10YR or 2.5Y; value from 3 to 6; chroma from 1 to 4

Clay content—2 to 8 percent

Silt content—30 to 40 percent

Sand content—55 to 68 percent

Rock fragments—15 to 30 percent gravel

Reaction—strongly acid to slightly acid

Humic Dystrocryepts

Taxonomic Classification

- Loamy-skeletal, mixed, superactive Humic Dystrocryepts
- Humic Dystrocryepts

Setting

Depth class: very deep
Drainage class: well drained
Landforms: moraines; mountains
Parent material: loess over colluvium; loess over till
Elevation: 1,873 to 4,688 feet
Slope: 1 to 60 percent
Annual precipitation: 22 to 39 inches
Annual temperature: 5 to 34 degrees F
Frost-free period: 60 to 95 days

Representative Pedon Location

Map unit in which located: 628—Humic Dystrocryepts-Aquic Umbrorthels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM coordinates: Zone 6, Easting 537426, Northing 7068189

Representative Pedon

Oi—0 to 2 inches; dark brown (7.5YR 3/4) and brown (7.5YR 5/3) slightly decomposed plant material; many very fine and fine and many medium roots; extremely acid; clear, wavy boundary.
 A1—2 to 8 inches; black (7.5YR 2.5/1) silt loam; weak, fine, granular structure; friable, nonsticky and nonplastic; many very fine and fine, many medium and many coarse roots; extremely acid; gradual, wavy boundary.
 A2—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam; weak, fine, granular structure; friable, nonsticky and nonplastic; many very fine and fine, many medium and few coarse roots; very strongly acid; abrupt, wavy boundary.
 2C—12 to 60 inches; olive gray (5Y 4/2) gravelly loamy sand; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; few very fine and fine and few medium roots; 20 percent gravel, 5 percent cobbles; ultra acid.

Range in Characteristics

Soil moisture class: udic
Average annual soil temperature: 1 degree F

O horizon:
 Color—hue from 5YR to 10YR; value of 2 or 3; chroma from 1 to 3
 Organic matter content—75 to 90 percent
 Reaction—very strongly acid to moderately acid

OA horizon:
 Color—hue from 5YR to 10YR; value of 2 or 3; chroma of 2 or 3
 Texture—mucky silt loam; mucky very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 80 percent
 Sand content—20 to 60 percent
 Organic matter content—11 to 20 percent
 Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

A horizon:
 Color—hue from 5YR to 10YR; value of 2 or 3; chroma from 1 to 3
 Texture—silt loam; mucky silt loam; very fine sandy loam

Clay content—3 to 10 percent
 Silt content—30 to 75 percent
 Sand content—22 to 65 percent
 Organic matter content—4 to 12 percent
 Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles
 Reaction—very strongly acid to moderately acid

2B horizon:

Color—hue of 10YR or 2.5Y; value of 3 or 4; chroma of 1 or 2
 Texture—loamy coarse sand; sandy loam; loamy sand; coarse sandy loam
 Clay content—0 to 5 percent
 Silt content—15 to 70 percent
 Sand content—30 to 85 percent
 Organic matter content—2 to 5 percent
 Rock fragments—15 to 40 percent gravel; 0 to 15 percent cobbles; 0 to 20 percent stones
 Reaction—very strongly acid to moderately acid

2C horizon:

Color—value from 3 to 5; chroma from 2 to 4
 Texture—loamy sand; sandy loam; coarse sand; coarse sandy loam
 Clay content—0 to 5 percent
 Silt content—5 to 45 percent
 Sand content—55 to 95 percent
 Organic matter content—0 to 1 percent
 Rock fragments—15 to 70 percent gravel; 0 to 30 percent cobbles; 0 to 20 percent stones
 Reaction—strongly acid or moderately acid

Lithic Cryofolists

Taxonomic Classification

- Coarse-silty Lithic Cryofolists

Setting

Depth class: very shallow or shallow
Drainage class: well drained
Landforms: mountains
Parent material: loess over residuum
Elevation: 2,244 to 6,181 feet
Slope: 10 to 55 percent
Annual precipitation: 27 to 37 inches
Annual temperature: 5 to 28 degrees F
Frost-free period: 60 to 80 days

Representative Pedon Location

Map unit in which located: 634—Lithic Cryofolists-Typic Cryorthents-Typic Dystrogelepts complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM coordinates: Zone 6, Easting 498465, Northing 7076567

Representative Pedon

Oi—0 to 8 inches; very dark brown (7.5YR 2.5/3) peat; many very fine and fine and many medium roots; very strongly acid; abrupt, wavy boundary.
 A—8 to 10 inches; strong brown (7.5YR 4/6) silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; common very fine and fine roots; strongly acid; abrupt, irregular boundary.
 R—10 to 60 inches; fractured bedrock.

Range in Characteristics

Soil moisture class: udic
Average annual soil temperature: -1 degree F
Depth to bedrock (lithic): 4 to 14 inches

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 6
 Texture—peat; mucky peat
 Organic matter content—85 to 95 percent
 Rock fragments—0 to 10 percent cobbles; 0 to 10 percent stones
 Reaction—extremely acid to strongly acid

A horizon:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 1 to 6
 Texture—mucky silt loam; silt loam; sandy loam; fine sandy loam
 Clay content—3 to 7 percent
 Silt content—30 to 75 percent
 Sand content—22 to 65 percent
 Organic matter content—4 to 12 percent
 Rock fragments—0 to 10 percent cobbles; 0 to 10 percent stones
 Reaction—extremely acid to moderately acid

Lithic Dystricrypts

Taxonomic Classification

- Lithic Dystricrypts

Setting

Depth class: shallow to very deep
Drainage class: well drained
Landforms: mountains
Parent material: colluvium and/or loess over residuum
Elevation: 2,385 to 5,335 feet
Slope: 5 to 50 percent
Annual precipitation: 25 to 39 inches
Annual temperature: 5 to 28 degrees F
Frost-free period: 60 to 80 days

Representative Pedon Location

Map unit in which located: 699—Typic Haploturbels-Typic Cryaquepts-Typic Dystricrypts complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 513189, Northing 7077091

Representative Pedon

- Oi—0 to 2 inches; very dark grayish brown (10YR 3/2) slightly decomposed plant material; many very fine and fine, many medium and few coarse roots; very strongly acid; clear, wavy boundary.
- A—2 to 3 inches; dark yellowish brown (10YR 4/4) sandy loam; weak, fine, granular structure; friable, nonsticky and nonplastic; many very fine and fine and many medium roots; 2 percent gravel; very strongly acid; clear, wavy boundary.
- Bw—3 to 7 inches; strong brown (7.5YR 4/6) gravelly sandy loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; many very fine and fine and many medium roots; 20 percent gravel, 5 percent cobbles, 1 percent stones; moderately acid; abrupt, irregular boundary.
- C—7 to 17 inches; olive brown (2.5Y 4/4) extremely stony loamy sand; single grain; loose, nonsticky and nonplastic; many very fine and fine and common medium roots; 20 percent gravel, 10 percent cobbles, 50 percent stones; strongly acid; abrupt, wavy boundary.
- R—17 to 60 inches; fractured bedrock;

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: 1 degree F

Depth to bedrock (lithic): 12 to 59 inches

O horizon:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 1 to 4

Texture—slightly decomposed plant material; moderately decomposed plant material

Organic matter content—85 to 95 percent

Rock fragments—0 to 10 percent cobbles; 0 to 10 percent stones

Reaction—extremely acid to strongly acid

A horizon:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 1 to 4

Texture—mucky silt loam; silt loam; sandy loam; fine sandy loam

Clay content—3 to 7 percent

Silt content—30 to 75 percent

Sand content—22 to 65 percent

Organic matter content—4 to 12 percent

Rock fragments—0 to 10 percent cobbles; 0 to 10 percent stones

Reaction—extremely acid to moderately acid

B horizon:

Color—hue from 7.5YR to 2.5Y; value of 3 or 4; chroma from 2 to 6

Texture—sandy loam; silt loam; fine sandy loam

Clay content—0 to 5 percent

Silt content—30 to 70 percent

Sand content—30 to 65 percent

Organic matter content—2 to 5 percent

Rock fragments—0 to 25 percent gravel; 0 to 10 percent cobbles; 0 to 10 percent stones

Reaction—very strongly acid to moderately acid

C horizon:

Texture—fine sandy loam; loamy sand

Clay content—0 to 5 percent

Silt content—15 to 40 percent

Sand content—60 to 85 percent

Organic matter content—0 to 1 percent

Rock fragments—15 to 25 percent gravel; 5 to 15 percent cobbles; 40 to 70 percent stones

Reaction—strongly acid or moderately acid

Orthels**Taxonomic Classification**

- Orthels

Setting*Depth class:* very shallow to moderately deep*Drainage class:* poorly drained*Landforms:* moraines; mountains; outwash plains*Parent material:* loess over till; organic material over colluvium and/or eolian deposits over glaciofluvial deposits; organic material over loess over outwash*Elevation:* 1,749 to 4,114 feet*Slope:* 0 to 40 percent*Annual precipitation:* 21 to 39 inches*Annual temperature:* 5 to 36 degrees F*Frost-free period:* 60 to 105 days**Representative Pedon Location***Map unit in which located:* 694—Typic Dystrogelepts-Aquic Dystrocryepts-Orthels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey*Location in survey area:* UTM coordinates: Zone 6, Easting 519369, Northing 7082650**Representative Pedon**

Oi—0 to 2 inches; dark reddish brown (5YR 3/2) slightly decomposed plant material; many very fine and fine, many medium and few coarse roots; very strongly acid; clear, wavy boundary.

Oa—2 to 7 inches; reddish black (2.5YR 2.5/1) highly decomposed plant material; many very fine and fine, many medium and few coarse roots; very strongly acid; clear, wavy boundary.

A—7 to 9 inches; black (5YR 2.5/1) mucky silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; few very fine and fine and few medium roots; very strongly acid; abrupt, wavy boundary.

2Bg—9 to 12 inches; very dark grayish brown (2.5Y 3/2) sandy loam; weak, thick, platy structure; friable, nonsticky and nonplastic; 5 percent gravel; strongly acid; abrupt, wavy boundary.

2Cf—12 to 60 inches; very dark grayish brown (2.5Y 3/2) permanently frozen gravelly loam; 15 percent gravel; 0.04 in. yellowish red (5YR 4/6) high chroma redox concentrations (approximately 10 percent of horizon); moderately acid.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: -1 degree F

Depth to permafrost: 8 to 31 inches

O horizon:

Color—hue from 5YR to 10YR; value from 2 to 5; chroma from 1 to 4

Texture—highly decomposed plant material; slightly decomposed plant material

Organic matter content—60 to 95 percent

Reaction—extremely acid to strongly acid

AO horizon:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 1 to 4

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 60 percent

Organic matter content—11 to 20 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

Reaction—very strongly acid or strongly acid

A horizon:

Color—hue of 10YR or 2.5Y; value from 2 to 5; chroma from 1 to 4

Texture—mucky silt loam; silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—30 to 75 percent

Sand content—20 to 65 percent

Organic matter content—0 to 18 percent

Reaction—extremely acid to slightly acid

B horizon:

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 4

Texture—very fine sandy loam; silt loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 60 percent

Organic matter content—2 to 5 percent

Reaction—very strongly acid or strongly acid

C horizon:

Color—hue of 2.5Y or 5Y; value from 3 to 5; chroma from 1 to 4

Texture—sandy loam; silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—25 to 75 percent

Sand content—20 to 70 percent

Rock fragments—0 to 20 percent gravel

2B horizon:

Color—value of 4 or 5; chroma from 2 to 4

Texture—very fine sandy loam; loam; silt loam; fine sandy loam; sandy loam

Clay content—0 to 10 percent

Silt content—20 to 75 percent

Sand content—25 to 75 percent

Rock fragments—0 to 20 percent gravel; 0 to 50 percent cobbles; 0 to 15 percent stones
 Reaction—strongly acid to slightly acid

2C horizon:

Color—value from 3 to 5; chroma of 3 or 4
 Texture—coarse sandy loam; loamy sand; sandy loam
 Clay content—3 to 10 percent
 Silt content—15 to 45 percent
 Sand content—50 to 80 percent
 Rock fragments—10 to 20 percent gravel; 0 to 5 percent cobbles
 Reaction—strongly acid to slightly acid

Ruptic Histoturbels

Taxonomic Classification

- Ruptic Histoturbels

Setting

Depth class: very shallow to moderately deep
Drainage class: poorly drained
Landforms: hills; moraines; mountain valleys; outwash plains; till plains
Parent material: loess over till; organic material over loess over glaciofluvial deposits
Elevation: 1,519 to 4,144 feet
Slope: 5 to 40 percent
Annual precipitation: 18 to 39 inches
Annual temperature: 5 to 34 degrees F
Frost-free period: 60 to 95 days

Representative Pedon Location

Map unit in which located: 685—Typic Dystrocryepts-Typic Cryaquepts-Aquic Dystrocryepts complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM coordinates: Zone 6, Easting 526864, Northing 7067948

Representative Pedon

Oi—0 to 5 inches; dark reddish brown (5YR 3/3) peat; many very fine and fine, common medium and few coarse roots; very strongly acid; clear, wavy boundary.
 Oe—5 to 8 inches; reddish brown (5YR 4/3) mucky peat; many very fine, fine, and many medium roots; moderately acid; abrupt, wavy boundary.
 Af—8 to 10 inches; black (5YR 2.5/1) permanently frozen mucky silt loam; moderately acid; clear, wavy boundary.
 Bjff—10 to 11 inches; very dark grayish brown (10YR 3/2) permanently frozen silt loam; 5 percent gravel; moderately acid; abrupt, wavy boundary.
 2Cf—11 to 60 inches; very dark grayish brown (10YR 3/2) permanently frozen gravelly sandy loam; 20 percent gravel; moderately acid.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: -1 degree F

Depth to permafrost: 8 to 24 inches

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4

Texture—mucky peat; peat

Organic matter content—75 to 90 percent

Reaction—extremely acid to slightly acid

OA horizon (where present):

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma from 1 to 3

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—0 to 7 percent

Silt content—35 to 75 percent

Sand content—25 to 65 percent

Organic matter content—12 to 18 percent

Reaction—very strongly acid to slightly acid

Af horizon:

Color—hue of 10YR or 2.5Y; value from 2 to 4; chroma from 2 to 4

Texture—mucky silt loam; silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 65 percent

Organic matter content—10 to 20 percent

Reaction—very strongly acid to neutral

Bjif horizon:

Color—hue from 7.5YR to 10YR; value from 3 to 5; chroma from 1 to 4

Texture—sandy loam; silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 65 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles; 0 to 10 percent stones

Reaction—very strongly acid to slightly acid

BCjif horizon (where present):

Color—hue of 10YR or 2.5Y; value of 3 or 4; chroma from 1 to 4

Texture—silt loam; sandy loam; very fine sandy loam

Clay content—0 to 7 percent

Silt content—35 to 75 percent

Sand content—25 to 65 percent

Organic matter content—0 to 1 percent

Rock fragments—0 to 5 percent gravel; 0 to 10 percent cobbles; 0 to 10 percent stones

Reaction—strongly acid or moderately acid

2Cf or Cf horizon:

Color—hue of 10YR or 2.5Y; value of 3 or 4; chroma from 2 to 4

Texture—coarse sand; sandy loam; loamy coarse sand

Clay content—3 to 7 percent

Silt content—5 to 35 percent

Sand content—60 to 90 percent

Organic matter content—0 to 1 percent

Rock fragments—0 to 25 percent gravel; 0 to 15 percent cobbles
 Reaction—strongly acid to slightly acid

Ruptic-Histic Aquiturbels

Taxonomic Classification

- Ruptic-Histic Aquiturbels

Setting

Depth class: very shallow to moderately deep
Drainage class: poorly drained
Landforms: hills; ridges
Parent material: loess over colluvium and/or slope alluvium
Elevation: 2,356 to 3,740 feet
Slope: 10 to 30 percent
Annual precipitation: 25 to 28 inches
Annual temperature: 16 to 34 degrees F
Frost-free period: 70 to 95 days

Representative Pedon Location

Map unit in which located: 665—Turbels-Typic Dystrogelepts-Ruptic-Histic Aquiturbels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM coordinates: Zone 6, Easting 501293, Northing 7077338

Representative Pedon

Oe—0 to 1 inches; very dark brown (7.5YR 2.5/2) moderately decomposed plant material; many very fine and fine and few medium roots; strongly acid; clear, broken boundary.
 A—1 to 3 inches; very dark brown (10YR 2/2) gravelly fine sandy loam; weak, fine, granular structure; friable, nonsticky and nonplastic; many very fine and fine and few medium roots; 15 percent gravel; strongly acid; clear, broken boundary.
 Bg—3 to 12 inches; dark grayish brown (2.5Y 4/2) very gravelly sandy loam; weak, fine, subangular blocky structure; friable, slightly sticky and nonplastic; few very fine and fine and few medium roots; 35 percent gravel, 5 percent cobbles; 0.12 in. strong brown (7.5YR 4/6) high chroma redox concentrations (approximately 25 percent of horizon); strongly acid; clear, wavy boundary.
 BCg—12 to 21 inches; grayish brown (2.5Y 5/2) very gravelly coarse sandy loam; weak, medium, subangular blocky structure; friable, slightly sticky and nonplastic; 40 percent gravel, 10 percent cobbles; 0.23 in. strong brown (7.5YR 4/6) high chroma redox concentrations (approximately 25 percent of horizon); neutral; gradual, wavy boundary.
 Cg—21 to 30 inches; grayish brown (2.5Y 5/2) very cobbly coarse sandy loam; weak, medium, subangular blocky structure; friable, slightly sticky and nonplastic; 35 percent gravel, 20 percent cobbles; neutral; abrupt, wavy boundary.
 Cgf—30 to 60 inches; dark greenish gray (5GY 4/1) permanently frozen very cobbly sandy loam; 35 percent gravel, 20 percent cobbles; neutral.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 6 to 30 inches

O horizon:

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma from 1 to 4

Texture—peat or mucky peat

Organic matter content—85 to 95 percent

Reaction—extremely acid to strongly acid

OA horizon (where present):

Color—hue from 7.5YR to 2.5Y; value of 2 or 3; chroma of 1 or 2

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 80 percent

Sand content—20 to 60 percent

Organic matter content—11 to 20 percent

A horizon:

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma from 1 to 3

Texture—fine sandy loam; silt loam

Clay content—0 to 10 percent

Silt content—25 to 60 percent

Sand content—35 to 75 percent

Organic matter content—2 to 6 percent

Rock fragments—2 to 20 percent gravel

Reaction—very strongly acid to moderately acid

Bg, Bjgg, or Bgf horizons (where present):

Color—hue of 10YR or 2.5Y; value from 3 to 5; chroma of 1 or 2

Texture—sandy loam; loam; silt loam

Clay content—3 to 10 percent

Silt content—27 to 75 percent

Sand content—25 to 70 percent

Organic matter content—0 to 2 percent

Rock fragments—0 to 40 percent gravel; 0 to 10 percent cobbles

Reaction—strongly acid to slightly acid

Bjff horizon (where present):

Color—hue of 10YR or 2.5Y; value from 2 to 4; chroma from 1 to 4

Texture—silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 60 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 5 percent gravel

Reaction—strongly acid to slightly acid

Cf or Cgf horizon:

Color—hue of 10YR or 2.5Y; value from 3 to 5; chroma of 1 or 2

Texture—sandy loam; coarse sandy loam; silt loam; permanently frozen material

Clay content—0 to 10 percent

Silt content—25 to 60 percent

Sand content—35 to 75 percent

Rock fragments—10 to 40 percent gravel; 0 to 20 percent cobbles

Reaction—moderately acid to neutral

Terric Fibristels

Taxonomic Classification

- Terric Fibristels

Setting

Depth class: shallow or moderately deep

Drainage class: poorly drained

Landforms: moraines; outwash plains; terraces

Parent material: organic material over loess; organic material over loess over outwash

Elevation: 1,168 to 2,717 feet

Slope: 0 to 5 percent

Annual precipitation: 15 to 24 inches

Annual temperature: 16 to 36 degrees F

Frost-free period: 70 to 105 days

Representative Pedon Location

Map unit in which located: 653—Terric Fibristels-Typic Histoturbels, complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 4, Easting 533807, Northing 7109326

Representative Pedon

Oi1—0 to 10 inches; yellowish brown (10YR 5/6) peat; many very fine and fine, common medium and few coarse roots; extremely acid; clear, wavy boundary.

Oi2—10 to 15 inches; very dark brown (10YR 2/2) and dark brown (7.5YR 3/3) peat; many very fine and fine, few medium and common coarse roots; extremely acid; clear, wavy boundary.

Oa—15 to 20 inches; black (10YR 2/1) muck; common very fine and fine, few medium and few coarse roots; very strongly acid; clear, wavy boundary.

OA—20 to 27 inches; very dark grayish brown (2.5Y 3/2) mucky silt loam; weak, thick, platy structure; common very fine and fine and few medium roots; strongly acid; abrupt, wavy boundary.

Bf—27 to 29 inches; dark brown (7.5YR 3/3) permanently frozen silt loam; 0.12 in. dark yellowish brown (10YR 4/6) high chroma redox concentrations (approximately 50 percent of horizon); 0.04 in. dark gray (2.5Y 4/1) low chroma redox depletions (approximately 5 percent of horizon); strongly acid; clear, wavy boundary.

Bjff—29 to 32 inches; very dark grayish brown (2.5Y 3/2) permanently frozen loam; 0.04 in. brown (7.5YR 4/4) high chroma redox concentrations (approximately 10 percent of horizon); strongly acid; clear, wavy boundary.

Cf—32 to 60 inches; permanently frozen material.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 12 to 31 inches

O horizon:

Color—hue from 5YR to 2.5Y; value from 2 to 6; chroma from 1 to 6

Texture—muck; peat; mucky peat

Organic matter content—60 to 95 percent
 Reaction—extremely acid to slightly acid

OA horizon:

Color—hue from 7.5YR to 2.5Y; value of 2 or 3; chroma from 1 to 3
 Texture—mucky silt loam; mucky very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 80 percent
 Sand content—17 to 60 percent
 Organic matter content—11 to 20 percent
 Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles
 Reaction—strongly acid or moderately acid

A horizon:

Color—value of 2 or 3; chroma of 2 or 3
 Texture—mucky silt loam; silt loam; very fine sandy loam
 Clay content—3 to 7 percent
 Silt content—30 to 75 percent
 Sand content—22 to 65 percent
 Organic matter content—4 to 12 percent
 Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles
 Reaction—very strongly acid to slightly acid

Bf horizon:

Color—hue from 7.5YR to 2.5Y; value from 2 to 4; chroma from 1 to 4
 Texture—fine sandy loam; silt loam; very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—32 to 77 percent
 Sand content—20 to 65 percent
 Organic matter content—0 to 5 percent
 Rock fragments—0 to 5 percent gravel
 Reaction—very strongly acid to moderately acid

Terric Hemistels

Taxonomic Classification

- Terric Hemistels

Setting

Depth class: shallow or moderately deep

Drainage class: very poorly drained or poorly drained

Landforms: outwash plains; depressions on moraines

Parent material: organic material over loess over outwash; organic material over till

Elevation: 1,470 to 3,921 feet

Slope: 0 to 5 percent

Annual precipitation: 23 to 35 inches

Annual temperature: 16 to 36 degrees F

Frost-free period: 70 to 105 days

Representative Pedon Location

Map unit in which located: 655—Terric Hemistels-Typic Aquiturbels-Water complex in the Fort Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM zone 6, Easting 565815, Northing 7090275; southeast of Canister Lake

Representative Pedon

Oe—0 to 20 inches; very dark brown (10YR 2/2) mucky peat; many very fine to fine roots; moderately acid; gradual broken boundary.
A/O—20 to 24 inches; very dark grayish brown (10YR 3/2) silt loam and black (7.5YR 2.5/2) mucky peat; massive; friable; nonsticky and slightly plastic; many very fine to fine roots; slightly acid; abrupt smooth boundary.
Bjggf—24 to 60 inches; very dark grayish brown (2.5YR 3/2 and 10YR 3/2) permanently frozen silt loam; massive; extremely firm; slightly sticky and nonplastic; slightly acid.

Range in Characteristics

Soil moisture class: udic
Average annual soil temperature: -1 degree F
Depth to permafrost: 10 to 28 inches

O horizon:

Color—hue from 5YR to 2.5Y; value from 2 to 6; chroma from 1 to 6
Texture—peat; mucky peat; permanently frozen muck
Organic matter content—60 to 95 percent
Reaction—extremely acid to slightly acid

OA or A/O horizons:

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma from 1 to 3
Texture—mucky silt loam; mucky very fine sandy loam; mixed silt loam and mucky peat
Clay content—2 to 10 percent
Silt content—35 to 80 percent
Sand content—20 to 60 percent
Organic matter content—11 to 20 percent
Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles
Reaction—strongly acid to slightly acid

A horizon:

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma of 1 or 2
Texture—mucky silt loam; silt loam; very fine sandy loam
Clay content—3 to 7 percent
Silt content—30 to 75 percent
Sand content—22 to 65 percent
Organic matter content—4 to 12 percent
Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles
Reaction—very strongly acid to slightly acid

B horizon:

Color—hue of 10YR or 2.5Y; value from 2 to 4; chroma from 1 to 4
Texture—silt loam; very fine sandy loam; sandy loam
Clay content—2 to 10 percent
Silt content—32 to 75 percent
Sand content—22 to 65 percent
Organic matter content—1 to 5 percent
Rock fragments—0 to 30 percent gravel; 0 to 5 percent cobbles

Reaction—strongly acid to neutral

C horizon:

Color—hue of 2.5Y or 5Y; value from 3 to 5; chroma of 2 or 3

Texture—silt loam; very fine sandy loam; permanently frozen material

Clay content—3 to 10 percent

Silt content—32 to 75 percent

Sand content—22 to 65 percent

Organic matter content—2 to 5 percent

Reaction—strongly acid or moderately acid

Turbels

Taxonomic Classification

- Turbels

Setting

Depth class: very shallow to moderately deep

Drainage class: somewhat poorly drained or poorly drained

Landforms: hills; moraines; outwash plains

Parent material: loess over colluvium; loess over outwash; loess over till; loess over alluvium and/or colluvium and/or glaciofluvial deposits

Elevation: 1,207 to 4,347 feet

Slope: 0 to 45 percent

Annual precipitation: 12 to 39 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 105 days

Representative Pedon Location

Map unit in which located: 683—Typic Dystrocryepts-Turbels-Water complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 4, Easting 544983, Northing 7064343

Representative Pedon

Oi—0 to 5 inches; very dark brown (7.5YR 2.5/3) slightly decomposed plant material; many very fine and fine, common medium and few coarse roots; moderately acid; abrupt, smooth boundary.

AO—5 to 10 inches; very dark grayish brown (10YR 3/2) silt loam; weak, thin, platy structure; friable, nonsticky and nonplastic; common very fine and fine, few medium and few coarse roots; strongly acid; clear, smooth boundary.

Bjj—10 to 19 inches; black (10YR 2/1) and very dark brown (7.5YR 2.5/3) silt loam; weak, thick, platy structure; friable, nonsticky and nonplastic; few very fine and fine and few medium roots; 0.04 in. light brownish gray (2.5Y 6/2) low chroma redox depletions (approximately 4 percent of horizon); moderately acid; abrupt, wavy boundary.

Cgf1—19 to 24 inches; gray (5Y 5/1) permanently frozen silt loam; moderately acid.

Cgf2—24 to 60 inches; permanently frozen material.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 6 to 30 inches

O horizon:

Color—hue from 5YR to 10YR; value from 2 to 4; chroma from 1 to 3

Texture—peat; slightly decomposed plant material; moderately decomposed plant material; mucky peat

Organic matter content—75 to 95 percent

Reaction—extremely acid to neutral

OA horizon:

Color—hue from 5YR to 10YR; value from 2 to 4; chroma from 1 to 3

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 80 percent

Sand content—20 to 60 percent

Organic matter content—11 to 20 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

Reaction—extremely acid to strongly acid

A horizon:

Color—hue from 7.5YR to 2.5Y; value from 2 to 4; chroma of 2 or 3

Texture—loam; mucky silt loam; silt loam

Clay content—2 to 10 percent

Silt content—45 to 80 percent

Sand content—15 to 45 percent

Organic matter content—3 to 12 percent

Reaction—moderately acid or slightly acid

Bjff or BAjff horizon:

Color—hue of 10YR or 2.5Y; value from 2 to 5; chroma from 1 to 4

Texture—fine sandy loam; silt loam; very fine sandy loam; loam

Clay content—0 to 10 percent

Silt content—35 to 75 percent

Sand content—22 to 65 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 10 percent gravel; 0 to 10 percent cobbles

Reaction—strongly acid to slightly acid

Cf or Cgf horizon:

Color—value of 4 or 5; chroma from 1 to 4

Texture—silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—25 to 65 percent

Rock fragments—0 to 10 percent gravel

Reaction—strongly acid to slightly acid

2Bw/Ajj horizon:

Color—hue of 10YR or 2.5Y; value from 2 to 4; chroma from 1 to 4

Texture—loam; sandy loam; silt loam

Clay content—2 to 10 percent

Silt content—23 to 75 percent
 Sand content—20 to 70 percent
 Organic matter content—1 to 5 percent
 Rock fragments—10 to 40 percent gravel; 0 to 15 percent cobbles; 0 to 15 percent stones
 Reaction—moderately acid or slightly acid

2C or 2Cf horizons:

Color—hue of 10YR or 2.5Y; value from 3 to 5; chroma from 1 to 4
 Texture—sandy loam; loamy sand; loamy coarse sand; permanently frozen material
 Clay content—0 to 5 percent
 Silt content—15 to 40 percent
 Sand content—60 to 85 percent
 Organic matter content—0 to 1 percent
 Rock fragments—5 to 70 percent gravel; 10 to 20 percent cobbles; 0 to 5 percent stones
 Reaction—slightly acid or neutral

Typic Aquiturbels

Taxonomic Classification

- Typic Aquiturbels

Setting

Depth class: very shallow to moderately deep
Drainage class: somewhat poorly drained or poorly drained
Landforms: alluvial fans; flood plains; hills; moraines; outwash plains
Parent material: alluvium over till; loess; loess over outwash; loess over till
Elevation: 1,040 to 3,583 feet
Slope: 0 to 30 percent
Annual precipitation: 13 to 34 inches
Annual temperature: 12 to 36 degrees F
Frost-free period: 65 to 105 days

Representative Pedon Location

Map unit in which located: 627—Histels-Typic Histoturbels-Typic Historthels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM coordinates: Zone 4, Easting 528877, Northing 7102222

Representative Pedon

Oe—0 to 4 inches; very dark grayish brown (10YR 3/2) moderately decomposed plant material; many very fine and fine, common medium and few coarse roots; very strongly acid; clear, smooth boundary.
 O/A—4 to 6 inches; black (10YR 2/1) mucky silt loam; many very fine and fine and few medium roots; moderately acid; clear, wavy boundary.
 Bjff—6 to 8 inches; very dark grayish brown (2.5Y 3/2) and black (10YR 2/1) permanently frozen silt loam; 0.04 in. dark yellowish brown (10YR 4/6) high chroma redox concentrations (approximately 2 percent of horizon); strongly acid; clear, wavy boundary.

Bjgjf—8 to 16 inches; dark gray (2.5Y 4/1) and black (10YR 2/1) permanently frozen silt loam; strongly acid; clear, wavy boundary.
 Cf—16 to 60 inches; permanently frozen material.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 6 to 31 inches

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4

Texture—moderately decomposed plant material; slightly decomposed plant material

Organic matter content—75 to 95 percent

Reaction—extremely acid to slightly acid

OA horizon:

Color—hue of 10YR or 2.5Y; value of 2 or 3; chroma of 1 or 2

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 80 percent

Sand content—17 to 60 percent

Organic matter content—11 to 20 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

Reaction—very strongly acid or strongly acid

A or Aj horizons (where present):

Color—value of 2 or 3; chroma from 1 to 4

Texture—silt loam; very fine sandy loam; sandy loam; fine sandy loam

Clay content—3 to 10 percent

Silt content—22 to 75 percent

Sand content—20 to 75 percent

Organic matter content—2 to 8 percent

Reaction—extremely acid to moderately acid

Bw, Bg, Bjj, or Bf horizons:

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 4

Texture—sandy loam; loamy sand; silt loam; very fine sandy loam; loam; fine sandy loam

Clay content—3 to 10 percent

Silt content—15 to 75 percent

Sand content—20 to 80 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 40 percent gravel; 0 to 20 percent cobbles

Reaction—strongly acid to slightly acid

2Bf or 2BCf horizons (where present):

Color—value of 2 or 3; chroma from 2 to 4

Texture—very fine sandy loam; loamy sand

Clay content—3 to 7 percent

Silt content—10 to 47 percent

Sand content—50 to 85 percent

Rock fragments—0 to 20 percent gravel

Reaction—strongly acid to neutral

2Cf or Cf horizon (where present):

Color—value from 3 to 5; chroma from 1 to 4

Texture—loam; silt loam; very fine sandy loam; permanently frozen material

Clay content—3 to 10 percent

Silt content—30 to 73 percent

Sand content—20 to 65 percent

Organic matter content—0 to 2 percent

Rock fragments—0 to 15 percent gravel; 0 to 5 percent cobbles

Reaction—very strongly acid to moderately acid

Typic Aquorthels

Taxonomic Classification

- Typic Aquorthels

Setting

Depth class: very shallow to moderately deep

Drainage class: poorly drained

Landforms: mountains

Parent material: organic material over colluvium

Elevation: 2,343 to 4,856 feet

Slope: 5 to 25 percent

Annual precipitation: 28 to 35 inches

Annual temperature: 5 to 28 degrees F

Frost-free period: 60 to 80 days

Representative Pedon Location

Map unit in which located: 675—Typic Aquorthels-Typic Histoturbels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 504467, Northing 7077219

Representative Pedon

OA—0 to 3 inches; very dark gray (2.5Y 3/1) mucky silt loam; weak, fine, subangular blocky structure; friable, slightly sticky and nonplastic; many very fine and fine and few medium roots; neutral; clear, irregular boundary.

Bw1—3 to 6 inches; dark grayish brown (2.5Y 4/2) sandy loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; common very fine and fine roots; neutral; clear, wavy boundary.

Bw2—6 to 10 inches; very dark grayish brown (2.5Y 3/2) silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; few very fine and fine roots; neutral; clear, wavy boundary.

Bw3—10 to 14 inches; black (10YR 2/1) mucky silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; neutral; abrupt, wavy boundary.

Bgf—14 to 23 inches; very dark gray (2.5Y 3/1) permanently frozen silt loam; 10 percent cobbles; 0.08 in. dark brown (7.5YR 3/4) high chroma redox concentrations (approximately 10 percent of horizon); neutral.

Cf—23 to 60 inches; permanently frozen material.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 9 to 23 inches

OA horizon:

Color—hue from 7.5YR to 2.5Y; value of 2 or 3; chroma from 1 to 4

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 60 percent

Organic matter content—11 to 20 percent

Reaction—strongly acid to neutral

B horizon:

Color—hue from 10YR to 5Y; value of 3 or 4; chroma from 1 to 3

Texture—silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 75 percent

Sand content—20 to 60 percent

Organic matter content—2 to 5 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

Reaction—moderately acid to neutral

Typic Cryaquepts

Taxonomic Classification

- Typic Cryaquepts

Setting

Depth class: very deep

Drainage class: poorly drained

Landforms: mountains; moraines

Parent material: alluvium over lacustrine deposits; loess over alluvium and/or colluvium; loess over till; loess over water worked till;

Elevation: 1,266 to 5,335 feet

Slope: 0 to 30 percent

Annual precipitation: 12 to 39 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 104 days

Representative Pedon Location

Map unit in which located: 699—Typic Haploturbels-Typic Cryaquepts-Typic Dystrogelepts complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 516115, Northing 7071842

Representative Pedon

Oa—0 to 3 inches; black (10YR 2/1) highly decomposed plant material; common very fine and fine roots; very strongly acid; abrupt, irregular boundary.

Bg—3 to 8 inches; gray (5YR 5/1) mixed very gravelly coarse sandy loam and silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; few very fine and fine and common medium roots; 40 percent gravel; 0.12 in. brown (7.5YR 4/4) high chroma redox concentrations (approximately 35 percent of horizon); 0.12 in. grayish brown (10YR 5/2) low chroma redox depletions (approximately 50 percent of horizon); moderately acid; gradual, wavy boundary.

2C—8 to 60 inches; dark yellowish brown (10YR 4/4) very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 50 percent gravel, 5 percent stones; moderately acid.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: 1 degree F

O horizon:

Color—hue from 5YR to 10YR; value of 2 or 3; chroma from 1 to 4

Texture—highly decomposed plant material; moderately decomposed plant material

Organic matter content—60 to 85 percent

Reaction—very strongly acid to moderately acid

OA horizon:

Color—hue from 7.5YR to 10YR; value of 2 or 3; chroma of 1 or 2

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—3 to 10 percent

Silt content—35 to 80 percent

Sand content—20 to 60 percent

Organic matter content—11 to 20 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

Reaction—strongly acid or moderately acid

A horizon (where present):

Color—hue of 10YR or 2.5Y; value from 2 to 5; chroma from 2 to 4

Texture—fine sandy loam; silt loam

Clay content—2 to 10 percent

Silt content—25 to 75 percent

Sand content—22 to 65 percent

Organic matter content—0 to 7 percent

Rock fragments—0 to 5 percent gravel

Reaction—strongly acid to neutral

Bg horizon:

Color—hue from 10YR to 5GY; value from 2 to 5; chroma from 0 to 4

Texture—fine sandy loam; sandy loam; loamy coarse sand; silt loam; coarse sandy loam

Clay content—0 to 10 percent

Silt content—15 to 75 percent

Sand content—22 to 85 percent

Organic matter content—0 to 5 percent

Rock fragments—0 to 45 percent gravel; 0 to 10 percent cobbles; 0 to 5 percent stones

Reaction—strongly acid to neutral

Cg horizon:

Color—hue from 2.5Y to 5GY; value from 2 to 4; chroma of 1 or 2

Texture—fine sandy loam; loam; silt loam; very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—25 to 75 percent
 Sand content—22 to 65 percent
 Organic matter content—0 to 5 percent
 Rock fragments—0 to 40 percent gravel; 0 to 7 percent cobbles
 Reaction—strongly acid to slightly acid

2Bg horizon (where present):

Color—hue from 2.5Y to 5GY; value from 2 to 5; chroma from 0 to 4
 Texture—loam; loamy sand; fine sandy loam; sandy loam
 Clay content—2 to 7 percent
 Silt content—15 to 45 percent
 Sand content—55 to 85 percent
 Organic matter content—0 to 2 percent
 Rock fragments—0 to 40 percent gravel; 0 to 35 percent cobbles
 Reaction—strongly acid to neutral

2C horizon (where present):

Color—hue from 2.5Y to 5GY; value from 2 to 4; chroma of 1 or 2
 Texture—sandy loam; loamy coarse sand; coarse sand; silt loam
 Clay content—0 to 7 percent
 Silt content—0 to 65 percent
 Sand content—25 to 100 percent
 Organic matter content—0 to 1 percent
 Rock fragments—10 to 55 percent gravel; 0 to 45 percent cobbles; 0 to 5 percent stones
 Reaction—strongly acid to slightly acid

3BC, 4C, or 5Ck horizons (where present):

Color—hue from 10YR to 5Y; value from 2 to 6; chroma from 1 to 4
 Texture—loam; clay loam
 Clay content—8 to 36 percent
 Silt content—33 to 49 percent
 Sand content—25 to 50 percent
 Reaction—moderately acid to moderately alkaline

Typic Cryofluvents

Taxonomic Classification

- Typic Cryofluvents
- Coarse-loamy over sandy or sandy-skeletal Typic Cryofluvents

Setting

Depth class: very deep
Drainage class: well drained
Landforms: flood plains; terraces; drainageways on mountains
Parent material: alluvium; loess over alluvium
Elevation: 899 to 4,856 feet
Slope: 0 to 45 percent
Annual precipitation: 14 to 35 inches
Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 105 days

Representative Pedon Location

Map unit in which located: 677—Typic Cryofluvents in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 4, Easting 529954, Northing 7109929

Representative Pedon

Oi—0 to 2 inches; dark brown (7.5YR 3/3) slightly decomposed plant material; common very fine and fine roots; strongly acid; clear, wavy boundary.

A—2 to 4 inches; olive brown (2.5Y 4/3) loamy fine sand; weak, fine, granular structure; friable, nonsticky and nonplastic; common very fine and fine and few medium roots; 10 percent gravel; moderately acid; clear, wavy boundary.

2C1—4 to 11 inches; dark gray (2.5Y 4/1) gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; 19 percent gravel; slightly acid; clear, wavy boundary.

2C2—11 to 16 inches; olive gray (5Y 5/2) very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 40 percent gravel, 4 percent cobbles; slightly acid; clear, wavy boundary.

2C3—16 to 60 inches; gray (5Y 5/1) extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 70 percent gravel, 2 percent cobbles; neutral.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: 1 degree F

O horizon:

Color—hue of 5YR to 10YR; value from 2 to 4; chroma from 1 to 4

Texture—highly decomposed plant material; moderately decomposed plant material; slightly decomposed plant material

Organic matter content—85 to 95 percent

Reaction—extremely acid to moderately acid

A horizon:

Color—hue from 10YR to 5Y; value from 2 to 4; chroma from 1 to 3

Texture—loamy fine sand; mucky silt loam; silt loam; very fine sandy loam

Clay content—0 to 7 percent

Silt content—15 to 75 percent

Sand content—22 to 85 percent

Organic matter content—2 to 19 percent

Rock fragments—0 to 10 percent gravel

Reaction—very strongly acid to slightly acid

C horizon (where present):

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 4

Texture—sandy loam; very fine sandy loam; silt loam; loamy sand

Clay content—0 to 3 percent

Silt content—0 to 40 percent

Sand content—60 to 100 percent

Organic matter content—0 to 1 percent

Reaction—very strongly acid to moderately

2C horizon:

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 4

Texture—coarse sandy loam; coarse sand; loamy sand; stratified very fine sandy loam to silt loam; sand; very fine sandy loam

Clay content—0 to 7 percent

Silt content—0 to 50 percent

Sand content—50 to 100 percent

Rock fragments—0 to 80 percent gravel; 0 to 30 percent cobbles

Reaction—strongly acid to neutral

Typic Cryorthents**Taxonomic Classification**

- Typic Cryorthents

Setting

Depth class: very deep

Drainage class: well drained

Landforms: flood plains; mountains; terraces

Parent material: colluvium; alluvium

Elevation: 1,220 to 6,181 feet

Slope: 0 to 45 percent

Annual precipitation: 13 to 37 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 104 days

Representative Pedon Location

Map unit in which located: 634—Lithic Cryofolists-Typic Cryorthents-Typic

Dystrogelepts complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 507578, Northing 7073280

Representative Pedon

Oa—0 to 4 inches; black (7.5YR 2.5/1) highly decomposed plant material; common very fine and fine and common medium roots; strongly acid; gradual, wavy boundary.

A/C—4 to 6 inches; very dark gray (7.5YR 3/1) mixed silt loam and coarse sand; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; few very fine and fine roots; moderately acid; clear, wavy boundary.

2C—6 to 60 inches; brown (7.5YR 4/2) extremely gravelly loamy coarse sand; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; 75 percent gravel, 10 percent cobbles; moderately acid.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: 1 degree F

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 6; chroma from 1 to 6

Texture—highly decomposed plant material; moderately decomposed plant material;
slightly decomposed plant material
Organic matter content—85 to 95 percent
Reaction—very strongly acid to slightly acid

A/C horizon:

Color—hue of 10YR or 2.5Y; value from 2 to 4; chroma from 1 to 4
Texture—coarse sandy loam; loamy coarse sand; mixed silt loam and coarse sand
Clay content—2 to 7 percent
Silt content—14 to 75 percent
Sand content—22 to 84 percent
Organic matter content—1 to 3 percent
Reaction—very strongly acid to slightly acid

C horizon:

Color—hue from 10YR to 5Y; value of 3 or 4; chroma from 1 to 4
Texture—stratified fine sand to silt loam
Clay content—1 to 5 percent
Silt content—0 to 25 percent
Sand content—75 to 100 percent
Organic matter content—1 to 3 percent
Reaction—moderately acid to neutral

2C horizon:

Color—hue from 10YR to 5Y; value of 3 or 4; chroma from 1 to 4
Texture—loamy sand; sand; coarse sand; loamy coarse sand
Clay content—0 to 5 percent
Silt content—0 to 25 percent
Sand content—75 to 100 percent
Organic matter content—0 to 3 percent
Rock fragments—35 to 80 percent gravel; 5 to 15 percent cobbles; 0 to 5 percent
stones
Reaction—very strongly acid to neutral

Typic Dystricryepts

Taxonomic Classification

- Typic Dystricryepts

Setting

Depth class: shallow to very deep

Drainage class: well drained

Landforms: flood plains; hills; moraines; outwash plains; alluvial fans

Parent material: loess over alluvium; loess over colluvium and/or residuum; loess over
outwash; loess over till

Elevation: 899 to 3,944 feet

Slope: 0 to 70 percent

Annual precipitation: 14 to 36 inches

Annual temperature: 16 to 36 degrees F

Frost-free period: 70 to 105 days

Representative Pedon Location

Map unit in which located: 672—Typic Aquiturbels-Typic Dystrocryepts complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM coordinates: Zone 4, Easting 514613, Northing 7104015

Representative Pedon

- Oe—0 to 3 inches; very dark brown (7.5YR 2.5/3) moderately decomposed plant material; many very fine and fine and many medium roots; very strongly acid; clear, smooth boundary.
- A—3 to 6 inches; very dark brown (10YR 2/2) silt loam; weak, fine, granular structure; friable, nonsticky and nonplastic; common very fine and fine roots; strongly acid; clear, wavy boundary.
- Bw1—6 to 8 inches; dark yellowish brown (10YR 4/4) silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; few very fine and fine roots; strongly acid; clear, wavy boundary.
- Bw2—8 to 13 inches; dark yellowish brown (10YR 4/6) and dark grayish brown (2.5Y 4/2) silt loam; moderate, thick, platy structure; friable, nonsticky and nonplastic; few very fine and fine roots; slightly acid; clear, wavy boundary.
- BC—13 to 18 inches; light olive brown (2.5Y 5/4) sandy loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; 2 percent gravel; strongly acid; abrupt, wavy boundary.
- 2C1—18 to 21 inches; light olive brown (2.5Y 5/6) gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 30 percent gravel; slightly acid; abrupt, wavy boundary.
- 2C2—21 to 60 inches; dark yellowish brown (10YR 4/6) very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 35 percent gravel, 5 percent cobbles; slightly acid.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: 1 degree F

Depth to bedrock (lithic): 16 to 60 inches (where present)

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4

Texture—moderately decomposed plant material; slightly decomposed plant material

Organic matter content—85 to 95 percent

Reaction—extremely acid to slightly acid

OA horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4

Clay content—3 to 10 percent

Silt content—55 to 75 percent

Sand content—20 to 42 percent

Organic matter content—11 to 18 percent

Reaction—very strongly acid to moderately acid

A horizon:

Color—hue from 7.5YR to 2.5Y; value from 2 to 4; chroma from 1 to 4

Texture—mucky silt loam; silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—30 to 75 percent

Sand content—22 to 70 percent
 Organic matter content—3 to 12 percent
 Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles
 Reaction—very strongly acid to slightly acid

Bw or BC horizons:

Color—hue from 7.5YR to 2.5Y; value from 3 to 5; chroma from 1 to 5
 Texture—sandy loam; coarse sand; silt loam; very fine sandy loam
 Clay content—2 to 10 percent
 Silt content—8 to 75 percent
 Sand content—20 to 90 percent
 Organic matter content—0 to 5 percent
 Rock fragments—0 to 50 percent gravel; 0 to 25 percent cobbles
 Reaction—strongly acid to slightly acid

C horizon:

Color—hue from 10YR to 5Y; value from 3 to 6; chroma from 1 to 6
 Texture—sandy loam; coarse sandy loam; very fine sandy loam
 Clay content—2 to 5 percent
 Silt content—25 to 45 percent
 Sand content—50 to 70 percent
 Rock fragments—15 to 60 percent gravel; 0 to 10 percent cobbles
 Reaction—strongly acid to neutral

2Bw horizon (where present):

Color—hue from 7.5YR to 2.5Y; value from 3 to 6; chroma from 1 to 6
 Texture—fine sandy loam; very fine sandy loam; loamy sand; sandy loam
 Clay content—0 to 5 percent
 Silt content—15 to 45 percent
 Sand content—55 to 85 percent
 Organic matter content—0 to 1 percent
 Rock fragments—15 to 45 percent gravel; 0 to 20 percent cobbles; 0 to 40 percent
 stones
 Reaction—strongly acid to neutral

2BC horizon (where present):

Color—hue of 10YR or 2.5Y; value from 3 to 5; chroma from 2 to 6
 Texture—loamy sand; sandy loam; coarse sand; loamy coarse sand; fine sand; fine
 sandy loam
 Clay content—0 to 5 percent
 Silt content—5 to 45 percent
 Sand content—50 to 95 percent
 Organic matter content—0 to 1 percent
 Rock fragments—0 to 40 percent gravel; 0 to 20 percent cobbles; 0 to 30 percent
 stones
 Reaction—strongly acid to neutral

2C horizon (where present):

Color—hue from 7.5YR to 2.5Y; value from 2 to 5; chroma from 2 to 6
 Texture—loamy sand; sandy loam; coarse sand; fine sand; loamy coarse sand;
 extremely stony loamy sand; very fine sandy loam
 Clay content—0 to 10 percent
 Silt content—0 to 45 percent
 Sand content—50 to 100 percent
 Organic matter content—0 to 1 percent

Rock fragments—10 to 70 percent gravel; 0 to 30 percent cobbles; 0 to 20 percent stones
 Reaction—strongly acid to neutral

Typic Dystrogelepts

Taxonomic Classification

- Loamy-skeletal Typic Dystrogelepts

Setting

Depth class: very deep

Drainage class: well drained

Landforms: hills; moraines; mountains

Parent material: loess over colluvium and/or slope alluvium; loess over glaciofluvial deposits

Elevation: 2,178 to 6,181 feet

Slope: 0 to 60 percent

Annual precipitation: 25 to 39 inches

Annual temperature: 5 to 28 degrees F

Frost-free period: 60 to 80 days

Representative Pedon Location

Map unit in which located: 711—Typic Histoturbels-Typic Dystrogelepts complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 6, Easting 516680, Northing 7072137

Representative Pedon

Oi—0 to 4 inches; dark reddish brown (5YR 3/3) slightly decomposed plant material; many very fine and fine, many medium and many coarse roots; extremely acid; clear, wavy boundary.

AO—4 to 6 inches; reddish black (10R 2.5/1) mucky silt loam; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; many very fine and fine, many medium and many coarse roots; extremely acid; clear, wavy boundary.

Bw—6 to 9 inches; dark gray (2.5Y 4/1) silt loam; moderate, medium, subangular blocky structure; friable, nonsticky and nonplastic; many very fine and fine, common medium and common coarse roots; very strongly acid; clear, wavy boundary.

2C1—9 to 18 inches; dark brown (7.5YR 3/4) loamy very fine sand; weak, fine, subangular blocky structure; friable, nonsticky and nonplastic; many very fine and fine, common medium and few coarse roots; 10 percent cobbles; strongly acid; abrupt, wavy boundary.

2C2—18 to 60 inches; dark reddish brown (5YR 3/4) extremely cobbly coarse sand; single grain; loose, nonsticky and nonplastic; 25 percent gravel, 30 percent cobbles, 20 percent stones; moderately acid.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: -1 degree F

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4
 Texture—moderately decomposed plant material; slightly decomposed plant material
 Organic matter content—85 to 95 percent
 Rock fragments—0 to 10 percent gravel; 0 to 10 percent cobbles
 Reaction—extremely acid to strongly acid

AO horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4
 Texture—sandy loam; mucky silt loam; mucky very fine sandy loam
 Clay content—0 to 10 percent
 Silt content—35 to 80 percent
 Sand content—20 to 60 percent
 Organic matter content—5 to 20 percent
 Rock fragments—0 to 15 percent gravel; 0 to 10 percent cobbles

B horizon:

Color—hue from 7.5YR to 2.5Y; value from 3 to 5; chroma from 1 to 5
 Texture—silt loam; very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 75 percent
 Sand content—25 to 65 percent
 Organic matter content—2 to 5 percent
 Reaction—very strongly acid to moderately acid

2C1 horizon:

Color—hue from 7.5YR to 2.5Y; value from 2 to 5; chroma from 2 to 6
 Texture—loamy very fine sand; sandy loam; silt loam
 Clay content—1 to 5 percent
 Silt content—15 to 70 percent
 Sand content—30 to 85 percent
 Organic matter content—0 to 1 percent
 Rock fragments—0 to 40 percent gravel; 0 to 20 percent cobbles; 0 to 15 percent stones
 Reaction—strongly acid or moderately acid

2C2 horizon:

Color—hue from 7.5YR to 2.5Y; value from 2 to 5; chroma from 2 to 6
 Texture—loamy sand; coarse sandy loam; coarse sand
 Clay content—0 to 5 percent
 Silt content—5 to 40 percent
 Sand content—60 to 95 percent
 Organic matter content—0 to 1 percent
 Rock fragments—total rock fragments 35 to 85 percent; 15 to 70 percent gravel; 0 to 30 percent cobbles; 0 to 20 percent stones
 Reaction—strongly acid or moderately acid

Typic Eutrocryepts

Taxonomic Classification

- Typic Eutrocryepts

Setting

Depth class: very deep
Drainage class: well drained
Landforms: hills
Parent material: loess over colluvium
Elevation: 2,034 to 3,891 feet
Slope: 7 to 70 percent
Annual precipitation: 26 to 32 inches
Annual temperature: 12 to 28 degrees F
Frost-free period: 65 to 95 days

Representative Pedon Location

Map unit in which located: 636—McKinley stony mucky silt loam, 40 to 70 percent slopes in the Fort Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM zone 6, Easting 555450, Northing 7068166; between the Richardson Highway and Delta River; transect 00DS0044A stop 3

Representative Pedon

AO—0 to 5 inches; very dark brown (10YR 2/2) mucky silt loam; many very fine to medium roots; slightly acid; clear smooth boundary.
 AB—5 to 9 inches; very dark grayish brown (10YR 3/2) silt loam; weak thin platy structure; friable; slightly sticky and slightly plastic; few very fine and fine roots; moderately acid; clear wavy boundary.
 2BC—9 to 35 inches; dark brown (10YR 3/3) and olive brown (2.5Y 4/4) extremely stony sandy loam; weak fine subangular blocky structure; very friable; slightly sticky and slightly plastic; 30 percent gravel, 20 percent cobbles, and 30 percent stones; slightly acid; gradual smooth boundary.
 2C1—35 to 43 inches; olive brown (2.5YR 4/3) and olive gray (5Y 4/2) extremely gravelly sandy loam; common large prominent dark yellowish brown (10YR 4/4) mottles; massive; friable; slightly sticky and slightly plastic; 50 percent gravel and 10 percent cobbles; slightly acid; gradual smooth boundary.
 2C2—43 to 60 inches; olive brown (2.5YR 4/4) extremely gravelly sandy loam; massive; friable; slightly sticky and slightly plastic; 50 percent gravel and 10 percent cobbles; slightly acid.

Range in Characteristics

Soil moisture class: udic
Average annual soil temperature: 1 degree F

AO horizon:

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma of 2 or 3
 Texture—mucky silt loam; moderately decomposed plant material
 Clay content—2 to 7 percent
 Silt content—52 to 70 percent
 Sand content—20 to 45 percent
 Organic matter content—12 to 60 percent
 Reaction—moderately acid or slightly acid

AB horizon:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 2 to 4
 Texture—silt loam; very fine sandy loam

Clay content—2 to 7 percent
 Silt content—50 to 75 percent
 Sand content—25 to 45 percent
 Rock fragments—total rock fragments 0 to 25 percent; 0 to 25 percent gravel; 0 to 20 percent cobbles
 Organic matter content—1 to 6 percent
 Reaction—moderately acid or slightly acid

2BC horizon:

Color—hue of 10YR or 2.5Y; value of 3 or 4; chroma of 3 or 4
 Clay content—2 to 7 percent
 Silt content—28 to 40 percent
 Sand content—55 to 70 percent
 Organic matter content—0 to 4 percent
 Rock fragments—25 to 50 percent gravel; 10 to 35 percent cobbles; 10 to 50 percent stones
 Reaction—slightly acid or neutral

2C horizon:

Color—value from 4 to 6; chroma of 3 or 4
 Clay content—2 to 7 percent
 Silt content—28 to 40 percent
 Sand content—55 to 70 percent
 Rock fragments—35 to 70 percent gravel; 5 to 20 percent cobbles
 Reaction—slightly acid or neutral

Typic Haplocryands

Taxonomic Classification

- Typic Haplocryands

Setting

Depth class: very deep
Drainage class: well drained
Landforms: mountains
Parent material: volcanic ash over colluvium
Elevation: 1,594 to 2,740 feet
Slope: 20 to 30 percent
Annual precipitation: 17 to 27 inches
Annual temperature: 16 to 34 degrees F
Frost-free period: 70 to 95 days

Representative Pedon Location

Map unit in which located: 687—Typic Dystrocryepts-Typic Haplocryands-Typic Histoturbels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey
Location in survey area: UTM coordinates: Zone 4, Easting 509970, Northing 7103029

Representative Pedon

- O_i—0 to 3 inches; very dark brown (10YR 2/2) slightly decomposed plant material; many very fine and fine, common medium and common coarse roots; moderately acid; abrupt, smooth boundary.
- Bw₁—3 to 6 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; weak, fine, granular structure; very friable, slightly sticky and slightly plastic; many very fine and fine, common medium and few coarse roots; strongly acid; clear, smooth boundary.
- Bw₂—6 to 15 inches; brown (10YR 4/3) very fine sandy loam; moderate, coarse, subangular blocky structure; very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; 1 percent gravel; slightly acid; gradual, smooth boundary.
- C₁—15 to 23 inches; light olive brown (2.5Y 5/3) very fine sandy loam; weak, fine, subangular blocky structure; very friable, slightly sticky and slightly plastic; few very fine and fine roots; 5 percent gravel; moderately acid; abrupt, smooth boundary.
- 2C₂—23 to 60 inches; brown (10YR 4/3) very gravelly loamy coarse sand; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; 40 percent gravel; slightly acid.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: 1 degree F

O horizon:

Color—hue of 7.5YR or 10YR; value of 2 or 3; chroma of 2 or 3

Texture—slightly decomposed plant material

Organic matter content—85 to 95 percent

Reaction—strongly acid or moderately acid

B or C horizons:

Color—hue of 10YR or 2.5Y; chroma from 1 to 4

Texture—silt loam; very fine sandy loam

Clay content—0 to 7 percent

Silt content—30 to 75 percent

Sand content—25 to 70 percent

Organic matter content—2 to 5 percent

Rock fragments—0 to 15 percent gravel; 0 to 5 percent cobbles

Reaction—strongly acid to slightly acid

2C horizon:

Color—hue of 10YR or 2.5Y; value of 4 or 5; chroma of 3 or 4

Texture—loamy sand; coarse sand; loamy coarse sand

Clay content—2 to 5 percent

Silt content—0 to 20 percent

Sand content—75 to 95 percent

Organic matter content—0 to 1 percent

Rock fragments—15 to 70 percent gravel; 0 to 10 percent cobbles

Reaction—strongly acid to slightly acid

Typic Haplorthels

Taxonomic Classification

- Coarse-loamy Typic Haplorthels
- Typic Haplorthels

Setting

Depth class: very shallow to moderately deep

Drainage class: poorly drained or somewhat poorly drained

Landforms: moraines; mountains; outwash plains

Parent material: colluvium and/or slope alluvium; loess over outwash; loess over till

Elevation: 1,224 to 4,856 feet

Slope: 0 to 35 percent

Annual precipitation: 16 to 35 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 105 days

Representative Pedon Location

Map unit in which located: 684—Typic Dystrocryepts-Typic Aquiturbels-Typic Haplorthels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 4, Easting 545388, Northing 7099212

Representative Pedon

Oi—0 to 5 inches; very dark brown (10YR 2/2) slightly decomposed plant material; many very fine and fine and common medium roots; extremely acid; clear, smooth boundary.

OA—5 to 10 inches; very dark gray (10YR 3/1) mucky silt loam; weak, fine, granular structure; many very fine and fine roots; extremely acid; clear, smooth boundary.

A—10 to 13 inches; very dark grayish brown (10YR 3/2) very fine sandy loam; weak, fine, granular structure; friable, slightly sticky and nonplastic; common very fine and fine roots; very strongly acid; clear, smooth boundary.

Bw1—13 to 15 inches; dark grayish brown (10YR 4/2) very fine sandy loam; weak, fine, subangular blocky structure; friable, slightly sticky and nonplastic; few very fine and fine roots; strongly acid; clear, smooth boundary.

Bw2—15 to 28 inches; dark gray (10YR 4/1) very fine sandy loam; weak, fine, subangular blocky structure; friable, slightly sticky and nonplastic; few very fine and fine roots; strongly acid; clear, smooth boundary.

Cf1—28 to 32 inches; gray (5Y 5/1) permanently frozen sandy loam; 0.04 in. dark yellowish brown (10YR 4/6) high chroma redox concentrations (approximately 10 percent of horizon); strongly acid.

Cf2—32 to 60 inches; permanently frozen material.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: -1 degree F

Depth to permafrost: 8 to 31 inches

O horizon:

Color—hue from 5YR to 2.5Y; value of 2 or 3; chroma from 1 to 4

Texture—slightly decomposed plant material; moderately decomposed plant material
 Organic matter content—75 to 95 percent
 Reaction—extremely acid to slightly acid

OA horizon:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 1 to 3
 Texture—mucky silt loam; mucky very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 80 percent
 Sand content—20 to 60 percent
 Organic matter content—11 to 20 percent
 Reaction—extremely acid to strongly acid

A horizon:

Color—hue of 7.5YR or 10YR; value from 2 to 4; chroma from 1 to 3
 Texture—mucky silt loam; silt loam; very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—27 to 75 percent
 Sand content—20 to 70 percent
 Organic matter content—0 to 18 percent
 Rock fragments—0 to 5 percent gravel; 0 to 2 percent cobbles
 Reaction—extremely acid to moderately acid

Bw, or 2Bf, Bf horizons:

Color—hue of 10YR or 2.5Y; value from 3 to 5; chroma from 1 to 4
 Texture—loamy sand; sandy loam; silt loam; very fine sandy loam; fine sandy loam
 Clay content—0 to 10 percent
 Silt content—15 to 75 percent
 Sand content—25 to 85 percent
 Organic matter content—2 to 5 percent
 Rock fragments—0 to 20 percent gravel; 0 to 5 percent cobbles
 Reaction—strongly acid or moderately acid

C or Cf horizons:

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 3
 Texture—loamy sand; fine sand; sandy loam; very fine sandy loam; silt loam
 Clay content—0 to 10 percent
 Silt content—5 to 70 percent
 Sand content—20 to 95 percent
 Organic matter content—0 to 1 percent
 Rock fragments—0 to 25 percent gravel; 0 to 50 percent cobbles; 0 to 15 percent stones
 Reaction—strongly acid or moderately acid

2Cf horizon:

Color—value of 4 or 5; chroma from 2 to 4
 Texture—fine sand; coarse sandy loam; loamy sand; sand; sandy loam
 Clay content—0 to 10 percent
 Silt content—5 to 45 percent
 Sand content—50 to 95 percent
 Rock fragments—0 to 20 percent gravel; 0 to 5 percent cobbles
 Reaction—strongly acid to slightly acid

Typic Haploturbels

Taxonomic Classification

- Typic Haploturbels

Setting

Depth class: shallow or moderately deep

Drainage class: moderately well drained to poorly drained

Landforms: hills; moraines; mountains; outwash plains; till plains

Parent material: loess; loess over colluvium and/or glaciofluvial deposits; loess over glaciofluvial deposits; loess over outwash; loess over till

Elevation: 988 to 5,335 feet

Slope: 0 to 35 percent

Annual precipitation: 14 to 39 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 105 days

Representative Pedon Location

Map unit in which located: 700—Typic Haploturbels-Typic Histoturbels-Histels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 4, Easting 547027, Northing 7094074

Representative Pedon

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed plant material; many very fine and fine and common medium roots; very strongly acid; clear, smooth boundary.

OA—2 to 9 inches; very dark grayish brown (10YR 3/2) mucky silt loam; weak, thin, platy structure; many very fine and fine and few medium roots; very strongly acid; clear, smooth boundary.

A—9 to 14 inches; very dark brown (10YR 2/2) silt loam; weak, thin, platy structure; friable, nonsticky and nonplastic; common very fine and fine roots; strongly acid; abrupt, smooth boundary.

Bjj—14 to 20 inches; very dark brown (10YR 2/2) and dark grayish brown (10YR 4/2) silt loam; weak, thick, platy structure; friable, nonsticky and nonplastic; few very fine and fine roots; strongly acid; abrupt, smooth boundary.

Bjff—20 to 24 inches; dark grayish brown (10YR 4/2) and black (10YR 2/1) permanently frozen silt loam; strongly acid.

Cf—24 to 60 inches; permanently frozen material.

Range in Characteristics

Soil moisture class: udic

Average annual soil temperature: -1 degree F

Depth to permafrost: 10 to 30 inches

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 5; chroma from 1 to 6

Texture—moderately decomposed plant material; slightly decomposed plant material

Organic matter content—75 to 95 percent

Reaction—extremely acid to slightly acid

OA horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4
 Texture—mucky silt loam; mucky very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 80 percent
 Sand content—17 to 60 percent
 Organic matter content—11 to 20 percent
 Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles
 Reaction—extremely acid to moderately acid

A horizon:

Color—hue of 10YR or 2.5Y; value of 2 or 3; chroma from 1 to 4
 Texture—mucky silt loam; silt loam; very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—30 to 75 percent
 Sand content—20 to 65 percent
 Organic matter content—2 to 12 percent
 Rock fragments—0 to 20 percent gravel; 0 to 10 percent cobbles
 Reaction—extremely acid to slightly acid

Bw or Bjf horizons:

Color—hue from 7.5YR to 2.5Y; value from 3 to 5; chroma from 1 to 4
 Texture—fine sandy loam; sandy loam; loamy sand; silt loam; very fine sandy loam
 Clay content—0 to 10 percent
 Silt content—15 to 75 percent
 Sand content—20 to 85 percent
 Organic matter content—0 to 1 percent
 Rock fragments—0 to 50 percent gravel; 0 to 10 percent cobbles
 Reaction—very strongly acid to slightly acid

Cg or Cgf horizons:

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 3
 Texture—silt loam; sandy loam; very fine sandy loam; permanently frozen material
 Clay content—3 to 10 percent
 Silt content—25 to 75 percent
 Sand content—22 to 68 percent
 Rock fragments—0 to 5 percent gravel
 Reaction—very strongly acid to slightly acid

Typic Historthels**Taxonomic Classification**

- Typic Historthels

Setting

Depth class: very shallow or shallow

Drainage class: poorly drained

Landforms: alluvial fans; outwash plains; ridges; stream terraces

Parent material: alluvium and/or loess; loess over alluvium; organic material over loess over outwash

Elevation: 1,145 to 3,740 feet

Slope: 0 to 15 percent

Annual precipitation: 14 to 27 inches
Annual temperature: 16 to 36 degrees F
Frost-free period: 70 to 105 days

Representative Pedon Location

Map unit in which located: 710—Typic Histoturbels-Typic Dystrocryepts-Typic Historthels complex in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 4, Easting 541903, Northing 7093636

Representative Pedon

- Oe—0 to 9 inches; very dark brown (10YR 2/2) moderately decomposed plant material; many very fine and fine, few medium and few coarse roots; very strongly acid; clear, smooth boundary.
- OA—9 to 11 inches; black (10YR 2/1) mucky silt loam; weak, fine, granular structure; common very fine and fine, few medium and few coarse roots; very strongly acid; abrupt, wavy boundary.
- Bg—11 to 15 inches; dark grayish brown (2.5Y 4/2) sandy loam; weak, fine, subangular blocky structure; friable, slightly sticky and slightly plastic; common very fine and fine roots; 5 percent gravel; 0.04 in. light olive brown (2.5Y 5/6) high chroma redox concentrations approximately 10 percent of horizon); strongly acid; abrupt, wavy boundary.
- Bgf—15 to 20 inches; gray (2.5Y 5/1) permanently frozen sandy loam; 3 percent gravel; 0.04 in. light olive brown (2.5Y 5/6) high chroma redox concentrations (approximately 8 percent of horizon); strongly acid.
- 2Cf—20 to 60 inches; permanently frozen material.

Range in Characteristics

Soil moisture class: udic
Average annual soil temperature: -1 degree F
Depth to permafrost: 8 to 17 inches

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 5; chroma from 1 to 6
 Texture—peat; mucky peat
 Organic matter content—85 to 95 percent
 Reaction—extremely acid to strongly acid

OA horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4
 Texture—mucky silt loam; mucky very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 80 percent
 Sand content—20 to 60 percent
 Organic matter content—11 to 20 percent
 Reaction—extremely acid to strongly acid

A horizon:

Color—hue of 10YR or 2.5Y; value of 2 or 3; chroma from 1 to 4
 Texture—silt loam; very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 75 percent

Sand content—25 to 65 percent
 Organic matter content—3 to 6 percent
 Rock fragments—0 to 5 percent gravel
 Reaction—strongly acid to slightly acid

B horizon:

Color—hue from 7.5YR to 2.5Y; value from 3 to 5; chroma from 1 to 4
 Texture—silt loam; sandy loam; very fine sandy loam
 Clay content—0 to 7 percent
 Silt content—30 to 75 percent
 Sand content—25 to 70 percent
 Organic matter content—2 to 5 percent
 Rock fragments—0 to 10 percent gravel
 Reaction—strongly acid to slightly acid

C horizon:

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 3
 Texture—silt loam; very fine sandy loam
 Clay content—3 to 10 percent
 Silt content—35 to 75 percent
 Sand content—20 to 65 percent
 Organic matter content—0 to 5 percent
 Reaction—strongly acid to slightly acid

2Cf horizon:

Color—hue from 10YR to 5Y; value from 3 to 5; chroma from 1 to 3
 Texture—loamy sand; coarse sand; sandy loam
 Clay content—2 to 5 percent
 Silt content—8 to 45 percent
 Sand content—50 to 90 percent
 Organic matter content—0 to 1 percent
 Rock fragments—0 to 40 percent gravel; 0 to 10 percent cobbles
 Reaction—strongly acid or moderately acid

Typic Histoturbels

Taxonomic Classification

- Typic Histoturbels

Setting

Depth class: very shallow to very deep

Drainage class: very poorly drained to somewhat poorly drained

Landforms: alluvial fans; flood plains; hills; moraines; mountains; outwash plains; terraces; till plains

Parent material: loess; loess over alluvium; loess over colluvium; loess over glaciofluvial deposits; organic material over loess; organic material over loess over outwash; organic material over loess over till

Elevation: 899 to 6,181 feet

Slope: 0 to 55 percent

Annual precipitation: 14 to 39 inches

Annual temperature: 5 to 36 degrees F

Frost-free period: 60 to 105 days

Representative Pedon Location

Map unit in which located: 690—Typic Dystricryepts-Typic Histoturbels complex, ridges in the Ft. Greely and Donnelly Training Area, Alaska soil survey

Location in survey area: UTM coordinates: Zone 4, Easting 517062, Northing 7099281

Representative Pedon

Oi—0 to 10 inches; dark brown (10YR 3/3) peat; many very fine and fine and common medium roots; very strongly acid; clear, wavy boundary.

Oe—10 to 11 inches; black (10YR 2/1) mucky peat; many very fine and fine and common medium roots; strongly acid; clear, smooth boundary.

OA—11 to 14 inches; black (10YR 2/1) mucky silt loam; massive; common very fine and fine roots; strongly acid; clear, wavy boundary.

Bjff—14 to 20 inches; dark brown (10YR 3/3) and black (10YR 2/1) permanently frozen silt loam; 2 percent gravel; strongly acid; clear, wavy boundary.

2Cjff—20 to 60 inches; olive brown (2.5Y 4/3) and very dark brown (10YR 2/2) permanently frozen silt loam; 5 percent gravel; strongly acid.

Range in Characteristics

Soil moisture class: aquic

Average annual soil temperature: -1 degree F

Depth to permafrost: 8 to 24 inches

O horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 5; chroma from 1 to 6

Texture—peat; mucky peat

Organic matter content—75 to 95 percent

Reaction—extremely acid to moderately acid

OA horizon:

Color—hue from 2.5YR to 10YR; value from 2 to 4; chroma from 1 to 4

Texture—mucky silt loam; mucky very fine sandy loam

Clay content—0 to 10 percent

Silt content—35 to 80 percent

Sand content—20 to 60 percent

Organic matter content—11 to 20 percent

Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles

Reaction—extremely acid to moderately acid

A horizon:

Color—hue from 5YR to 2.5Y; value from 2 to 4; chroma from 1 to 4

Texture—mucky silt loam; silt loam; very fine sandy loam

Clay content—3 to 7 percent

Silt content—30 to 75 percent

Sand content—22 to 65 percent

Organic matter content—4 to 12 percent

Reaction—very strongly acid to slightly acid

Bw, Bf, or Bg horizons:

Color—hue from 7.5YR to 5Y; value from 2 to 5; chroma from 1 to 4

Texture—loam; silt loam; very fine sandy loam

Clay content—3 to 10 percent

Silt content—30 to 75 percent
Sand content—20 to 75 percent
Organic matter content—0 to 5 percent
Rock fragments—0 to 10 percent gravel; 0 to 5 percent cobbles
Reaction—extremely acid to slightly acid

Cf horizon:

Color—hue of 10YR or 2.5Y; value from 3 to 5; chroma from 1 to 3
Texture—silt loam; very fine sandy loam; permanently frozen material
Clay content—3 to 10 percent
Silt content—35 to 75 percent
Sand content—25 to 65 percent
Reaction—strongly acid to slightly acid

2BCjif horizon:

Texture—loam; silt loam; very fine sandy loam
Clay content—3 to 10 percent
Silt content—35 to 75 percent
Sand content—20 to 60 percent
Rock fragments—0 to 20 percent gravel; 0 to 5 percent cobbles
Reaction—very strongly acid to moderately acid

2Cgf or 2Cf horizons:

Color—hue of 2.5Y or 5Y; value from 3 to 5; chroma from 1 to 5
Texture—loam; loamy coarse sand; coarse sandy loam; silt loam; sandy loam; very fine sandy loam
Clay content—2 to 10 percent
Silt content—18 to 73 percent
Sand content—25 to 80 percent
Organic matter content—0 to 1 percent
Rock fragments—0 to 40 percent gravel; 0 to 5 percent cobbles
Reaction—strongly acid or moderately acid

Formation of the Soils

Soil is the unconsolidated mineral and organic material on the surface of the earth that serves as a natural medium for the growth of land plants (Soil Survey Staff, 1999). Soil formation is controlled by genetic and environmental factors of climate (including temperature and moisture effects), topography, parent material, and living organisms—all acting over a period of time. The influence of any one of these factors varies from place to place, and the interaction of all of them determines the kind of soil that forms (Jenny, 1941).

Parent Material

The soils in the Fort Greely and Donnelly Training Area were formed from a variety of parent materials. Glaciation and mountain building were major contributors to the soils in the area. Loess covers most of the survey area. The loess cap ranges from a few centimeters to several meters thick. Strong winds blowing off the Alaska Range and through the Tanana Valley pick up silt from the Delta River flood plain and along other major drainages in the area, and redeposit the sediment throughout the landscape. This is a continual process that one can witness on a windy day in the survey area.

Several major glaciations passed through the survey area, as evidenced by the morainal hills and outwash plains found there. The topography of the moraine deposits is characterized by rolling hills and kettle lakes. The soils have a thin to moderately thick loess cap underlain by gravelly silts and sands. The outwash plains are relatively level, fan shaped areas. Soils in these areas have a moderately thick to very thick loess mantle underlain by sands and gravels.

Alluvial materials, similar in appearance to outwash, occur in both major and minor drainages. All of the major drainages in the survey area are glacially fed and carry a heavy sediment load of silt, sand, and gravel. This sediment is deposited in braided stream channels and flood plains.

Mountain building processes have a great influence on a few of the soils in the area. Dinosaur Ridge is underlain by the Nenana Gravels. The Nenana Gravels formed when the Alaska Range started to rise. Massive amounts of sand, silt, and gravel were washed onto the plain to the north of the Alaska Range. These sediments, in time, formed sandstone, siltstone, and conglomerate (Dr. Rainer Newberry, 2004. Interview by Trudy Pink, Natural Resources Conservation Service). This area was then uplifted along a local fault. The area consists of steep rolling hills often with sharp drops. Soils in these areas are characterized by a loess cap overlying sand, silt, or gravel.

Molybdenum Ridge marks the beginning of the foothills of the Alaska Range. The foothills are very steep and have bedrock cores. The soils here are often formed in loess underlain by colluvium. In many areas there is very little loess mantle, there is simply moss growing on rocks. In other areas the loess mantle is quite thick and the soils show weak development.

Climate

The Fort Greely and Donnelly Training Area is located in the interior of Alaska. The climate is characterized by long cold winters and short warm summers. This cold environment limits soil development. Many of the soils in the survey area are classified as Inceptisols (weakly developed soils). The cold climate also leads to the formation of permafrost. Extensive areas of permafrost and Gelisols (previously frozen soils) occur in the area. A few Entisols (very weakly developed soils) exist on high mountain slopes where a combination of steep slopes, low temperature, and low infiltration limit the soil development.

Time

Time is an important factor in soil development. It is required for the transformation of parent material into a soil that has genetically related layers or horizons. The length of time required to form these horizons depends upon the other four soil forming factors. The cool climate and low precipitation of interior Alaska slows the soil forming process and, thus, it takes much longer for the soil to develop.

Vegetation

The vegetation in the Fort Greely and Donnelly Training Area varies from alpine tundra to black spruce and tussock lowlands. Tree line in the survey area is around 1,500 feet. Above this line, in well drained areas, species such as Mountain avens (*Dryas ocopetala*), Alpine Bearberry (*Arctostaphylos alpine*) and a variety of mosses and lichens are found. In alpine areas that are not as well drained mosses, tussocks, and sedges can be found. Below tree line, aspen, birch, and white spruce can be found where the soils are relatively well drained and lack permafrost or the permafrost depth is well below the rooting depths of these trees. In poorly drained areas that have permafrost at or near the surface black spruce and tussocks are common. These soils generally have a thick organic mat that insulates the soil from the summer heat, maintaining a shallow depth to permafrost and perched water table.

The survey area has an extensive fire history. The fires are often started accidentally during military maneuvers. Fires change the vegetation/soil relationship and can cause major changes in the properties of permafrost soils. Forest fires disturb the organic mat and canopy cover, thus raising soil temperature. The permafrost will subsequently thaw and lower in the soil, changing the characteristics of the soil and allowing for successional vegetation to establish.

Topography and Relief

Relief affects the formation of soils by its effect on temperature, drainage, runoff, and erosion. Soils on south-facing slopes are warmer than soils on north-facing slopes. Consequently, soils on north-facing slopes tend to have permafrost and soils on south-facing slopes tend not to have permafrost. Areas that have steep slopes here are well drained with weakly developed soils. Areas that are level tend to be better developed. Stony soils on steep slopes, warm rapidly in the summer and are usually free of permafrost. Silty soils in level areas hold moisture and develop thick organic mats, which lower the soil temperature and favor permafrost formation.

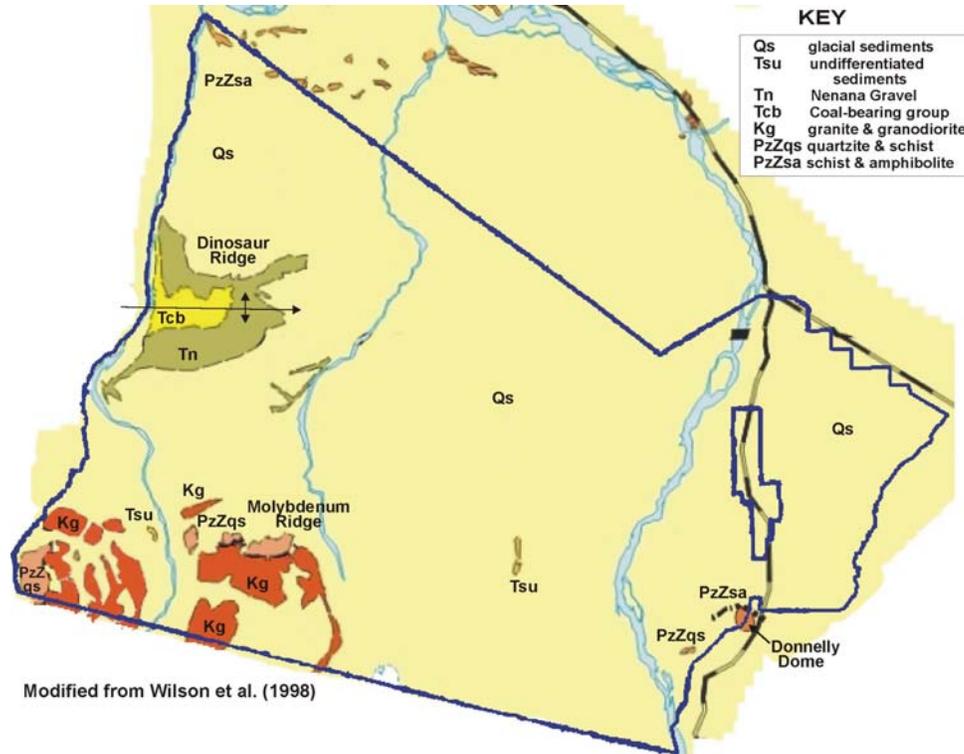


Figure 3. Generalized distribution of geologic units within the survey area.

Geology

By Dr. Rainer Newberry, Professor, University of Alaska Fairbanks

The northeastern Alaska Range has a complex and active geologic history. However, because most of the area encompassed by the survey area is mantled by glacial and related sediments, the pre-Tertiary geologic history is largely unknown. The generalized distribution of geologic units within the survey area boundary is shown in Figure 3. The pre-Quaternary units are largely confined to the western and southern boundary of the area.

The oldest rocks in the Fort Greely and Donnelly Training Area consist of two contrasting packages of metamorphic rocks, PzZsa and PzZqs (Figure 3). Both packages of metamorphic rocks are intruded by large bodies of granitic rocks, seen especially in the southwest part of the survey area (Figure 3). These bodies vary in composition and are part of a large belt of mid-Cretaceous intrusions that stretch from west of Fairbanks through the central Yukon and through British Columbia to the Sierra Nevada mountains of California. Granitic bodies of this age and similar compositions contain and are spatially associated with gold deposits in interior Alaska, central Yukon, and central British Columbia. No such gold deposits are known to exist in the survey area. Because of the nearly inaccessible location and limited geologic study of the area the actual gold resources are unknown.

The belt of granitic rocks was caused by subduction of an oceanic plate under interior Alaska during the mid-Cretaceous period. This plate was attached to the rocks of southern Alaska; subduction of the plate was responsible for the northward migration of what is now southern Alaska. Those rocks (e.g., the Nikolai greenstone,

seen at Paxon) were formed in near-equatorial latitudes, as determined by paleomagnetic and fossil studies. Collision of the northward-moving rocks with those of interior Alaska caused subduction to stop and created a large mountain range in the area of the current Alaska Range. The collisional zone was cut by a series of right-lateral, high-angle faults, most notably the Denali fault, by the early Tertiary period. The cumulative displacement on these faults is approximately 450 kilometers, spread out over a width of approximately 20 kilometers. The fault located just north of Donnelly Dome (Figure 3) may be one of these faults.

By mid-Tertiary time, what is now the Alaska Range was a topographic lowland characterized by swamps and broad meandering rivers. A belt of low-grade coal deposits and associated fine-grained, river-deposited sediments can be found from east of the survey area to west of Denali Park and testify to the extensive character of this landscape. Sediments of this type (Tcb, Figure 3) make up the west-central edge of the survey area. Major coal deposits in this sedimentary rock are mined at Healy; similar deposits almost certainly underlie much of the survey area. These coal-bearing rocks have ages of approximately 30 to 10 Ma and are overlain by poorly-consolidated, coarse conglomerates of the Nenana Gravel.

The change from low-topography, fine-grained, organic-rich rocks of unit Tcb to the high-energy, coarse conglomerates of the Nenana Gravel was most plausibly caused by the formation of the Alaska Range. As the area south of the survey area began rising, it shed coarse detritus to the north, that is, the Nenana Gravel. The Nenana Gravel—and thus the Alaska Range—began forming in late Miocene time. The rise of the Alaska Range was caused by a shift in the nature of the Denali fault and its associated faults, from strictly strike-slip movement to partial dip-slip movement. A range-front fault with significant vertical movement (up to the south) is most likely present from just north of Donnelly Dome west to just north of Molybdenum Ridge (Figure 3); however, this fault is mostly covered by Quaternary sediments.

Continued compression of southern Alaska resulted in continued uplift of the Alaska Range and also the formation of broad, east-west-oriented folds. One such fold is present at Dinosaur Ridge (Figure 3); many others of similar size and orientation are seen in Tertiary and older rocks to the west, outside of the survey area.

During the last two million years the earth has experienced about 30 periods of cooling, with accompanying glacial advances, interspersed with periods of warming and glacial retreat. Each cycle (glacial plus interglacial) lasted about 50,000-70,000 years; we are currently in a warm period that started about 15,000 years ago. The Alaska Range experienced these same climatic fluctuations, recorded by distinctive glacial and glacier-related sediments and erosional landforms.

Sediments deposited immediately in front of a glacier (either advancing or retreating) are poorly sorted, sub-angular, little-weathered, aggregates of glacier-broken rock called "till." The grain size of till ranges from boulder to sub-millimeter; the poorly sorted character of the material is a result of the absence of significant water or wind transport. The land covered by till is characteristically hummocky and poorly drained, with innumerable shallow pits (kettles) and small knobs (kames) interspersed by sinuous ridges (moraines). Much of the survey area is mantled by till.

Large streams and rivers form in front of melting glaciers. Glacially derived sediment is transported by this melt water to produce a so-called "outwash plain." The (water-deposited) sediments are medium- to fine-grained and well sorted, and produce a gently dipping, nearly flat, well-drained surface.

High winds are characteristically produced by the extreme thermal gradient between glaciers and solar-heated rocks and air. Such "katabatic" winds commonly have velocities greater than 100 mph. Winds of this sort pick up fine-grained glacial sediments and deposit them far away from glaciers. This wind-deposited material (loess) is characteristically fine-grained (silt-sized) particles consisting entirely of sub-angular rock and mineral fragments with little or no clay. Loess mantles hills in interior Alaska far from current or past glaciers. The survey area is currently experiencing loess deposition.

The multiple periods of glacial advance and retreat over the last two million years, and the distinctively different types of sediment deposited in proximity to glaciers, has resulted in the survey area being largely underlain by an extremely complex succession of sediments that alternates between till, outwash sediments, and loess. This complex succession varies rapidly in both vertical and horizontal directions and causes irregular subsurface zones of high, moderate, and low porosity and permeability. The groundwater aquifers and permafrost distribution are, in consequence, extremely complex.

Soils in the area vary considerably, depending on the underlying earth materials. Much of the area is underlain by either fresh (recently glaciated) rock or by little-weathered, glacially derived, rock fragments. Such soils contain abundant rock fragments and little clay.

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Glossary

- Ablation till.** Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.
- Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.
- Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.
- Alluvial cone.** The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.
- Alluvial fan.** The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.
- Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.
- Alpha,alpha-dipyridyl.** A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.
- Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.
- Aspect.** The direction in which a slope faces.
- Association, soil.** A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.
- Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:
- | | |
|----------------|--------------|
| Very low | 0 to 3 |
| Low | 3 to 6 |
| Moderate..... | 6 to 9 |
| High..... | 9 to 12 |
| Very high..... | more than 12 |
- Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.
- Basal area.** The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.
- Basal till.** Compact glacial till deposited beneath the ice.

- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Boulders.** Rock fragments larger than 2 feet (61 cm) in diameter.
- Breaks.** The steep and very steep broken land at the border of an upland summit that is dissected by ravines.
- Breast height.** An average height of 4.5 feet (1.4 m) above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- 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.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- 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.
- Channery soil material.** Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 cm) along the longest axis. A single piece is called a channer.
- Cirque.** A semicircular, concave, bowl-like area that has steep faces primarily resulting from glacial ice and snow abrasion.
- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
- Coarse textured soil.** Sand or loamy sand. Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 cm) in diameter.
- Cobbly soil material.** Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 cm) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
- COLE (coefficient of linear extensibility).** See Linear extensibility.
- Colluvium.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Congeliturbate. Soil material disturbed by frost action.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the *Soil Survey Manual*.

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 (25 cm) and 40 or 80 inches (102 or 203 cm).

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches (152 cm) deep over bedrock; deep soils, 40 to 60 inches (102 to 152 cm); moderately deep, 20 to 40 inches (51 to 102 cm); shallow, 10 to 20 inches (25 to 51 cm); and very shallow, less than 10 inches (25 cm).

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water

regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained*, *somewhat excessively drained*, *well drained*, *moderately well drained*, *somewhat poorly drained*, *poorly drained*, and *very poorly drained*. These classes are defined in the *Soil Survey Manual*.

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till.

The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters (7 ft) are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters (7 feet) of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

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

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of fiber that is well preserved and readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the

field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

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

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 cm) 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 (305 m) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

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

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

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

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

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

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

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

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

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

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

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 mm to 7.6 cm) in diameter. An individual piece is a pebble.

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

- Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.
- Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.
- High-residue crops.** Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.
- Hill.** A natural elevation of the land surface, rising as much as 1,000 feet (305 m) above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.
- Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:
- O horizon.*—An organic layer of fresh and decaying plant residue.
- A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
- E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
- B horizon.*—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.
- C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.
- Cr horizon.*—Soft, consolidated bedrock beneath the soil.
- R layer.*—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.
- Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.
- Hydrologic soil groups.** Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly

permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

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

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

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

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

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the

whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size.

Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 in); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 in); and *coarse*, more than 15 millimeters (about 0.6 in).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet (305 m) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If

formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square m to 10 square m), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permafrost. Layers of soil, or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed continuously for two or more years.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the *Soil Survey Manual*. In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow.....	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow.....	0.2 to 0.6 inch
Moderate.....	0.6 inch to 2.0 inches
Moderately rapid.....	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

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.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid.....	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid.....	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid.....	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline.....	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

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.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

- Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.
- Saline soil.** A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.
- Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.
- Sandstone.** Sedimentary rock containing dominantly sand-sized particles.
- Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.
- Saprolite.** Unconsolidated residual material underlying the soil and grading to hard bedrock below.
- Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- Sedimentary rock.** Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.
- Sequum.** A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)
- Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
- Shale.** Sedimentary rock formed by the hardening of a clay deposit.
- Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
- Shoulder.** The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.
- Side slope.** A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.
- Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- Siltstone.** Sedimentary rock made up of dominantly silt-sized particles.
- Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- 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.
- Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level.....	0 to 2 percent
Gently sloping.....	2 to 4 percent
Moderately sloping	4 to 8 percent

Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 45 percent
Very steep.....	More than 45 percent

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand.....	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand.....	0.25 to 0.10
Very fine sand.....	0.10 to 0.05
Silt.....	0.05 to 0.002
Clay.....	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 cm) in diameter if rounded or 15 to 24 inches (38 to 60 cm) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 cm). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1. Temperature and Precipitation at Big Delta, Alaska

TAPS Station: BIG DELTA FAA/AMOS AP, AK0770
 Start yr. - 1971 End yr. - 2000
 Temperature: 30 years available out of 30 requested in this analysis
 Precipitation: 28 years available out of 30 requested in this analysis

Month	Temperature (Degrees F.)					Precipitation (Inches)					
	average daily maximum	average daily minimum	average	2 yrs in 10 will have		average number of grow degree days*	average	2 years in 10 will have		average number of days with .1 or more	average total snow fall
				maximum temp. >than	minimum temp. <than			less than	more than		
January	4.1	-9.9	-2.9	43	-54	0	0.31	0.09	0.51	0	4.9
February	11.2	-5.6	2.8	45	-46	0	0.40	0.11	0.56	1	6.0
March	25.1	3.0	14.0	49	-34	1	0.21	0.03	0.33	0	3.5
April	42.3	21.6	32.0	64	-14	30	0.21	0.03	0.36	0	2.2
May	57.9	37.5	47.7	77	21	240	0.82	0.26	1.29	2	0.7
June	67.1	47.5	57.3	83	33	505	2.49	1.50	3.38	7	0.0
July	70.3	51.1	60.7	85	36	623	2.76	1.59	3.86	7	0.0
August	64.8	46.1	55.5	83	28	468	2.16	1.30	2.99	6	0.0
September	53.3	35.7	44.5	70	10	181	0.97	0.51	1.43	3	1.7
October	31.1	17.6	24.3	56	-19	14	0.75	0.30	1.17	2	11.6
November	13.5	-0.7	6.4	42	-36	0	0.58	0.13	0.91	2	11.0
December	7.2	-7.2	0.0	45	-44	0	0.33	0.08	0.56	1	6.2
Yearly :	---	---	---	---	---	---	---	---	---	---	---
Average	37.3	19.7	28.5	--	--	--	---	---	---	---	---
Extreme	90	-59	--	87	-54	--	---	---	---	---	---
Total	---	---	---	---	---	2062	12.01	8.78	14.31	31	47.9

Average number of days per year with at least 1 inch of snow on the ground: 183

*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 2. Probability of frost at Big Delta, Alaska

FROST Station: BIG DELTA FAA/AMOS AP, AK0770
 Start yr. - 1961 End yr. - 1990
 Requested years of data: 30 Available years of data: 30
 Spring:
 Years of missing data 24 deg = 1, 28 deg = 1, 32 deg = 1
 Years with no occurrence 24 deg = 0, 28 deg = 0, 32 deg = 0
 Data years used 24 deg = 29, 28 deg = 29, 32 deg = 29
 Fall:
 Years of missing data 24 deg = 0, 28 deg = 0, 32 deg = 0
 Years with no occurrence 24 deg = 0, 28 deg = 0, 32 deg = 0
 Data years used 24 deg = 30, 28 deg = 30, 32 deg = 30

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 1	June 10
2 year in 10 later than—	May 18	May 25	June 3
5 year in 10 later than—	May 2	May 11	May 21
First freezing temperature in fall:			
1 yr in 10 earlier than—	September 13	August 26	August 20
2 yr in 10 earlier than—	September 17	September 1	August 24
5 yr in 10 earlier than—	September 25	September 12	September 1

Table 3. Growing Season at Big Delta, Alaska

GROWTH Station: BIG DELTA FAA/AMOS AP, AK0770
 Start yr. - 1971 End yr. - 2000
 Requested years of data: 30 Available years of data: 30
 Years with missing data 24 deg = 5, 28 deg = 4, 32 deg = 2
 Years with no occurrence 24 deg = 0, 28 deg = 0, 32 deg = 0
 Data years used 24 deg = 25, 28 deg = 26, 32 deg = 28

Probability	Daily Minimum Temperature		
	# days > 24°F	# days > 28°F	# days > 32°F
9 years in 10	117	96	77
8 years in 10	127	106	85
5 years in 10	147	125	99
2 years in 10	166	144	114
1 year in 10	176	155	121

Table 4. Acreage and Proportionate Extent of the Soils

(An * under "Percent" indicates less than 0.1 percent)

Map symbol	Map unit name	Acres	Percent
601	Aquic Dystrocryepts-Typic Dystrocryepts-Histels complex	1,719	0.3
602	Audrey-Butchlake-Typic Aquiturbels complex, 0 to 15 percent slopes	2,035	0.3
603	Audrey-Typic Aquiturbels complex, 0 to 7 percent slopes	986	0.1
604	Babel mucky silt loam, 0 to 15 percent slopes	1,714	0.3
605	Babel-Butchlake complex, 10 to 20 percent slopes	387	*
606	Babel-Butchlake complex, 20 to 30 percent slopes	114	*
607	Butchlake silt loam, 20 to 30 percent slopes	88	*
608	Butchlake silt loam, 30 to 45 percent slopes	99	*
609	Butchlake-Nomercy Lake complex, 0 to 80 percent slopes	1,282	0.2
610	Butchlake-Southpaw complex, 0 to 12 percent slopes	13,718	2.1
611	Butchlake-Southpaw complex, 0 to 35 percent slopes	1,417	0.2
612	Butchlake-Southpaw complex, subalpine, 0 to 35 percent slopes	2,152	0.3
613	Chena very fine sandy loam	1,591	0.2
614	Chena very fine sandy loam, flooded	3,326	0.5
615	Chetlake silt loam, 0 to 15 percent slopes	4,438	0.7
616	Donnelly silt loam, 0 to 3 percent slopes	3,634	0.5
617	Donnelly silt loam, 45 to 70 percent slopes	967	0.1
618	Donnelly-Nenana complex, 0 to 3 percent slopes	2,692	0.4
619	Gerstle-Moosehead complex, 0 to 3 percent slopes	4,249	0.6
620	Gerstle-Tanana complex, 0 to 3 percent slopes	1,646	0.2
621	Gravel pits	32	*
622	Histels, impact area	38,701	5.8
623	Histels-Orthels-Turbels association	28,177	4.2
624	Histels-Orthels-Typic Dystrogelepts complex	1,001	0.2
625	Histels-Turbels association	4,647	0.7
626	Histels-Typic Cryaquepts-Typic Dystrocryepts complex	3,881	0.6
627	Histels-Typic Histoturbels-Typic Historthels complex	25,773	3.9
628	Humic Dystrocryepts-Aquic Umbrorthels complex	5,842	0.9
629	Jarvis very fine sandy loam	5,337	0.8
630	Jarvis very fine sandy loam, flooded	771	0.1
631	Jarvis-Chena complex	219	*
632	Jarvis-Chena complex, flooded	323	*
633	Jarvis-Salchaket complex	2,818	0.4
634	Lithic Cryofolists-Typic Cryorthents-Typic Dystrogelepts complex	19,981	3.0
635	McKinley stony mucky silt loam, 12 to 20 percent slopes	61	*
636	McKinley stony mucky silt loam, 40 to 70 percent slopes	1,331	0.2
637	Moosehead fine sandy loam, 0 to 3 percent slopes	541	*
638	Mosquito peat	533	*
639	Nenana silt loam, 0 to 3 percent slopes	11,230	1.7
640	Nenana-Donnelly complex, hilly	1,461	0.2
641	Nenana-Donnelly complex, rolling	2,198	0.3
642	Nenana-Urban Land complex, 0 to 3 percent slopes	940	0.1
643	Ninchuun silt loam, 0 to 15 percent slopes	2,064	0.3
644	Ninchuun-Audrey complex, 0 to 7 percent slopes	1,882	0.3
645	Ninchuun-Audrey complex, 0 to 35 percent slopes	1,096	0.2
646	Nomercy Lake-Butchlake-Water complex, 0 to 35 percent slopes	6,479	1.0
647	Riverwash	31,996	4.8
648	Salchaket very fine sandy loam	6,586	1.0
649	Salchaket very fine sandy loam, flooded	68	*
650	Tanacross peat	226	*
651	Tanana silt loam	4,679	0.7
652	Terric Fibristels-Ruptic-Histic Aquiturbels-Typic Aquiturbels complex	5,391	0.8
653	Terric Fibristels-Typic Histoturbels, complex	3,609	0.5
654	Terric Hemistels, 0 to 3 percent slopes	61	*
655	Terric Hemistels-Typic Aquiturbels-Water complex, 0 to 3 percent slopes	1,873	0.3
656	Tetlin silt loam, 12 to 20 percent slopes	574	*
657	Tetlin silt loam, hilly	415	*
658	Tetlin silt loam, steep	1,396	0.2
659	Trident Glacier	1,423	0.2
660	Turbels-Tetlin complex, 7 to 12 percent slopes	7	*

Table 4. Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Map unit name	Acres	Percent
661	Turbels silt loam, 12 to 20 percent slopes	603	*
662	Turbels silt loam, 20 to 30 percent slopes	248	*
663	Turbels silt loam, 30 to 45 percent slopes	340	*
664	Turbels-Aquic Dystricrypts-Water association	6,881	1.0
665	Turbels-Typic Dystricrypts-Ruptic-Histic Aquiturbels complex	2,396	0.4
666	Typic Aquiturbels, 0 to 7 percent slopes	5,288	0.8
667	Typic Aquiturbels, 0 to 20 percent slopes	169	*
668	Typic Aquiturbels, subalpine, 0 to 7 percent slopes	2,966	0.4
669	Typic Aquiturbels-Butchlake-Southpaw complex, 0 to 35 percent slopes	1,422	0.2
670	Typic Aquiturbels-Terric Hemistels complex, 0 to 3 percent slopes	265	*
671	Typic Aquiturbels-Terric Hemistels complex, 0 to 20 percent slopes	787	0.1
672	Typic Aquiturbels-Typic Dystricrypts complex	3,784	0.6
673	Typic Aquiturbels-Typic Dystricrypts-Typic Haploturbels complex	7,689	1.2
674	Typic Aquiturbels-Typic Histoturbels association	7,766	1.2
675	Typic Aquorthels-Typic Histoturbels complex	5,207	0.8
676	Typic Cryaquepts, 0 to 3 percent slopes	58	*
677	Typic Cryofluvents	700	0.1
678	Typic Cryofluvents-Histels-Typic Haploturbels association	4,603	0.7
679	Typic Cryofluvents-Typic Dystricrypts complex	4,922	0.7
680	Typic Cryofluvents-Typic Dystricrypts-Typic Histoturbels complex	14,677	2.2
681	Typic Dystricrypts-Ruptic-Histic Aquiturbels complex	7,094	1.1
682	Typic Dystricrypts-Turbels-Water complex, high moraines	22,289	3.3
683	Typic Dystricrypts-Turbels-Water complex, moraines	40,418	6.1
684	Typic Dystricrypts-Typic Aquiturbels-Typic Haploorthels complex	4,815	0.7
685	Typic Dystricrypts-Typic Cryaquepts-Aquic Dystricrypts complex	8,689	1.3
686	Typic Dystricrypts-Typic Cryaquepts-Typic Histoturbels complex	6,929	1.0
687	Typic Dystricrypts-Typic Haplocryands-Typic Histoturbels complex	2,109	0.3
688	Typic Dystricrypts-Typic Haploturbels-Typic Aquiturbels complex	7,684	1.2
689	Typic Dystricrypts-Typic Histoturbels complex, moraines	2,176	0.3
690	Typic Dystricrypts-Typic Histoturbels complex, ridges	5,999	0.9
691	Typic Dystricrypts-Typic Histoturbels-Folists association	17,379	2.6
692	Typic Dystricrypts-Typic Histoturbels-Typic Aquiturbels complex	4,675	0.7
693	Typic Dystricrypts-Typic Histoturbels-Typic Cryofluvents complex	1,717	0.3
694	Typic Dystricrypts-Aquic Dystricrypts-Orthels complex	2,166	0.3
695	Typic Dystricrypts-Aquic Dystricrypts-Typic Haploorthels complex	3,165	0.5
696	Typic Dystricrypts-Lithic Cryofolists complex	1,322	0.2
697	Typic Dystricrypts-Typic Cryaquepts-Humic Dystricrypts complex	4,209	0.6
698	Typic Haploorthels-Typic Aquiturbels-Ruptic Histoturbels complex	14,949	2.2
699	Typic Haploturbels-Typic Cryaquepts-Typic Dystricrypts complex	6,978	1.0
700	Typic Haploturbels-Typic Histoturbels-Histels complex	18,525	2.8
701	Typic Historthels-Typic Histoturbels-Terric Fibristels, complex	20,972	3.1
702	Typic Histoturbels	13,817	2.1
703	Typic Histoturbels-Glacial Aquiturbels-Histels association	5,450	0.8
704	Typic Histoturbels-Histels-Typic Dystricrypts complex	2,522	0.4
705	Typic Histoturbels-Typic Aquiturbels-Terric Fibristels complex	23,509	3.5
706	Typic Histoturbels-Typic Dystricrypts complex	1,049	0.2
707	Typic Histoturbels-Typic Dystricrypts complex, hills	3,197	0.5
708	Typic Histoturbels-Typic Dystricrypts complex, ridges	10,231	1.5
709	Typic Histoturbels-Typic Dystricrypts-Terric Fibristels complex	2,295	0.3
710	Typic Histoturbels-Typic Dystricrypts-Typic Historthels complex	8,290	1.2
711	Typic Histoturbels-Typic Dystricrypts complex	4,081	0.6
712	Typic Histoturbels-Typic Dystricrypts-Water complex	18,625	2.8
713	Typic Histoturbels-Typic Haploorthels-Terric Hemistels complex	3,411	0.5
714	Typic Histoturbels-Typic Haploturbels-Typic Dystricrypts association	18,639	2.8
715	Volkmar silt loam, undulating	365	*
716	Volkmar-Nenana complex, 0 to 3 percent slopes	1,661	0.2
717	Water	517	*
	Total	666,566	100.0

Table 5. Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
601: Aquic Dystricryepts, high moraines-----	0-2	Slightly decomposed plant material, moderately decomposed plant material, highly decomposed plant material	OL, SM	A-8	---	---
	2-4	Very fine sandy loam, silt loam	ML	A-5, A-4	30-50	NP-5
	4-16	Gravelly very fine sandy loam, gravelly sandy loam, gravelly loamy sand, gravelly silt loam, sandy loam	CL-ML, SM	A-4, A-2, A-1	0-15	NP-5
	16-60	Very gravelly sandy loam, gravelly loamy sand, cobbly sand, very gravelly very fine sandy loam	GC-GM, GM, GW-GM	A-4, A-1	0-15	NP-5
Typic Dystricryepts, high moraines-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-3	Gravelly silt loam, mucky silt loam, silt loam, very fine sandy loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	3-4	Gravelly sandy loam, gravelly loamy sand, very gravelly sandy loam	SM, SC-SM	A-2-4, A-1	0-15	NP-5
	4-9	Very gravelly loamy sand, gravelly sandy loam, extremely stony coarse sand, very gravelly sandy loam	GP, SC-SM, SM	A-1, A-2-4	0-15	NP-5
	9-60	Extremely stony coarse sand, very gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam	GM, GP, SC-SM	A-2-4, A-1	0-5	NP-5
Histels, high moraines-----	0-4	Mucky peat	PT	A-8	---	---
	4-22	Muck	OL, SM	A-8	---	---
	22-28	Permanently frozen mucky very fine sandy loam, permanently frozen mucky silt loam	OH, OL	A-5, A-4	---	---
	28-60	Permanently frozen material			---	---
602: Audrey-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	1-8	Silt loam	ML	A-4	30-40	NP-5
	8-17	Silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	17-28	Cobbly very fine sandy loam, silt loam, gravelly silt loam, very fine sandy loam	GM, SM, ML	A-2-4, A-4	30-40	NP-5
	28-60	Very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM	A-1	0-0	NP
Butchlake, gently sloping-----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Mucky silt loam, silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
Typic Aquiturbels-----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
603: Audrey-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	1-8	Silt loam	ML	A-4	30-40	NP-5
	8-17	Very fine sandy loam, silt loam	ML, SM	A-4	30-40	NP-5
	17-28	Gravelly silt loam, silt loam, cobbly very fine sandy loam, very fine sandy loam	GM, SM, ML	A-2-4, A-4	30-40	NP-5
	28-60	Very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM	A-1	0-0	NP
Typic Aquiturbels -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---
604: Babel-----	0-2	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	2-4	Mucky silt loam, silt loam	SM, OL	A-4	25-50	NP-5
	4-8	Gravelly silt loam, silt loam	ML, GM	A-4	25-35	NP-5
	8-18	Gravelly sandy loam, very gravelly sandy loam	SM, GM, SC-SM	A-2-4, A-4, A-1	0-15	NP-5
	18-25	Gravelly sandy loam, very stony sandy loam	GM, SC-SM, SM	A-4, A-1, A-2	0-15	NP-5
	25-60	Permanently frozen gravelly sandy loam, permanently frozen very gravelly sandy loam		A-4, A-1	---	---
605: Babel-----	0-2	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	2-4	Silt loam, mucky silt loam	SM, OL	A-4	25-50	NP-5
	4-8	Gravelly silt loam, silt loam	ML, GM	A-4	25-35	NP-5
	8-18	Gravelly sandy loam, very gravelly sandy loam	SM, GM, SC-SM	A-2-4, A-4, A-1	0-15	NP-5
	18-25	Gravelly sandy loam, very stony sandy loam	GM, SC-SM, SM	A-4, A-1, A-2	0-15	NP-5
	25-60	Permanently frozen very gravelly sandy loam, permanently frozen gravelly sandy loam		A-4, A-1	---	---
Butchlake -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Silt loam, mucky silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
606: Babel-----	0-2	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	2-4	Silt loam, mucky silt loam	SM, OL	A-4	25-50	NP-5
	4-8	Gravelly silt loam, silt loam	ML, GM	A-4	25-35	NP-5
	8-18	Very gravelly sandy loam, gravelly sandy loam	SM, GM, SC-SM	A-2-4, A-4, A-1	0-15	NP-5
	18-25	Very stony sandy loam, gravelly sandy loam	GM, SC-SM, SM	A-4, A-1, A-2	0-15	NP-5
	25-60	Permanently frozen very gravelly sandy loam, permanently frozen gravelly sandy loam		A-4, A-1	---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plas- ticity index
			Unified	AASHTO		
	In.				Pct.	
606: Butchlake -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Silt loam, mucky silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, very cobbly sandy loam, gravelly sandy loam	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
607: Butchlake -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Mucky silt loam, silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, gravelly sandy loam, very cobbly sandy loam	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
608: Butchlake -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Mucky silt loam, silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand, gravelly sandy loam	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
609: Butchlake, moderately steep -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Silt loam, mucky silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
Nomercy Lake -----	0-2	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	2-4	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	4-13	Very gravelly sandy loam, gravelly fine sandy loam	SM, GP-GM, SC-SM	A-1, A-2, A-4	0-15	NP-5
	13-60	Very cobbly loamy sand, extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loamy sand, very gravelly fine sandy loam	GC-GM, GM, GW-GM	A-2, A-1	0-15	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
609: Butchlake, very steep ---	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Silt loam, mucky silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
610: Butchlake, gently Sloping -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Mucky silt loam, silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly loamy sand, gravelly sandy loam, very cobbly sandy loam	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
Southpaw -----	0-4	Slightly decomposed plant material	PT	A-8	---	---
	4-13	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	13-22	Fine sandy loam, sandy loam	SM	A-4, A-2	15-25	NP-5
	22-36	Gravelly fine sandy loam, gravelly sandy loam, sandy loam, fine sandy loam	GM, SM	A-4, A-1	15-25	NP-5
	36-60	Very gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	GW-GM, GM	A-1	0-10	NP-3
611: Butchlake -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Silt loam, mucky silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
Southpaw -----	0-4	Slightly decomposed plant material	PT	A-8	---	---
	4-13	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	13-22	Fine sandy loam, sandy loam	SM	A-4, A-2	15-25	NP-5
	22-36	Gravelly sandy loam, sandy loam, fine sandy loam, gravelly fine sandy loam	GM, SM	A-4, A-1	15-25	NP-5
	36-60	Very gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly loamy sand	GW-GM, GM	A-1	0-10	NP-3

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plas- ticity index
			Unified	AASHTO		
	In.				Pct.	
612: Butchlake, strongly Sloping -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Silt loam, mucky silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, very gravelly sandy loam, gravelly loam, very cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly loamy sand, very cobbly sandy loam	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
Southpaw -----	0-4	Slightly decomposed plant material	PT	A-8	---	---
	4-13	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	13-22	Sandy loam, fine sandy loam	SM	A-4, A-2	15-25	NP-5
	22-36	Gravelly fine sandy loam, fine sandy loam, sandy loam, gravelly sandy loam	GM, SM	A-4, A-1	15-25	NP-5
	36-60	Extremely gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand	GW-GM, GM	A-1	0-10	NP-3
613: Chena -----	0-4	Slightly decomposed plant material	PT	A-8	0-0	NP
	4-9	Stratified fine sand to silt loam, fine sandy loam, fine sand	SM, ML	A-4, A-1	25-30	NP-5
	9-60	Very gravelly coarse sand, very gravelly sand, gravelly sand	SP, GP, SP-SM	A-1	0-0	NP
614: Chena -----	0-4	Slightly decomposed plant material	PT	A-8	0-0	NP
	4-9	Stratified fine sand to silt loam, fine sand, fine sandy loam	SM, ML	A-4, A-1	25-30	NP-5
	9-60	Very gravelly sand, gravelly sand, very gravelly coarse sand	SP, GP, SP-SM	A-1	0-0	NP
615: Chetlake -----	0-3	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	3-20	Very fine sandy loam, loam, sandy loam	SM, ML	A-4	15-28	NP-4
	20-26	Silt loam, very fine sandy loam	ML, SM	A-4	15-30	NP-4
	26-31	Very cobbly sandy loam, very gravelly loam, gravelly sandy loam, gravelly loam, very cobbly loam	SM, SC-SM	A-1, A-4	10-20	NP-4
	31-60	Permanently frozen gravelly sandy loam, permanently frozen very stony loam, permanently frozen very cobbly sandy loam, permanently frozen very cobbly loam, permanently frozen very gravelly loam		A-2, A-1	---	---
616: Donnelly -----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-6	Gravelly silt loam, silt loam	ML, SM	A-4	25-35	NP-10
	6-12	Gravelly silt loam, gravelly sandy loam	GM, SM	A-4, A-2	25-35	NP-10
	12-60	Very gravelly sand	GP, GW, SW-SM	A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
617: Donnelly, very steep -----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-6	Silt loam, gravelly silt loam	ML, SM	A-4	25-35	NP-10
	6-12	Gravelly silt loam, gravelly sandy loam	GM, SM	A-4, A-2	25-35	NP-10
	12-60	Very gravelly sand	GP, GW, SW-SM	A-1	0-0	NP
618: Donnelly-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-6	Silt loam, gravelly silt loam	ML, SM	A-4	25-35	NP-10
	6-12	Gravelly silt loam, gravelly sandy loam	GM, SM	A-4, A-2	25-35	NP-10
	12-60	Very gravelly sand	GP, GW, SW-SM	A-1	0-0	NP
Nenana-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-15	Silt loam, silt	ML	A-4	25-35	NP-10
	15-21	Gravelly silt loam, gravelly silt	ML, GM	A-4	25-35	NP-10
	21-60	Extremely gravelly sand, very gravelly sand	GW, SP-SM	A-1	0-0	NP
619: Gerstle-----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-7	Silt loam	ML, MH	A-4, A-5	30-60	NP-10
	7-60	Stratified loamy fine sand to silt loam	ML	A-4	15-30	NP-5
Moosehead-----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-6	Silt loam	MH, ML	A-4, A-5	30-60	NP-10
	6-10	Stratified loamy fine sand to silt loam	ML, CL-ML	A-4	0-15	NP-5
	10-60	Very gravelly sand, extremely gravelly sand	GW, GP, GP-GM	A-1	0-0	NP
620: Gerstle-----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-7	Silt loam	ML, MH	A-4, A-5	30-60	NP-10
	7-60	Stratified loamy fine sand to silt loam	ML	A-4	15-30	NP-5
Tanana-----	0-3	Slightly decomposed plant material	PT	A-8	0-0	NP
	3-6	Silt loam, mucky silt loam	ML, OL	A-4	30-40	NP-10
	6-25	Very fine sandy loam, stratified silt loam to loamy fine sand	ML	A-4	30-40	NP-10
	25-60	Permanently frozen material			---	---
621: Pits, gravel -----	---	---	---	---	---	---
622: Histels, outwash plains-----	0-20	Mucky peat	PT	A-8	---	---
	20-24	Silt loam, mucky silt loam, very fine sandy loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	24-27	Permanently frozen silt loam			---	---
	27-34	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	34-60	Permanently frozen material			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
623: Histels, outwash plains-----	0-20	Mucky peat	PT	A-8	---	---
	20-24	Silt loam, mucky silt loam, very fine sandy loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	24-27	Permanently frozen silt loam			---	---
	27-34	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	34-60	Permanently frozen material			---	---
Orthels, outwash plains-----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-10	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-4, A-5	25-50	NP-5
	10-13	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	13-28	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	28-60	Permanently frozen gravelly sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen sandy loam			---	---
Turbels, outwash plains-----	0-7	Slightly decomposed plant material	PT	A-8	---	---
	7-10	Moderately decomposed plant material	PT	A-8	---	---
	10-13	Mucky silt loam, mucky very fine sandy loam	OH, OL	A-5, A-4	25-50	NP-5
	13-18	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	18-20	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	20-60	Permanently frozen material			---	---
624: Histels, mountains-----	0-3	Peat, mucky peat	PT	A-8	---	---
	3-15	Muck	OL, SM	A-8	---	---
	15-20	Permanently frozen highly decomposed plant material			---	---
	20-24	Permanently frozen mucky fine sand, permanently frozen mucky silt loam			---	---
	24-60	Permanently frozen material			---	---
Orthels, mountains-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-7	Highly decomposed plant material	OL, SM	A-8	---	---
	7-9	Silt loam, mucky silt loam, very fine sandy loam	OL, ML	A-4	30-40	NP-5
	9-12	Very cobbly very fine sandy loam, gravelly loam, sandy loam, very fine sandy loam, silt loam	SM, CL-ML	A-4, A-1	0-15	NP-5
	12-60	Permanently frozen extremely gravelly coarse sand, permanently frozen very cobbly very fine sandy loam, permanently frozen gravelly loam, permanently frozen extremely gravelly loamy coarse sand, permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly very fine sandy loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
624: Typic Dystrogelepts, mountains-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-6	Mucky very fine sandy loam, mucky silt loam, gravelly sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Cobbly silt loam, very gravelly sandy loam, very cobbly sandy loam, very stony sandy loam, loamy very fine sand, gravelly silt loam, gravelly sandy loam, gravelly loamy sand	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Very gravelly loamy sand, very gravelly coarse sandy loam, extremely cobbly coarse sand, extremely gravelly coarse sand, very cobbly loamy sand, very stony coarse sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5
625: Histels, high moraines-----	0-4	Mucky peat	PT	A-8	---	---
	4-22	Muck	OL, SM	A-8	---	---
	22-28	Permanently frozen mucky silt loam, permanently frozen mucky very fine sandy loam	OH, OL	A-5, A-4	---	---
	28-60	Permanently frozen material			---	---
Turbels, high moraines-----	0-6	Peat	PT	A-8	---	---
	6-11	Mucky peat	PT	A-8	---	---
	11-12	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	12-24	Permanently frozen loam, permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen material			---	---
626: Histels, high moraines-----	0-4	Mucky peat	PT	A-8	---	---
	4-22	Muck	OL, SM	A-8	---	---
	22-28	Permanently frozen mucky silt loam, permanently frozen mucky very fine sandy loam	OH, OL	A-5, A-4	---	---
	28-60	Permanently frozen material			---	---
Typic Cryaquepts, high moraines-----	0-4	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	4-12	Gravelly sandy loam, gravelly loam, cobbly loam, very cobbly loamy sand, cobbly loamy sand, very cobbly loam, gravelly loamy sand	SM, SC-SM	A-2, A-1	0-15	NP-5
	12-60	Gravelly loamy coarse sand, gravelly sandy loam	SM, SC-SM	A-2, A-1	0-15	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
626: Typic Dystricrypts, high moraines-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-3	Gravelly silt loam, very fine sandy loam, silt loam, mucky silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	3-4	Gravelly sandy loam, very gravelly sandy loam, gravelly loamy sand	SM, SC-SM	A-2-4, A-1	0-15	NP-5
	4-9	Extremely stony coarse sand, gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand	GP, SC-SM, SM	A-1, A-2-4	0-15	NP-5
	9-60	Extremely stony coarse sand, very gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam	GM, GP, SC-SM	A-2-4, A-1	0-5	NP-5
627: Histels, river valleys-----	0-13	Peat, mucky peat	PT	A-8	---	---
	13-18	Mucky peat, muck	OL, SM	A-8	---	---
	18-60	Permanently frozen very fine sandy loam, permanently frozen fine sandy loam, permanently frozen silt loam			---	---
Typic Histoturbels, river valleys-----	0-7	Mucky peat	PT	A-8	---	---
	7-12	Peat	PT	A-8	---	---
	12-15	Very fine sandy loam, mucky silt loam, silt loam	ML, OL	A-4	30-40	NP-5
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
Typic Historthels, river valleys-----	0-5	Peat	PT	A-8	---	---
	5-10	Mucky peat	PT	A-8	---	---
	10-12	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	12-16	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	16-60	Permanently frozen material			---	---
Typic Aquiturbels, river valleys-----	0-4	Moderately decomposed plant material	PT	A-8	---	---
	4-6	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-16	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	16-60	Permanently frozen material			---	---
628: Humic Dystricrypts, high moraines-----	0-2	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	2-12	Very fine sandy loam, silt loam, mucky silt loam	ML, SM, OL	A-4, A-2	30-40	NP-5
	12-60	Extremely stony coarse sand, very gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam, gravelly loamy sand	SM, GP, SC-SM	A-2, A-1, A-4	0-5	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
628: Aquic Umbrorthels, high moraines-----	0-4	Slightly decomposed plant material	PT	A-8	---	---
	4-12	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	12-17	Gravelly silt loam	ML, GM, SM	A-4, A-5	30-50	NP-10
	17-28	Very gravelly sandy loam, gravelly loamy sand, cobbly coarse sandy loam	GM, SC-SM, SM	A-1, A-4	5-15	NP-5
	28-60	Permanently frozen material			---	---
629: Jarvis -----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	ML, SM	A-4	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	CL-ML, SM	A-4, A-2	20-25	NP-5
	24-60	Extremely cobbly sand, very gravelly sand, very cobbly sand	GW, SP-SM	A-1	0-0	NP
630: Jarvis -----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	ML, SM	A-4	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	CL-ML, SM	A-4, A-2	20-25	NP-5
	24-60	Very gravelly sand, extremely cobbly sand, very cobbly sand	GW, SP-SM	A-1	0-0	NP
631: Jarvis -----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-6	Stratified fine sand to silt loam, very fine sandy loam	ML, SM	A-4	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	CL-ML, SM	A-4, A-2	20-25	NP-5
	24-60	Very cobbly sand, extremely cobbly sand, very gravelly sand	GW, SP-SM	A-1	0-0	NP
Chena -----	0-4	Slightly decomposed plant material	PT	A-8	0-0	NP
	4-9	Fine sand, fine sandy loam, stratified fine sand to silt loam	SM, ML	A-4, A-1	25-30	NP-5
	9-60	Gravelly sand, very gravelly sand, very gravelly coarse sand	SP, GP, SP-SM	A-1	0-0	NP
632: Chena -----	0-4	Slightly decomposed plant material	PT	A-8	0-0	NP
	4-9	Fine sandy loam, fine sand, stratified fine sand to silt loam	SM, ML	A-4, A-1	25-30	NP-5
	9-60	Gravelly sand, very gravelly coarse sand, very gravelly sand	SP, GP, SP-SM	A-1	0-0	NP
Jarvis -----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	ML, SM	A-4	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	CL-ML, SM	A-4, A-2	20-25	NP-5
	24-60	Very cobbly sand, very gravelly sand, extremely cobbly sand	GW, SP-SM	A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
633: Jarvis -----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	ML, SM	A-4	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	CL-ML, SM	A-4, A-2	20-25	NP-5
	24-60	Extremely cobbly sand, very cobbly sand, very gravelly sand	GW, SP-SM	A-1	0-0	NP
Salchaket -----	0-3	Slightly decomposed plant material	PT	A-8	0-0	NP
	3-24	Very fine sandy loam	ML	A-4	25-30	NP-5
	24-45	Stratified silt loam to fine sand	ML, SM	A-4	25-30	NP-5
	45-60	Very gravelly sand	GP-GM, SP-SM	A-1	0-0	NP
634: Lithic Cryofolists, mountains-----	0-8	Mucky peat, peat	PT	A-8	---	---
	8-10	Mucky silt loam, silt loam	ML, OL, SM	A-4	30-40	NP-5
	10-60	Bedrock			---	---
Typic Cryorthents, mountains-----	0-4	Slightly decomposed plant material, highly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-6	Silt loam, coarse sandy loam, loamy coarse sand, coarse sand	CL-ML, SM, ML	A-4, A-2	0-25	NP-5
	6-60	Very gravelly loamy sand, extremely gravelly loamy coarse sand, extremely gravelly coarse sand	GP, GM, GW	A-1	0-0	NP
Typic Dystrogelepts, mountains-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-6	Gravelly sandy loam, mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam, very stony sandy loam, gravelly loamy sand, gravelly silt loam, loamy very fine sand, cobbly silt loam	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Very gravelly loamy sand, extremely cobbly coarse sand, extremely gravelly coarse sand, very cobbly loamy sand, very stony coarse sand, very gravelly coarse sandy loam	GM, GP, GC-GM	A-2, A-1	0-15	NP-5
Typic Histoturbels, mountains-----	0-3	Peat	PT	A-8	---	---
	3-6	Mucky peat	PT	A-8	---	---
	6-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-18	Loam, very fine sandy loam, silt loam	ML, SM	A-4	30-40	NP-5
	18-60	Permanently frozen loam, permanently frozen gravelly silt loam, permanently frozen very fine sandy loam, permanently frozen silt loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
635: McKinley, moderately steep -----	0-2	Silt loam, gravelly sandy loam, gravelly loam, gravelly silt loam, gravelly mucky silt loam	SM, ML	A-2, A-5, A-4	20-42	NP-4
	2-12	Extremely gravelly silt loam, very gravelly loam, very gravelly sandy loam, extremely stony sandy loam	GC-GM, GW-GM, GM	A-4, A-1	10-24	NP-4
	12-26	Extremely stony sandy loam, extremely gravelly loam	GM, GP, GC-GM	A-1, A-4	10-22	NP-4
	26-30	Extremely cobbly sandy loam, extremely stony sandy loam, extremely stony loam	GM, GP, GC-GM	A-1, A-4	10-20	NP-4
	30-60	Bedrock			---	---
636: McKinley, very steep ----	0-2	Gravelly silt loam, gravelly loam, gravelly sandy loam, silt loam, gravelly mucky silt loam	SM, ML	A-2, A-5, A-4	20-42	NP-4
	2-12	Extremely stony sandy loam, very gravelly sandy loam, very gravelly loam, extremely gravelly silt loam	GC-GM, GW-GM, GM	A-1, A-4	10-24	NP-4
	12-26	Extremely stony sandy loam, extremely gravelly loam	GM, GP, GC-GM	A-1, A-4	10-22	NP-4
	26-30	Extremely cobbly sandy loam, extremely stony sandy loam, extremely stony loam	GM, GP, GC-GM	A-4, A-1	10-20	NP-4
	30-60	Bedrock			---	---
637: Moosehead-----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-6	Silt loam	MH, ML	A-5, A-4	30-60	NP-10
	6-10	Stratified loamy fine sand to silt loam	ML, CL-ML	A-4	0-15	NP-5
	10-60	Very gravelly sand, extremely gravelly sand	GW, GP, GP-GM	A-1	0-0	NP
638: Mosquito -----	0-18	Peat	PT	A-8	0-0	NP
	18-42	Stratified silt loam to loamy fine sand, very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	42-60	Permanently frozen material			---	---
639: Nenana-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-15	Silt loam, silt	ML	A-4	25-35	NP-10
	15-21	Gravelly silt loam, gravelly silt	ML, GM	A-4	25-35	NP-10
	21-60	Extremely gravelly sand, very gravelly sand	GW, SP-SM	A-1	0-0	NP
640: Nenana-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-15	Silt loam, silt	ML	A-4	25-35	NP-10
	15-21	Gravelly silt loam, gravelly silt	ML, GM	A-4	25-35	NP-10
	21-60	Very gravelly sand, extremely gravelly sand	GW, SP-SM	A-1	0-0	NP
Donnelly-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-6	Silt loam, gravelly silt loam	ML, SM	A-4	25-35	NP-10
	6-12	Gravelly sandy loam, gravelly silt loam	GM, SM	A-4, A-2	25-35	NP-10
	12-60	Very gravelly sand	GP, GW, SW-SM	A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plas- ticity index
			Unified	AASHTO		
	In.				Pct.	
641: Nenana-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-15	Silt loam, silt	ML	A-4	25-35	NP-10
	15-21	Gravelly silt loam, gravelly silt	ML, GM	A-4	25-35	NP-10
	21-60	Very gravelly sand, extremely gravelly sand	GW, SP-SM	A-1	0-0	NP
Donnelly-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-6	Gravelly silt loam, silt loam	ML, SM	A-4	25-35	NP-10
	6-12	Gravelly silt loam, gravelly sandy loam	GM, SM	A-4, A-2	25-35	NP-10
	12-60	Very gravelly sand	GP, GW, SW-SM	A-1	0-0	NP
642: Nenana-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-15	Silt loam, silt	ML	A-4	25-35	NP-10
	15-21	Gravelly silt loam, gravelly silt	ML, GM	A-4	25-35	NP-10
	21-60	Very gravelly sand, extremely gravelly sand	GW, SP-SM	A-1	0-0	NP
Urban land-----	---	---	---	---	---	---
643: Ninchuun-----	0-6	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	6-12	Mucky silt loam, silt loam	ML	A-4	0-37	NP-4
	12-16	Silt loam	ML	A-4	0-30	NP-4
	16-20	Silt loam	ML	A-4	0-26	NP-4
	20-32	Permanently frozen silt loam		A-4	---	---
	32-60	Permanently frozen gravelly sandy loam, permanently frozen gravelly fine sandy loam, permanently frozen gravelly silt loam		A-4, A-1, A-2	---	---
644: Ninchuun-----	0-6	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	6-12	Silt loam, mucky silt loam	ML	A-4	0-37	NP-4
	12-16	Silt loam	ML	A-4	0-30	NP-4
	16-20	Silt loam	ML	A-4	0-26	NP-4
	20-32	Permanently frozen silt loam		A-4	---	---
	32-60	Permanently frozen gravelly sandy loam, permanently frozen gravelly fine sandy loam, permanently frozen gravelly silt loam		A-4, A-1, A-2	---	---
Audrey-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	1-8	Silt loam	ML	A-4	30-40	NP-5
	8-17	Silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	17-28	Cobbly very fine sandy loam, very fine sandy loam, silt loam, gravelly silt loam	GM, SM, ML	A-2-4, A-4	30-40	NP-5
	28-60	Very gravelly coarse sandy loam, very gravelly sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM	A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plas- ticity index
			Unified	AASHTO		
	In.				Pct.	
645: Ninchuun-----	0-6	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	6-12	Silt loam, mucky silt loam	ML	A-4	0-37	NP-4
	12-16	Silt loam	ML	A-4	0-30	NP-4
	16-20	Silt loam	ML	A-4	0-26	NP-4
	20-32	Permanently frozen silt loam		A-4	---	---
	32-60	Permanently frozen gravelly fine sandy loam, permanently frozen gravelly sandy loam, permanently frozen gravelly silt loam		A-4, A-1, A-2	---	---
Audrey-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	1-8	Silt loam	ML	A-4	30-40	NP-5
	8-17	Silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	17-28	Gravelly silt loam, cobbly very fine sandy loam, very fine sandy loam, silt loam	GM, SM, ML	A-2-4, A-4	30-40	NP-5
	28-60	Very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM	A-1	0-0	NP
646: Nomeracy Lake-----	0-2	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	2-4	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	4-13	Gravelly fine sandy loam, very gravelly sandy loam	SM, GP-GM, SC-SM	A-1, A-2, A-4	0-15	NP-5
	13-60	Very gravelly fine sandy loam, very gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand, very cobbly loamy sand	GC-GM, GM, GW-GM	A-2, A-1	0-15	NP-5
Butchlake-----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Mucky silt loam, silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Very cobbly sandy loam, extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, gravelly sandy loam	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
Water-----	---	---	---	---	---	---
647: Riverwash-----	---	---	---	---	---	---
648: Salchaket-----	0-3	Slightly decomposed plant material	PT	A-8	0-0	NP
	3-24	Very fine sandy loam	ML	A-4	25-30	NP-5
	24-45	Stratified silt loam to fine sand	ML, SM	A-4	25-30	NP-5
	45-60	Very gravelly sand	GP-GM, SP-SM	A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
649: Salchaket -----	0-3	Slightly decomposed plant material	PT	A-8	0-0	NP
	3-24	Very fine sandy loam	ML	A-4	25-30	NP-5
	24-45	Stratified silt loam to fine sand	ML, SM	A-4	25-30	NP-5
	45-60	Very gravelly sand	GP-GM, SP-SM	A-1	0-0	NP
650: Tanacross -----	0-9	Peat	PT	A-8	0-0	NP
	9-11	Mucky silt loam	ML, OL	A-4	30-40	NP-10
	11-17	Stratified fine sandy loam to silt loam	ML	A-4	0-40	NP-10
	17-60	Permanently frozen material			---	---
651: Tanana -----	0-3	Slightly decomposed plant material	PT	A-8	0-0	NP
	3-6	Silt loam, mucky silt loam	ML, OL	A-4	30-40	NP-10
	6-25	Very fine sandy loam, stratified silt loam to loamy fine sand	ML	A-4	30-40	NP-10
	25-60	Permanently frozen material			---	---
652: Terric Fibristels, river valleys-----	0-13	Peat	PT	A-8	---	---
	13-18	Muck	OL, SM	A-8	---	---
	18-60	Permanently frozen fine sandy loam, permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
Ruptic-Histic Aquiturbels, river valleys -----	0-4	Peat	PT	A-8	---	---
	4-7	Mucky peat	PT	A-8	---	---
	7-8	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	8-28	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	28-60	Permanently frozen material			---	---
Typic Aquiturbels, river valleys-----	0-4	Moderately decomposed plant material	PT	A-8	---	---
	4-6	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-16	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	16-60	Permanently frozen material			---	---
Typic Histoturbels, river valleys-----	0-7	Mucky peat	PT	A-8	---	---
	7-12	Peat	PT	A-8	---	---
	12-15	Very fine sandy loam, silt loam, mucky silt loam	ML, OL	A-4	30-40	NP-5
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
653: Terric Fibristels, moraines -----	0-15	Peat	PT	A-8	---	---
	15-20	Muck	OL, SM	A-8	---	---
	20-27	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	27-32	Permanently frozen silt loam, permanently frozen fine sandy loam			---	---
	32-60	Permanently frozen material			---	---
Typic Histoturbels, moraines -----	0-9	Mucky peat	PT	A-8	---	---
	9-15	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	15-19	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	19-28	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	28-60	Permanently frozen material			---	---
654: Terric Hemistels-----	0-20	Peat, mucky peat	PT	A-8	---	---
	20-24	Moderately decomposed plant material, silt loam	OL	A-4	0-40	NP-10
	24-60	Permanently frozen silt loam, permanently frozen gravelly silt loam, permanently frozen gravelly sandy loam, permanently frozen very fine sandy loam			---	---
655: Terric Hemistels-----	0-20	Mucky peat, peat	PT	A-8	---	---
	20-24	Moderately decomposed plant material, silt loam	OL	A-4	0-40	NP-10
	24-60	Permanently frozen gravelly silt loam, permanently frozen very fine sandy loam, permanently frozen gravelly sandy loam, permanently frozen silt loam			---	---
Typic Aquiturbels -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---
656: Tetlin, moderately steep -----	0-6	Slightly decomposed plant material	PT	A-8	---	---
	6-24	Silt loam	ML	A-4, A-5	30-50	NP-5
	24-60	Permanently frozen material			---	---
657: Tetlin -----	0-6	Slightly decomposed plant material	PT	A-8	---	---
	6-24	Silt loam	ML	A-4, A-5	30-50	NP-5
	24-60	Permanently frozen material			---	---
658: Tetlin -----	0-6	Slightly decomposed plant material	PT	A-8	---	---
	6-24	Silt loam	ML	A-4, A-5	30-50	NP-5
	24-60	Permanently frozen material			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
659: Glacier -----	---	---	---	---	---	---
660: Turbels -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Silt loam, mucky silt loam, loam	ML, OL	A-4	30-40	NP-5
	6-18	Silt loam, cobbly loam, very gravelly sandy loam, very stony silt loam	ML, GM	A-4, A-1	30-40	NP-5
	18-30	Very gravelly loamy sand, extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam	GC-GM, GM, GP	A-1, A-2-4	0-15	NP-5
	30-60	Permanently frozen extremely gravelly sandy loam, permanently frozen very gravelly sandy loam, permanently frozen very gravelly loamy sand, permanently frozen extremely gravelly loamy sand			---	---
Tetlin -----	0-6	Slightly decomposed plant material	PT	A-8	---	--
	6-24	Silt loam	ML	A-4, A-5	30-50	NP-5
	24-60	Permanently frozen material			---	---
661: Turbels, moderately steep -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Silt loam, mucky silt loam, loam	ML, OL	A-4	30-40	NP-5
	6-18	Silt loam, cobbly loam, very stony silt loam, very gravelly sandy loam	ML, GM	A-4, A-1	30-40	NP-5
	18-30	Extremely gravelly loamy sand, very gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam	GC-GM, GM, GP	A-1, A-2-4	0-15	NP-5
	30-60	Permanently frozen extremely gravelly sandy loam, permanently frozen very gravelly sandy loam, permanently frozen very gravelly loamy sand, permanently frozen extremely gravelly loamy sand			---	---
662: Turbels, steep -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Silt loam, mucky silt loam, loam	ML, OL	A-4	30-40	NP-5
	6-18	Silt loam, cobbly loam, very gravelly sandy loam, very stony silt loam	ML, GM	A-4, A-1	30-40	NP-5
	18-30	Extremely gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	GC-GM, GM, GP	A-1, A-2-4	0-15	NP-5
	30-60	Permanently frozen very gravelly sandy loam, permanently frozen very gravelly loamy sand, permanently frozen extremely gravelly loamy sand, permanently frozen extremely gravelly sandy loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
663: Turbels, very steep-----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Loam, silt loam, mucky silt loam	ML, OL	A-4	30-40	NP-5
	6-18	Very gravelly sandy loam, very stony silt loam, cobbly loam, silt loam	ML, GM	A-4, A-1	30-40	NP-5
	18-30	Very gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly loamy sand	GC-GM, GM, GP	A-1, A-2-4	0-15	NP-5
	30-60	Permanently frozen very gravelly sandy loam, permanently frozen extremely gravelly sandy loam, permanently frozen very gravelly loamy sand, permanently frozen extremely gravelly loamy sand			---	---
664: Turbels, mountains-----	0-4	Peat	PT	A-8	---	---
	4-7	Mucky peat	PT	A-8	---	---
	7-9	Permanently frozen mucky peat	PT	A-8	---	---
	9-15	Permanently frozen very fine sandy loam, permanently frozen silt loam	ML, SM	A-4	---	---
	15-60	Permanently frozen very cobbly sandy loam, permanently frozen very gravelly sandy loam, permanently frozen gravelly sandy loam, permanently frozen loamy coarse sand, permanently frozen loamy sand, permanently frozen gravelly loamy sand	GP-GM, SM	A-2, A-1	---	---
Aquic Dystrocryepts, mountains-----	0-5	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	5-10	Mucky silt loam, mucky loamy coarse sand	OL, SM	A-2, A-5, A-7	25-50	NP-7
	10-19	Very gravelly coarse sandy loam, silt loam, gravelly loam, gravelly very fine sandy loam	ML, GP-GM, GM	A-4, A-1	0-40	NP-5
	19-60	Very gravelly coarse sand, very gravelly coarse sandy loam, gravelly loamy coarse sand	GC-GM, GM, GW-GM	A-4, A-1	0-5	NP-5
Water -----	---	---	---	---	---	---
665: Turbels, mountains-----	0-4	Peat	PT	A-8	---	---
	4-7	Mucky peat	PT	A-8	---	---
	7-9	Permanently frozen mucky peat	PT	A-8	---	---
	9-15	Permanently frozen silt loam, permanently frozen very fine sandy loam	ML, SM	A-4	---	---
	15-60	Permanently frozen loamy sand, permanently frozen loamy coarse sand, permanently frozen very cobbly sandy loam, permanently frozen very gravelly sandy loam, permanently frozen gravelly loamy sand, permanently frozen gravelly sandy loam	GP-GM, SM	A-2, A-1	---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
665: Typic Dystroglepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-6	Gravelly sandy loam, mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Gravelly loamy sand, very gravelly sandy loam, very cobbly sandy loam, very stony sandy loam, cobbly silt loam, gravelly sandy loam, loamy very fine sand, gravelly silt loam	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Extremely cobbly coarse sand, very gravelly coarse sandy loam, very gravelly loamy sand, very stony coarse sand, very cobbly loamy sand, extremely gravelly coarse sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5
Ruptic-Histic Aquiturbels, mountains-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	1-3	Silt loam, gravelly fine sandy loam	CL, SM	A-4, A-1, A-2	5-25	NP-10
	3-30	Silt loam, very gravelly sandy loam, gravelly coarse sandy loam	CL, GP-GM, GM	A-4, A-1	3-25	NP-10
	30-60	Permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly silt loam, permanently frozen gravelly sandy loam			---	---
666: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---
667: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---
668: Typic Aquiturbels, gently sloping -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---
669: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
669: Butchlake -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-4	Silt loam, mucky silt loam	OL, ML	A-4	30-40	NP-5
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	GW-GM, GC-GM, GP	A-1, A-4	0-15	NP-5
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	GP-GM, GM, GC-GM	A-1, A-4	0-15	NP-5
Southpaw -----	0-4	Slightly decomposed plant material	PT	A-8	---	---
	4-13	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	13-22	Fine sandy loam, sandy loam	SM	A-4, A-2	15-25	NP-5
	22-36	Gravelly sandy loam, sandy loam, gravelly fine sandy loam, fine sandy loam	GM, SM	A-4, A-1	15-25	NP-5
	36-60	Very gravelly loamy sand, extremely gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam	GW-GM, GM	A-1	0-10	NP-3
670: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---
Terric Hemistels-----	0-20	Mucky peat, peat	PT	A-8	---	---
	20-24	Moderately decomposed plant material, silt loam	OL	A-4	0-40	NP-10
	24-60	Permanently frozen very fine sandy loam, permanently frozen gravelly sandy loam, permanently frozen gravelly silt loam, permanently frozen silt loam			---	---
671: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-15	Very fine sandy loam	ML	A-4	0-33	NP-3
	15-33	Permanently frozen very fine sandy loam			---	---
	33-41	Permanently frozen very fine sandy loam			---	---
	41-60	Permanently frozen gravelly very fine sandy loam			---	---
Terric Hemistels-----	0-20	Mucky peat, peat	PT	A-8	---	---
	20-24	Moderately decomposed plant material, silt loam	OL	A-4	0-40	NP-10
	24-60	Permanently frozen silt loam, permanently frozen gravelly silt loam, permanently frozen gravelly sandy loam, permanently frozen very fine sandy loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plas- ticity index
			Unified	AASHTO		
	In.				Pct.	
672: Typic Aquiturbels, ridges -----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-8	Silt loam, very fine sandy loam	ML	A-5, A-4	25-50	3-7
	8-15	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	15-24	Permanently frozen very fine sandy loam, permanently frozen loam, permanently frozen silt loam			---	---
	24-60	Permanently frozen material			---	---
Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Gravelly silt loam, silt loam, mucky silt loam, very fine sandy loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	ML, GP-GM	A-1, A-4	30-40	NP-5
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	GP, SW-SM, SM	A-1	0-0	NP
673: Typic Aquiturbels, moraines -----	0-6	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	9-19	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	19-24	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	24-60	Permanently frozen silt loam, permanently frozen gravelly loam, permanently frozen fine sandy loam			---	---
Typic Dystrocryepts, moraines -----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-5	Very fine sandy loam, gravelly silt loam, silt loam, mucky silt loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	5-8	Sandy loam, silt loam, very fine sandy loam	SM, ML	A-4, A-2	0-40	NP-5
	8-24	Very stony very fine sandy loam, fine sandy loam, gravelly sandy loam, gravelly fine sandy loam	SM, GM, SC-SM	A-1, A-4	0-15	NP-5
	24-60	Extremely gravelly loamy coarse sand, extremely stony loamy sand, very gravelly fine sandy loam, gravelly sandy loam	GP-GM, SC-SM, SM	A-1, A-4	0-15	NP-5
Typic Haploturbels, moraines -----	0-4	Slightly decomposed plant material	PT	A-8	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-8	Silt loam, mucky silt loam, very fine sandy loam, gravelly silt loam	ML, OL, SM	A-4, A-1	30-40	NP-5
	8-11	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	11-16	Permanently frozen silt loam, permanently frozen sandy loam, permanently frozen very fine sandy loam			---	---
	16-60	Permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen sandy loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
674: Typic Aquiturbels, river valleys-----	0-4	Moderately decomposed plant material	PT	A-8	---	---
	4-6	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-16	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	16-60	Permanently frozen material			---	---
Typic Histoturbels, river valleys-----	0-7	Mucky peat	PT	A-8	---	---
	7-12	Peat	PT	A-8	---	---
	12-15	Silt loam, very fine sandy loam, mucky silt loam	ML, OL	A-4	30-40	NP-5
	15-60	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
675: Typic Aquorthels, mountains-----	0-3	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	30-50	NP-5
	3-14	Silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	14-24	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen material			---	---
Typic Histoturbels, mountains-----	0-3	Peat	PT	A-8	---	---
	3-6	Mucky peat	PT	A-8	---	---
	6-13	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	13-18	Silt loam, loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	18-60	Permanently frozen silt loam, permanently frozen gravelly silt loam, permanently frozen loam, permanently frozen very fine sandy loam			---	---
676: Typic Cryaquepts-----	0-4	Silt loam	ML	A-4, A-5	30-45	NP-4
	4-8	Gravelly silt loam, silt loam	CL-ML, SM, ML	A-4	0-24	NP-4
	8-29	Very gravelly sandy loam, very gravelly fine sandy loam	GC-GM, GM	A-1, A-2, A-4	0-20	NP-4
	29-35	Loam	CL, CL-ML	A-4	20-32	4-14
	35-56	Clay loam	CL	A-7, A-6	37-45	19-25
	56-60	Loam	CL, CL-ML	A-4	20-32	4-14
677: Typic Cryofluvents, river valleys-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-4	Mucky silt loam, silt loam, loamy fine sand, very fine sandy loam	OL, SM	A-2, A-4	0-30	NP-5
	4-11	Gravelly coarse sand, gravelly sand, very fine sandy loam, sand, sandy loam, very gravelly coarse sand	SW-SM, GP, SM	A-4, A-1	0-0	NP
	11-60	Very gravelly coarse sand, sandy loam, gravelly coarse sand, gravelly sand, very fine sandy loam, sand, extremely gravelly coarse sand	GW, GP, SM	A-4, A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
678: Typic Cryofluvents, river valleys-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-4	Very fine sandy loam, loamy fine sand, mucky silt loam, silt loam	OL, SM	A-2, A-4	0-30	NP-5
	4-11	Sandy loam, gravelly coarse sand, gravelly sand, very fine sandy loam, sand, very gravelly coarse sand	SW-SM, GP, SM	A-4, A-1	0-0	NP
	11-60	Extremely gravelly coarse sand, very gravelly coarse sand, sandy loam, sand, very fine sandy loam, gravelly sand, gravelly coarse sand	GW, GP, SM	A-4, A-1	0-0	NP
Histels, river valleys -----	0-13	Peat, mucky peat	PT	A-8	---	---
	13-18	Muck, mucky peat	OL, SM	A-8	---	---
	18-60	Permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen fine sandy loam			---	---
Typic Haploturbels, river valleys-----	0-6	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	6-10	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	10-15	Very fine sandy loam, fine sandy loam, silt loam	ML	A-4	20-30	NP-5
	15-23	Permanently frozen silt loam, permanently frozen fine sandy loam, permanently frozen very fine sandy loam			---	---
	23-28	Permanently frozen fine sandy loam, permanently frozen sandy loam			---	---
	28-60	Permanently frozen material			---	---
679: Typic Cryofluvents, river valleys-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-4	Loamy fine sand, very fine sandy loam, mucky silt loam, silt loam	OL, SM	A-2, A-4	0-30	NP-5
	4-11	Gravelly coarse sand, very gravelly coarse sand, very fine sandy loam, gravelly sand, sand, sandy loam	SW-SM, GP, SM	A-4, A-1	0-0	NP
	11-60	Sand, very fine sandy loam, gravelly sand, gravelly coarse sand, sandy loam, very gravelly coarse sand, extremely gravelly coarse sand	GW, GP, SM	A-4, A-1	0-0	NP
Typic Dystrocryepts, river valleys-----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-10	Very fine sandy loam, silt loam	ML, SM	A-4	30-40	NP-5
	10-24	Very fine sandy loam, silt loam	ML, SM	A-4	30-40	NP-5
	24-60	Gravelly loamy sand, loamy sand, cobbly loamy sand, very gravelly coarse sand, gravelly coarse sand	GP, SC-SM, SW-SM	A-1	0-5	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
680: Typic Cryofluvents, river valleys-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-4	Loamy fine sand, mucky silt loam, silt loam, very fine sandy loam	OL, SM	A-2, A-4	0-30	NP-5
	4-11	Very gravelly coarse sand, sandy loam, sand, very fine sandy loam, gravelly coarse sand, gravelly sand	SW-SM, GP, SM	A-4, A-1	0-0	NP
	11-60	Extremely gravelly coarse sand, very gravelly coarse sand, sand, very fine sandy loam, gravelly coarse sand, gravelly sand, sandy loam	GW, GP, SM	A-4, A-1	0-0	NP
Typic Dystrocryepts, river valleys-----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-10	Silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	10-24	Very fine sandy loam, silt loam	ML, SM	A-4	30-40	NP-5
	24-60	Very gravelly coarse sand, gravelly coarse sand, gravelly loamy sand, cobbly loamy sand, loamy sand	GP, SC-SM, SW-SM	A-1	0-5	NP-5
Typic Histoturbels, river valleys-----	0-7	Mucky peat	PT	A-8	---	---
	7-12	Peat	PT	A-8	---	---
	12-15	Very fine sandy loam, mucky silt loam, silt loam	ML, OL	A-4	30-40	NP-5
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
681: Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Mucky silt loam, silt loam, very fine sandy loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Silt loam, very gravelly coarse sand, gravelly sandy loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Very gravelly coarse sand, very gravelly loamy coarse sand, gravelly loamy sand, extremely gravelly coarse sand	GP, SW-SM, SM	A-1	0-0	NP
Ruptic-Histic Aquiturbels, ridges -----	0-4	Peat	PT	A-8	---	---
	4-9	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	9-21	Loam, silt loam	ML, SM	A-4	30-40	NP-5
	21-60	Permanently frozen loam, permanently frozen gravelly sandy loam, permanently frozen silt loam	ML, SM	A-4, A-1	---	---
682: Typic Dystrocryepts, high moraines-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-3	Mucky silt loam, very fine sandy loam, silt loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	3-4	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam	SM, SC-SM	A-2-4, A-1	0-15	NP-5
	4-9	Very gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam, extremely stony coarse sand	GP, SC-SM, SM	A-1, A-2-4	0-15	NP-5
	9-60	Very gravelly loamy sand, extremely stony coarse sand, very gravelly sandy loam, gravelly sandy loam	GM, GP, SC-SM	A-1, A-2-4	0-5	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
682: Turbels, high moraines -----	0-6	Peat	PT	A-8	---	---
	6-11	Mucky peat	PT	A-8	---	---
	11-12	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	12-24	Permanently frozen silt loam, permanently frozen loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen material			---	---
Water -----	---	---	---	---	---	---
683: Typic Dystricrypts, moraines -----	0-4	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-5	Very fine sandy loam, gravelly silt loam, mucky silt loam, silt loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	5-8	Very fine sandy loam, silt loam, sandy loam	SM, ML	A-4, A-2	0-40	NP-5
	8-24	Very stony very fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, fine sandy loam	SM, GM, SC-SM	A-1, A-4	0-15	NP-5
	24-60	Very gravelly fine sandy loam, gravelly sandy loam, extremely stony loamy sand, extremely gravelly loamy coarse sand	GP-GM, SC-SM, SM	A-1, A-4	0-15	NP-5
Turbels, moraines -----	0-5	Peat	PT	A-8	---	---
	5-10	Mucky very fine sandy loam, mucky silt loam	OH, SM	A-5, A-4	0-67	NP-5
	10-19	Silt loam, fine sandy loam	ML	A-4	30-40	NP-5
	19-24	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen material			---	---
Water -----	---	---	---	---	---	---
684: Typic Dystricrypts, outwash plains-----	0-2	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	2-5	Mucky silt loam	OL, SM	A-5, A-4	25-50	NP-10
	5-16	Silt loam	ML	A-4, A-5	30-50	NP-10
	16-30	Silt loam	ML	A-4, A-5	30-50	NP-10
	30-60	Very gravelly sandy loam, cobbly sandy loam, gravelly fine sand, gravelly loamy sand, very fine sandy loam	SC-SM, GP, SM	A-4, A-1	0-15	NP-5
Typic Aquiturbels, outwash plains-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-7	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	7-12	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	12-22	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	22-31	Permanently frozen loamy sand, permanently frozen silt loam			---	---
	31-60	Permanently frozen material			---	---
Typic Haplothels, outwash plains-----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-10	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	10-13	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	13-28	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	28-60	Permanently frozen sandy loam, permanently frozen silt loam, permanently frozen very fine sandy loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
685: Typic Dystricrypts, high moraines-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-3	Gravelly silt loam, mucky silt loam, silt loam, very fine sandy loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	3-4	Gravelly loamy sand, gravelly sandy loam, very gravelly sandy loam	SM, SC-SM	A-2-4, A-1	0-15	NP-5
	4-9	Gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand, extremely stony coarse sand	GP, SC-SM, SM	A-1, A-2-4	0-15	NP-5
	9-60	Gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand, extremely stony coarse sand	GM, GP, SC-SM	A-2-4, A-1	0-5	NP-5
Typic Cryaquepts, high moraines-----	0-4	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	4-12	Gravelly loam, gravelly sandy loam, gravelly loamy sand, cobbly loam, very cobbly loam, cobbly loamy sand, very cobbly loamy sand	SM, SC-SM	A-2, A-1	0-15	NP-5
	12-60	Gravelly sandy loam, gravelly loamy coarse sand	SM, SC-SM	A-2, A-1	0-15	NP-5
Aquic Dystricrypts, high moraines-----	0-2	Slightly decomposed plant material, moderately decomposed plant material, highly decomposed plant material	OL, SM	A-8	---	---
	2-4	Very fine sandy loam, silt loam	ML	A-5, A-4	30-50	NP-5
	4-16	Sandy loam, gravelly silt loam, gravelly sandy loam, gravelly loamy sand, gravelly very fine sandy loam	CL-ML, SM	A-4, A-2, A-1	0-15	NP-5
	16-60	Cobbly sand, very gravelly sandy loam, gravelly loamy sand, very gravelly very fine sandy loam	GC-GM, GM, GW-GM	A-4, A-1	0-15	NP-5
Ruptic Histoturbels, high moraines-----	0-5	Peat	PT	A-8	---	---
	5-8	Mucky peat	PT	A-8	---	---
	8-10	Permanently frozen silt loam, permanently frozen mucky silt loam, permanently frozen very fine sandy loam	OL, SM	A-4	---	---
	10-11	Permanently frozen gravelly sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	11-60	Permanently frozen coarse sand, permanently frozen loamy coarse sand, permanently frozen gravelly sandy loam			---	---
686: Typic Dystricrypts, moraines-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-5	Gravelly silt loam, very fine sandy loam, mucky silt loam, silt loam	ML, OL, SM	A-4, A-1	30-40	NP-5
	5-8	Very fine sandy loam, silt loam, sandy loam	SM, ML	A-4, A-2	0-40	NP-5
	8-24	Gravelly sandy loam, very stony very fine sandy loam, gravelly fine sandy loam, fine sandy loam	SM, GM, SC-SM	A-1, A-4	0-15	NP-5
	24-60	Gravelly sandy loam, extremely gravelly loamy coarse sand, extremely stony loamy sand, very gravelly fine sandy loam	GP-GM, SC-SM, SM	A-1, A-4	0-15	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plas- ticity index
			Unified	AASHTO		
	In.				Pct.	
686: Typic Cryaquepts, moraines -----	0-5	Fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	5-41	Fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	41-60	Gravelly loam, fine sandy loam, silt loam, very gravelly silt loam, very gravelly very fine sandy loam	SM, ML, GM	A-4, A-1	30-40	NP-5
Typic Histoturbels, moraines -----	0-9	Mucky peat	PT	A-8	---	---
	9-15	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	15-19	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	19-28	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	28-60	Permanently frozen material			---	---
687: Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Silt loam, mucky silt loam, very fine sandy loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Silt loam, very gravelly coarse sand, gravelly sandy loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Very gravelly coarse sand, sandy loam, gravelly loamy sand	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	GP, SW-SM, SM	A-1	0-0	NP
Typic Haplocryands, ridges -----	0-3	Slightly decomposed plant material	PT	A-8	---	---
	3-23	Silt loam, gravelly silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	23-60	Very gravelly loamy coarse sand, gravelly loamy sand, extremely gravelly coarse sand, very gravelly coarse sand	GP, GW-GM, SM	A-1	0-0	NP
Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen very fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam			---	---
	20-60	Permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand, permanently frozen sandy loam, permanently frozen gravelly loam			---	---
688: Typic Dystrocryepts, moraines -----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-5	Gravelly silt loam, very fine sandy loam, mucky silt loam, silt loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	5-8	Silt loam, very fine sandy loam, sandy loam	SM, ML	A-4, A-2	0-40	NP-5
	8-24	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam, very stony very fine sandy loam	SM, GM, SC-SM	A-4, A-1	0-15	NP-5
	24-60	Gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly loamy coarse sand, extremely stony loamy sand	GP-GM, SC-SM, SM	A-4, A-1	0-15	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
688: Typic Haploturbels, moraines -----	0-4	Slightly decomposed plant material	PT	A-8	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-8	Very fine sandy loam, mucky silt loam, silt loam, gravelly silt loam	ML, OL, SM	A-4, A-1	30-40	NP-5
	8-11	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	11-16	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen sandy loam			---	---
	16-60	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen sandy loam			---	---
Typic Aquiturbels, moraines -----	0-6	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-19	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	19-24	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam			---	---
689: Typic Dystrocryepts, moraines -----	0-4	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-5	Gravelly silt loam, very fine sandy loam, mucky silt loam, silt loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	5-8	Very fine sandy loam, silt loam, sandy loam	SM, ML	A-2, A-4	0-40	NP-5
	8-24	Very stony very fine sandy loam, fine sandy loam, gravelly fine sandy loam, gravelly sandy loam	SM, GM, SC-SM	A-1, A-4	0-15	NP-5
	24-60	Gravelly sandy loam, very gravelly fine sandy loam, extremely stony loamy sand, extremely gravelly loamy coarse sand	GP-GM, SC-SM, SM	A-1, A-4	0-15	NP-5
Typic Histoturbels, moraines -----	0-9	Mucky peat	PT	A-8	---	---
	9-15	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	15-19	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	19-28	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	28-60	Permanently frozen material			---	---
690: Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Gravelly silt loam, very fine sandy loam, mucky silt loam, silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Very gravelly loamy coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly coarse sand	SM, GP, SW-SM	A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
690: Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen gravelly loam, permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly loamy coarse sand, permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
691: Typic Dystrocryepts, high moraines-----	0-2	Moderately decomposed plant material	PT	A-8	---	---
	2-3	Very fine sandy loam, mucky silt loam, silt loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	3-4	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam	SM, SC-SM	A-2-4, A-1	0-15	NP-5
	4-9	Very gravelly loamy sand, very gravelly sandy loam, extremely stony coarse sand, gravelly sandy loam	GP, SC-SM, SM	A-1, A-2-4	0-15	NP-5
	9-60	Gravelly sandy loam, extremely stony coarse sand, very gravelly loamy sand, very gravelly sandy loam	GM, GP, SC-SM	A-2-4, A-1	0-5	NP-5
Typic Histoturbels, high moraines-----	0-6	Peat	PT	A-8	---	---
	6-11	Mucky peat	PT	A-8	---	---
	11-15	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	15-24	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen loam			---	---
	24-60	Permanently frozen material			---	---
Folists, high moraines -----	0-10	Peat	PT	A-8	---	---
	10-14	Mucky very fine sandy loam, mucky silt loam, mucky extremely stony silt loam	OL, SM	A-5, A-4	25-50	NP-5
	14-60	Stones	GW	A-1-a	---	---
692: Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Very fine sandy loam, silt loam, mucky silt loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand	GP, SW-SM, SM	A-1	0-0	NP

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
692: Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen silt loam, permanently frozen gravelly loam, permanently frozen very fine sandy loam			---	---
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand			---	---
Typic Aquiturbels, ridges -----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-8	Very fine sandy loam, silt loam	ML	A-5, A-4	25-50	3-7
	8-15	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	15-24	Permanently frozen loam, permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen material			---	---
693: Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Very fine sandy loam, gravelly silt loam, silt loam, mucky silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Gravelly loamy sand, extremely gravelly coarse sand, very gravelly coarse sand, very gravelly loamy coarse sand	GP, SW-SM, SM	A-1	0-0	NP
Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen very fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam			---	---
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand			---	---
Typic Cryofluvents, ridges -----	0-6	Slightly decomposed plant material, highly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	6-9	Silt loam, mucky silt loam	ML	A-4	30-40	NP-5
	9-24	Loamy sand, very fine sandy loam, sandy loam, silt loam	CL, CL-ML, SM	A-4	0-30	NP-10
	24-60	Very cobbly coarse sandy loam, extremely gravelly loamy sand, gravelly coarse sand, stratified very fine sandy loam to silt loam, loamy sand	CL-ML, SW-SM, GP	A-4, A-1	0-20	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
694: Typic Dystragelepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam, gravelly sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Gravelly sandy loam, gravelly loamy sand, cobbly silt loam, very cobbly sandy loam, very gravelly sandy loam, gravelly silt loam, loamy very fine sand, very stony sandy loam	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Extremely gravelly coarse sand, very cobbly loamy sand, very stony coarse sand, very gravelly loamy sand, very gravelly coarse sandy loam, extremely cobbly coarse sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5
Aquic Dystragelepts, mountains-----	0-5	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	5-10	Mucky silt loam, mucky loamy coarse sand	OL, SM	A-2, A-7, A-5	25-50	NP-7
	10-19	Very gravelly coarse sandy loam, gravelly very fine sandy loam, silt loam, gravelly loam	ML, GP-GM, GM	A-1, A-4	0-40	NP-5
	19-60	Very gravelly coarse sand, gravelly loamy coarse sand, very gravelly coarse sandy loam	GC-GM, GM, GW-GM	A-1, A-4	0-5	NP-5
Orthels, mountains-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-7	Highly decomposed plant material	OL, SM	A-8	---	---
	7-9	Silt loam, mucky silt loam, very fine sandy loam	OL, ML	A-4	30-40	NP-5
	9-12	Very fine sandy loam, silt loam, very cobbly very fine sandy loam, gravelly loam, sandy loam	SM, CL-ML	A-4, A-1	0-15	NP-5
	12-60	Permanently frozen gravelly loam, permanently frozen very cobbly very fine sandy loam, permanently frozen extremely gravelly coarse sand, permanently frozen extremely gravelly loamy coarse sand, permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly very fine sandy loam			---	---
695: Typic Dystragelepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-6	Gravelly sandy loam, mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Very gravelly sandy loam, cobbly silt loam, loamy very fine sand, gravelly silt loam, gravelly sandy loam, gravelly loamy sand, very stony sandy loam, very cobbly sandy loam	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Very stony coarse sand, extremely gravelly coarse sand, very gravelly loamy sand, very gravelly coarse sandy loam, very cobbly loamy sand, extremely cobbly coarse sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
695: Aquic Dystrocryepts, mountains-----	0-5	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	5-10	Mucky loamy coarse sand, mucky silt loam	OL, SM	A-7, A-2, A-5	25-50	NP-7
	10-19	Very gravelly coarse sandy loam, silt loam, gravelly very fine sandy loam, gravelly loam	ML, GP-GM, GM	A-4, A-1	0-40	NP-5
	19-60	Very gravelly coarse sandy loam, gravelly loamy coarse sand, very gravelly coarse sand	GC-GM, GM, GW-GM	A-1, A-4	0-5	NP-5
Typic Haplothels, mountains-----	0-4	Moderately decomposed plant material	PT	A-8	---	---
	4-5	Mucky silt loam, very fine sandy loam, silt loam	OL, SM	A-4	30-40	NP-5
	5-7	Silt loam, gravelly sandy loam, gravelly loamy sand	ML, SM	A-4, A-1	30-40	NP-5
	7-15	Gravelly sandy loam, cobbly loamy sand, fine sand	SM, SP-SM, SC-SM	A-4, A-1	0-15	NP-5
	15-60	Permanently frozen gravelly sand, permanently frozen loamy sand, permanently frozen fine sand			---	---
Ruptic Histoturbels, mountains-----	0-12	Peat	PT	A-8	---	---
	12-14	Mucky peat	PT	A-8	---	---
	14-17	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	17-20	Permanently frozen silt loam, permanently frozen stony silt loam, permanently frozen very fine sandy loam			---	---
	20-39	Permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen stony sandy loam			---	---
	39-60	Permanently frozen material			---	---
696: Typic Dystrogelepts, mountains-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam, gravelly sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Very gravelly sandy loam, loamy very fine sand, gravelly silt loam, gravelly sandy loam, gravelly loamy sand, cobbly silt loam, very stony sandy loam, very cobbly sandy loam	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Extremely gravelly coarse sand, very gravelly loamy sand, very gravelly coarse sandy loam, extremely cobbly coarse sand, very stony coarse sand, very cobbly loamy sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5
Lithic Cryofolists, mountains-----	0-8	Peat, mucky peat	PT	A-8	---	---
	8-10	Mucky silt loam, silt loam	ML, OL, SM	A-4	30-40	NP-5
	10-60	Bedrock			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
697: Typic Dystrogelepts, mountains-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-6	Mucky silt loam, gravelly sandy loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam, gravelly silt loam, loamy very fine sand, very cobbly sandy loam, very stony sandy loam, cobbly silt loam	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Extremely cobbly coarse sand, very gravelly coarse sandy loam, very gravelly loamy sand, extremely gravelly coarse sand, very stony coarse sand, very cobbly loamy sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5
Typic Cryaquepts, mountains-----	0-3	Highly decomposed plant material, moderately decomposed plant material	OL, SM	A-8	---	---
	3-8	Very gravelly coarse sandy loam, gravelly sandy loam, very gravelly loamy coarse sand, silt loam	GM, GP-GM, CL-ML	A-4, A-1	0-20	NP-5
	8-60	Gravelly sandy loam, silt loam, very gravelly coarse sand, very cobbly sandy loam	CL-ML, GP, GW	A-1, A-4	0-20	NP-5
Humic Dystrocryepts, mountains-----	0-4	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-4, A-5	25-50	NP-5
	4-11	Silt loam, mucky silt loam, very fine sandy loam, gravelly silt loam	OL, SM, ML	A-4, A-1	30-40	NP-5
	11-27	Gravelly sandy loam, very cobbly sandy loam, very gravelly loamy sand, very stony coarse sandy loam, very cobbly loamy coarse sand	CL-ML, SM, SP-SM	A-4, A-1	0-15	NP-5
	27-60	Very gravelly coarse sandy loam, very gravelly loamy sand, very cobbly loamy sand, extremely gravelly coarse sand	GM, GP, SC-SM	A-1, A-2	0-5	NP-5
698: Typic Haplothels, high moraines-----	0-6	Slightly decomposed plant material	PT	A-8	---	---
	6-10	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	10-15	Permanently frozen extremely cobbly very fine sandy loam, permanently frozen very fine sandy loam, permanently frozen very cobbly silt loam, permanently frozen fine sandy loam			---	---
	15-60	Permanently frozen gravelly coarse sandy loam, permanently frozen gravelly loamy sand, permanently frozen sandy loam			---	---
Typic Aquiturbels, high moraines-----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-11	Extremely gravelly sandy loam, loamy sand	SM, SC-SM, GP-GM	A-2, A-4, A-1	0-15	NP-5
	11-22	Silt loam, very fine sandy loam, gravelly loam	SM, ML	A-4, A-2	25-35	NP-10
	22-24	Permanently frozen very fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam			---	---
	24-60	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen gravelly loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
698: Ruptic Histoturbels, high moraines-----	0-5	Peat	PT	A-8	---	---
	5-8	Mucky peat	PT	A-8	---	---
	8-10	Permanently frozen silt loam, permanently frozen mucky silt loam, permanently frozen very fine sandy loam	OL, SM	A-4	---	---
	10-11	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen gravelly sandy loam			---	---
	11-60	Permanently frozen coarse sand, permanently frozen loamy coarse sand, permanently frozen gravelly sandy loam			---	---
699: Typic Haploturbels, mountains-----	0-4	Moderately decomposed plant material	PT	A-8	---	---
	4-5	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	3-7
	5-19	Fine sandy loam, silt loam, very fine sandy loam	SM, ML	A-4	0-30	NP-5
	19-25	Permanently frozen fine sandy loam, permanently frozen very gravelly loamy sand, permanently frozen silt loam, permanently frozen very fine sandy loam	GM, ML	A-4, A-1	---	---
	25-60	Permanently frozen material			---	---
Typic Cryaquepts, mountains-----	0-3	Moderately decomposed plant material, highly decomposed plant material	OL, SM	A-8	---	---
	3-8	Gravelly sandy loam, very gravelly loamy coarse sand, very gravelly coarse sandy loam, silt loam	GM, GP-GM, CL-ML	A-4, A-1	0-20	NP-5
	8-60	Very gravelly coarse sand, silt loam, gravelly sandy loam, very cobbly sandy loam	CL-ML, GP, GW	A-1, A-4	0-20	NP-5
Typic Dystroglepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-6	Gravelly sandy loam, mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Very gravelly sandy loam, cobbly silt loam, gravelly silt loam, very cobbly sandy loam, very stony sandy loam, loamy very fine sand, gravelly loamy sand, gravelly sandy loam	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Very cobbly loamy sand, very stony coarse sand, extremely gravelly coarse sand, very gravelly loamy sand, very gravelly coarse sandy loam, extremely cobbly coarse sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5
700: Typic Haploturbels, outwash plains-----	0-2	Slightly decomposed plant material	PT	A-8	---	---
	2-9	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	9-14	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	14-20	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	20-24	Permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen sandy loam			---	---
	24-60	Permanently frozen material			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plas- ticity index
			Unified	AASHTO		
	In.				Pct.	
700: Typic Histoturbels, outwash plains-----	0-7	Peat	PT	A-8	---	---
	7-10	Mucky peat	PT	A-8	---	---
	10-13	Mucky silt loam, mucky very fine sandy loam	OH, OL	A-5, A-4	25-67	NP-5
	13-18	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	18-20	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	20-60	Permanently frozen material			---	---
Histels, outwash plains-----	0-20	Mucky peat	PT	A-8	---	---
	20-24	Silt loam, mucky silt loam, very fine sandy loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	24-27	Permanently frozen silt loam			---	---
	27-34	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	34-60	Permanently frozen material			---	---
701: Typic Historthels, outwash plains-----	0-7	Peat	PT	A-8	---	---
	7-12	Mucky peat	PT	A-8	---	---
	12-14	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	14-24	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen material			---	---
Typic Histoturbels, outwash plains-----	0-7	Peat	PT	A-8	---	---
	7-10	Mucky peat	PT	A-8	---	---
	10-13	Mucky very fine sandy loam, mucky silt loam	OH, OL	A-5, A-4	25-67	NP-5
	13-18	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	18-20	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	20-60	Permanently frozen material			---	---
Terric Fibristels, outwash plains-----	0-20	Peat	PT	A-8	---	---
	20-24	Very fine sandy loam, mucky silt loam, silt loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	24-27	Permanently frozen silt loam			---	---
	27-34	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	34-60	Permanently frozen material			---	---
702: Typic Histoturbels, river valleys-----	0-7	Mucky peat	PT	A-8	---	---
	7-12	Peat	PT	A-8	---	---
	12-15	Silt loam, mucky silt loam, very fine sandy loam	ML, OL	A-4	30-40	NP-5
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
703:						
Typic Histoturbels, high moraines-----	0-6	Peat	PT	A-8	---	---
	6-11	Mucky peat	PT	A-8	---	---
	11-15	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	15-24	Permanently frozen loam, permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	24-60	Permanently frozen material			---	---
Glacic Aquiturbels, high moraines-----	0-4	Highly decomposed plant material	OL, SM	A-8	---	---
	4-14	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	14-16	Permanently frozen silt loam, permanently frozen very fine sandy loam		A-4	---	---
	16-60	Permanently frozen water			---	---
Histels, high moraines-----	0-4	Mucky peat	PT	A-8	---	---
	4-22	Muck	OL, SM	A-8	---	---
	22-28	Permanently frozen mucky silt loam, permanently frozen mucky very fine sandy loam	OH, OL	A-5, A-4	---	---
	28-60	Permanently frozen material			---	---
704:						
Typic Histoturbels, mountains-----	0-3	Peat	PT	A-8	---	---
	3-6	Mucky peat	PT	A-8	---	---
	6-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-18	Very fine sandy loam, silt loam, loam	ML, SM	A-4	30-40	NP-5
	18-60	Permanently frozen silt loam, permanently frozen gravelly silt loam, permanently frozen loam, permanently frozen very fine sandy loam			---	---
Histels, mountains-----	0-3	Mucky peat, peat	PT	A-8	---	---
	3-15	Muck	OL, SM	A-8	---	---
	15-20	Permanently frozen highly decomposed plant material			---	---
	20-24	Permanently frozen mucky silt loam, permanently frozen mucky fine sand			---	---
	24-60	Permanently frozen material			---	---
Typic Dystroglepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	PT	A-8	---	---
	4-6	Mucky silt loam, gravelly sandy loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	9-18	Loamy very fine sand, gravelly silt loam, cobbly silt loam, very stony sandy loam, very cobbly sandy loam, very gravelly sandy loam, gravelly sandy loam, gravelly loamy sand	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Very cobbly loamy sand, very gravelly coarse sandy loam, extremely gravelly coarse sand, very gravelly loamy sand, very stony coarse sand, extremely cobbly coarse sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
705: Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen silt loam, permanently frozen gravelly loam, permanently frozen very fine sandy loam			---	---
	20-60	Permanently frozen gravelly loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand, permanently frozen very fine sandy loam, permanently frozen very gravelly coarse sandy loam, permanently frozen sandy loam			---	---
Typic Aquiturbels, ridges -----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-8	Silt loam, very fine sandy loam	ML	A-5, A-4	25-50	3-7
	8-15	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	15-24	Permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen loam			---	---
	24-60	Permanently frozen material			---	---
Terric Fibristels, ridges -----	0-12	Peat	PT	A-8	---	---
	12-17	Permanently frozen mucky peat			---	---
	17-24	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen material			---	---
706: Typic Histoturbels, river valleys-----	0-7	Mucky peat	PT	A-8	---	---
	7-12	Peat	PT	A-8	---	---
	12-15	Mucky silt loam, very fine sandy loam, silt loam	ML, OL	A-4	30-40	NP-5
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
Typic Dystrocryepts, river valleys-----	0-7	Moderately decomposed plant material	PT	A-8	---	---
	7-10	Silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	10-24	Silt loam, very fine sandy loam	ML, SM	A-4	30-40	NP-5
	24-60	Very gravelly coarse sand, loamy sand, gravelly coarse sand, gravelly loamy sand, cobbly loamy sand	GP, SC-SM, SW-SM	A-1	0-5	NP-5
707: Typic Histoturbels, hills -	6-11	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	11-16	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	16-21	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	21-60	Permanently frozen material			---	---
Typic Dystrocryepts, hills	6-8	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	8-12	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	12-24	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	24-28	Extremely gravelly coarse sandy loam, gravelly very fine sandy loam, very gravelly sandy loam, very gravelly very fine sandy loam	GM, GP-GM, GC-GM	A-1, A-4	0-10	NP-5
	28-60	Bedrock			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
708: Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen gravelly loam, permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	20-60	Permanently frozen very fine sandy loam, permanently frozen gravelly loamy coarse sand, permanently frozen very gravelly coarse sandy loam, permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen silt loam			---	---
Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Very fine sandy loam, mucky silt loam, silt loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Sandy loam, gravelly loamy sand, very gravelly coarse sand	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	GP, SW-SM, SM	A-1	0-0	NP
709: Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen silt loam, permanently frozen gravelly loam, permanently frozen very fine sandy loam			---	---
	20-60	Permanently frozen gravelly loamy coarse sand, permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Silt loam, mucky silt loam, very fine sandy loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Very gravelly coarse sand, silt loam, gravelly sandy loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Extremely gravelly coarse sand, very gravelly coarse sand, very gravelly loamy coarse sand, gravelly loamy sand	GP, SW-SM, SM	A-1	0-0	NP
Terric Fibristels, ridges -----	0-12	Peat	PT	A-8	---	---
	12-17	Permanently frozen mucky peat			---	---
	17-24	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	24-60	Permanently frozen material			---	---

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
710: Typic Histoturbels, ridges -----	0-10	Peat	PT	A-8	---	---
	10-11	Mucky peat	PT	A-8	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	13-20	Permanently frozen very fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam			---	---
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand			---	---
Typic Dystricrypts, ridges -----	0-3	Moderately decomposed plant material	PT	A-8	---	---
	3-6	Mucky silt loam, silt loam, very fine sandy loam, gravelly silt loam	ML, GM, OL	A-4, A-1	30-40	NP-5
	6-13	Silt loam, very gravelly coarse sand, gravelly sandy loam	ML, GP-GM	A-4, A-1	30-40	NP-5
	13-18	Gravelly loamy sand, very gravelly coarse sand, sandy loam	SM, CL-ML, GP-GM	A-4, A-1	0-15	NP-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	GP, SW-SM, SM	A-1	0-0	NP
Typic Historthels, ridges -----	0-9	Mucky peat	PT	A-8	---	---
	9-11	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	11-15	Silt loam, sandy loam, very fine sandy loam	ML, SM	A-4, A-2	30-40	NP-5
	15-24	Permanently frozen silt loam, permanently frozen sandy loam, permanently frozen very fine sandy loam			---	---
	24-60	Permanently frozen very gravelly coarse sand, permanently frozen sandy loam, permanently frozen gravelly loamy sand			---	---
711: Typic Histoturbels, mountains -----	0-3	Peat	PT	A-8	---	---
	3-6	Mucky peat	PT	A-8	---	---
	6-13	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	13-18	Silt loam, very fine sandy loam, loam	ML, SM	A-4	30-40	NP-5
	18-60	Permanently frozen gravelly silt loam, permanently frozen loam, permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
Typic Dystrigelepts, mountains -----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-6	Gravelly sandy loam, mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	6-9	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	9-18	Cobbly silt loam, very gravelly sandy loam, very cobbly sandy loam, very stony sandy loam, loamy very fine sand, gravelly silt loam, gravelly sandy loam, gravelly loamy sand	GM, SM, ML	A-2, A-4, A-1	0-30	NP-5
	18-60	Extremely cobbly coarse sand, very gravelly coarse sandy loam, very cobbly loamy sand, very stony coarse sand, very gravelly loamy sand, extremely gravelly coarse sand	GM, GP, GC-GM	A-2, A-1	0-15	NP-5

Table 5. Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Liquid limit	Plasticity index
			Unified	AASHTO		
	In.				Pct.	
712: Typic Histoturbels, moraines -----	0-9	Mucky peat	PT	A-8	---	---
	9-15	Mucky silt loam, mucky very fine sandy loam	OL, SM	A-5, A-4	25-50	NP-5
	15-19	Silt loam, very fine sandy loam	ML	A-4	30-40	NP-5
	19-28	Permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
	28-60	Permanently frozen material			---	---
Typic Dystrocryepts, moraines -----	0-4	Moderately decomposed plant material, slightly decomposed plant material	PT	A-8	---	---
	4-5	Gravelly silt loam, silt loam, mucky silt loam, very fine sandy loam	ML, OL, SM	A-4, A-1	30-40	NP-5
	5-8	Sandy loam, silt loam, very fine sandy loam	SM, ML	A-4, A-2	0-40	NP-5
	8-24	Very stony very fine sandy loam, gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM, GM, SC-SM	A-4, A-1	0-15	NP-5
	24-60	Gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly loamy coarse sand, extremely stony loamy sand	GP-GM, SC-SM, SM	A-4, A-1	0-15	NP-5
Water -----	---	---	---	---	---	---
713: Typic Histoturbels, outwash plains-----	0-7	Peat	PT	A-8	---	---
	7-10	Mucky peat	PT	A-8	---	---
	10-13	Mucky very fine sandy loam, mucky silt loam	OH, OL	A-5, A-4	25-67	NP-5
	13-18	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	18-20	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	20-60	Permanently frozen material			---	---
713: Typic Haplothels, outwash plains-----	0-5	Slightly decomposed plant material	PT	A-8	---	---
	5-10	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	10-13	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	13-28	Very fine sandy loam, silt loam	ML	A-4	30-40	NP-5
	28-60	Permanently frozen sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam			---	---
Terric Hemistels, outwash plains-----	0-20	Mucky peat	PT	A-8	---	---
	20-24	Mucky silt loam, very fine sandy loam, silt loam	ML, OL, SM	A-1, A-4	30-40	NP-5
	24-27	Permanently frozen silt loam			---	---
	27-34	Permanently frozen silt loam, permanently frozen very fine sandy loam			---	---
	34-60	Permanently frozen material			---	---
714: Typic Histoturbels, mountains-----	0-3	Peat	PT	A-8	---	---
	3-6	Mucky peat	PT	A-8	---	---
	6-13	Mucky very fine sandy loam, mucky silt loam	OL, SM	A-5, A-4	25-50	NP-5
	13-18	Silt loam, very fine sandy loam, loam	ML, SM	A-4	30-40	NP-5
	18-60	Permanently frozen loam, permanently frozen very fine sandy loam, permanently frozen gravelly silt loam, permanently frozen silt loam			---	---

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
602: Audrey-----	In.										
	0-1	Slightly decomposed plant material, moderately decomposed plant material	0	---	---	---	---	---	---	---	---
	1-8	Silt loam	0	0	100	100	85-95	60-80	28-45	53-70	2-7
	8-17	Silt loam, very fine sandy loam	0	0	87-100	83-100	71-95	38-80	28-65	33-70	2-7
	17-28	Cobbly very fine sandy loam, silt loam, gravelly silt loam, very fine sandy loam	0	0-20	60-90	55-85	55-80	30-66	28-65	33-70	2-7
	28-60	Very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	0	0-20	35-60	20-55	10-35	5-25	55-75	23-43	2-7
Butchlake, gently sloping-----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Mucky silt loam, silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6
Typic Aquiturbels -----	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7
603: Audrey-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	0	---	---	---	---	---	---	---	---
	1-8	Silt loam	0	0	100	100	85-95	60-80	28-45	53-70	2-7
	8-17	Very fine sandy loam, silt loam	0	0	87-100	83-100	71-95	38-80	28-65	33-70	2-7
	17-28	Gravelly silt loam, silt loam, cobbly very fine sandy loam, very fine sandy loam	0	0-20	60-90	55-85	55-80	30-66	28-65	33-70	2-7
	28-60	Very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	0	0-20	35-60	20-55	10-35	5-25	55-75	23-43	2-7

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
603: Typic Aquiturbels -----	In.										
	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7
604: Babel-----	0-2	Moderately decomposed plant material, slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Mucky silt loam, silt loam	0	0	100	100	50-100	45-90	15-45	50-80	2-7
	4-8	Gravelly silt loam, silt loam	0	0	65-85	55-85	50-75	40-75	15-45	50-80	2-7
	8-18	Gravelly sandy loam, very gravelly sandy loam	0	0	55-85	40-75	25-60	20-45	50-75	15-48	2-7
	18-25	Gravelly sandy loam, very stony sandy loam	0-30	0-15	60-90	45-85	35-70	20-50	50-75	15-48	2-10
	25-60	Permanently frozen gravelly sandy loam, permanently frozen very gravelly sandy loam	0-15	0-15	45-75	30-70	20-60	15-45	50-75	15-48	2-10
605: Babel-----	0-2	Slightly decomposed plant material, moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Silt loam, mucky silt loam	0	0	100	100	50-100	45-90	15-45	50-80	2-7
	4-8	Gravelly silt loam, silt loam	0	0	65-85	55-85	50-75	40-75	15-45	50-80	2-7
	8-18	Gravelly sandy loam, very gravelly sandy loam	0	0	55-85	40-75	25-60	20-45	50-75	15-48	2-7
	18-25	Gravelly sandy loam, very stony sandy loam	0-30	0-15	60-90	45-85	35-70	20-50	50-75	15-48	2-10
	25-60	Permanently frozen very gravelly sandy loam, permanently frozen gravelly sandy loam	0-15	0-15	45-75	30-70	20-60	15-45	50-75	15-48	2-10
605: Butchlake -----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Silt loam, mucky silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
606: Babel-----	In.										
	0-2	Moderately decomposed plant material, slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Silt loam, mucky silt loam	0	0	100	100	50-100	45-90	15-45	50-80	2-7
	4-8	Gravelly silt loam, silt loam	0	0	65-85	55-85	50-75	40-75	15-45	50-80	2-7
	8-18	Very gravelly sandy loam, gravelly sandy loam	0	0	55-85	40-75	25-60	20-45	50-75	15-48	2-7
	18-25	Very stony sandy loam, gravelly sandy loam	0-30	0-15	60-90	45-85	35-70	20-50	50-75	15-48	2-10
	25-60	Permanently frozen very gravelly sandy loam, permanently frozen gravelly sandy loam	0-15	0-15	45-75	30-70	20-60	15-45	50-75	15-48	2-10
Butchlake-----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Silt loam, mucky silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, very cobbly sandy loam, gravelly sandy loam	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6
607: Butchlake-----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Mucky silt loam, silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, gravelly sandy loam, very cobbly sandy loam	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6
608: Butchlake-----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Mucky silt loam, silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand, gravelly sandy loam	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
609: Butchlake, moderately steep -----	In.										
	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Silt loam, mucky silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6
Nomercy Lake -----	0-2	Slightly decomposed plant material, moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Silt loam, very fine sandy loam	0	0	100	100	90-98	55-80	25-60	36-70	4-8
	4-13	Very gravelly sandy loam, gravelly fine sandy loam	0	0-15	40-85	25-80	20-70	10-45	55-75	23-40	2-7
	13-60	Very cobbly loamy sand, extremely gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loamy sand, very gravelly fine sandy loam	0	0-30	35-70	20-60	15-45	5-30	60-85	15-30	0-5
Butchlake, very steep ---	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Silt loam, mucky silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Very gravelly sandy loam, very cobbly sandy loam, gravelly loam, extremely gravelly coarse sandy loam, cobbly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
610: Butchlake, gently sloping -----	In.										
	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Mucky silt loam, silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly loamy sand, gravelly sandy loam, very cobbly sandy loam	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6
Southpaw -----	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-13	Silt loam, very fine sandy loam	0	0	100	100	85-95	55-85	20-60	35-75	5-10
	13-22	Fine sandy loam, sandy loam	0	0	100	100	70-80	35-50	55-70	25-45	0-5
	22-36	Gravelly fine sandy loam, gravelly sandy loam, sandy loam, fine sandy loam	0	0	65-85	55-80	40-65	20-40	55-70	25-45	0-5
	36-60	Very gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	0	0	35-55	20-45	15-35	5-20	65-90	10-30	0-5
611: Butchlake -----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Silt loam, mucky silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
611: Southpaw -----	In.										
	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-13	Silt loam, very fine sandy loam	0	0	100	100	85-95	55-85	20-60	35-75	5-10
	13-22	Fine sandy loam, sandy loam	0	0	100	100	70-80	35-50	55-70	25-45	0-5
	22-36	Gravelly sandy loam, sandy loam, fine sandy loam, gravelly fine sandy loam	0	0	65-85	55-80	40-65	20-40	55-70	25-45	0-5
	36-60	Very gravelly loamy sand, very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly loamy sand	0	0	35-55	20-45	15-35	5-20	65-90	10-30	0-5
612: Butchlake, strongly sloping -----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Silt loam, mucky silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, very gravelly sandy loam, gravelly loam, very cobbly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Gravelly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly loamy sand, very cobbly sandy loam	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6
Southpaw -----	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-13	Very fine sandy loam, silt loam	0	0	100	100	85-95	55-85	20-60	35-75	5-10
	13-22	Sandy loam, fine sandy loam	0	0	100	100	70-80	35-50	55-70	25-45	0-5
	22-36	Gravelly fine sandy loam, fine sandy loam, sandy loam, gravelly sandy loam	0	0	65-85	55-80	40-65	20-40	55-70	25-45	0-5
	36-60	Extremely gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand	0	0	35-55	20-45	15-35	5-20	65-90	10-30	0-5
613: Chena -----	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-9	Stratified fine sand to silt loam, fine sandy loam, fine sand	0	0	85-100	80-100	50-82	14-59	45-90	10-50	0-5
	9-60	Very gravelly coarse sand, very gravelly sand, gravelly sand	0	0	45-69	30-62	20-44	2-13	85-100	0-15	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
614: Chena -----	In.										
	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-9	Stratified fine sand to silt loam, fine sand, fine sandy loam	0	0	85-100	80-100	50-82	14-59	45-90	10-50	0-5
	9-60	Very gravelly sand, gravelly sand, very gravelly coarse sand	0	0	45-69	30-62	20-44	2-13	85-100	0-15	0-5
615: Chetlake -----	0-3	Moderately decomposed plant material, slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	3-20	Very fine sandy loam, loam, sandy loam	0	0-8	90-100	85-100	80-95	45-75	40-70	23-45	7-15
	20-26	Silt loam, very fine sandy loam	0	0	90-100	85-100	80-95	41-80	28-70	28-70	2-7
	26-31	Very cobbly sandy loam, very gravelly loam, gravelly sandy loam, gravelly loam, very cobbly loam	0-20	10-20	60-80	50-75	40-65	20-50	40-70	23-45	7-15
	31-60	Permanently frozen gravelly sandy loam, permanently frozen very stony loam, permanently frozen very cobbly sandy loam, permanently frozen very cobbly loam, permanently frozen very gravelly loam	10-20	10-20	60-80	50-75	40-65	20-50	40-70	23-45	7-15
616: Donnelly-----	0-2	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-6	Gravelly silt loam, silt loam	0-5	0-10	75-98	60-95	50-90	40-75	25-45	55-75	0-5
	6-12	Gravelly silt loam, gravelly sandy loam	0-5	5-15	65-85	60-80	50-75	30-65	25-65	35-75	0-5
	12-60	Very gravelly sand	0	5-15	50-75	40-65	20-40	1-8	90-100	0-5	0-5
617: Donnelly, very steep ----	0-2	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-6	Silt loam, gravelly silt loam	0-5	0-10	75-98	60-95	50-90	40-75	25-45	55-75	0-5
	6-12	Gravelly silt loam, gravelly sandy loam	0-5	5-15	65-85	60-80	50-75	30-65	25-65	35-75	0-5
	12-60	Very gravelly sand	0	5-15	50-75	40-65	20-40	1-8	90-100	0-5	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
624: Histels, mountains-----	In.										
	0-3	Peat, mucky peat	0	0	---	---	---	---	---	---	---
	3-15	Muck	0	0	---	---	---	---	---	---	---
	15-20	Permanently frozen highly decomposed plant material	0	0	---	---	---	---	---	---	---
	20-24	Permanently frozen mucky fine sand, permanently frozen mucky silt loam	0	0	100	100	80-90	10-63	40-100	0-60	0-3
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Orthels, mountains-----	0-2	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-7	Highly decomposed plant material	0	0	---	---	---	---	---	---	---
	7-9	Silt loam, mucky silt loam, very fine sandy loam	0	0	100	78-100	69-93	53-72	22-65	30-75	3-7
	9-12	Very cobbly very fine sandy loam, gravelly loam, sandy loam, very fine sandy loam, silt loam	0	0-10	70-100	65-100	42-88	19-77	25-75	20-75	0-7
	12-60	Permanently frozen extremely gravelly coarse sand, permanently frozen very cobbly very fine sandy loam, permanently frozen gravelly loam, permanently frozen extremely gravelly loamy coarse sand, permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly very fine sandy loam	0	0-30	31-90	14-75	10-70	3-65	40-90	10-45	0-15
Typic Dystroglepts, mountains-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Mucky very fine sandy loam, mucky silt loam, gravelly sandy loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Cobbly silt loam, very gravelly sandy loam, very cobbly sandy loam, very stony sandy loam, loamy very fine sand, gravelly silt loam, gravelly sandy loam, gravelly loamy sand	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Very gravelly loamy sand, very gravelly coarse sandy loam, extremely cobbly coarse sand, extremely gravelly coarse sand, very cobbly loamy sand, very stony coarse sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
625: Histels, high moraines -----	In.										
	0-4	Mucky peat	0	0	---	---	---	---	---	---	---
	4-22	Muck	0	0	---	---	---	---	---	---	---
	22-28	Permanently frozen mucky silt loam, permanently frozen mucky very fine sandy loam	0	0	85-100	80-100	80-100	55-90	20-60	35-77	3-10
	28-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Turbels, high moraines -----	0-6	Peat	0	0	---	---	---	---	---	---	---
	6-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-12	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	83-95	47-83	20-60	35-75	3-10
	12-24	Permanently frozen loam, permanently frozen silt loam, permanently frozen very fine sandy loam	0	0-23	83-100	79-100	62-95	36-82	25-65	35-75	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
626: Histels, high moraines -----	0-4	Mucky peat	0	0	---	---	---	---	---	---	---
	4-22	Muck	0	0	---	---	---	---	---	---	---
	22-28	Permanently frozen mucky silt loam, permanently frozen mucky very fine sandy loam	0	0	85-100	80-100	80-100	55-90	20-60	35-77	3-10
	28-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Cryaquepts, high moraines-----	0-4	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	4-12	Gravelly sandy loam, gravelly loam, cobbly loam, very cobbly loamy sand, cobbly loamy sand, very cobbly loam, gravelly loamy sand	0	0-50	66-84	56-80	39-65	16-47	45-80	15-45	2-10
	12-60	Gravelly loamy coarse sand, gravelly sandy loam	0	0-15	70-77	65-72	41-55	17-36	55-80	15-45	2-7
Typic Dystrocryepts, high moraines-----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-3	Gravelly silt loam, very fine sandy loam, silt loam, mucky silt loam	0	0-20	60-100	55-100	40-93	25-79	22-65	30-75	3-7
	3-4	Gravelly sandy loam, very gravelly sandy loam, gravelly loamy sand	0-12	0-12	60-80	50-75	35-58	13-35	55-85	15-45	0-5
	4-9	Extremely stony coarse sand, gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand	0-36	0-24	38-78	33-76	16-60	4-35	55-95	5-45	0-5
	9-60	Extremely stony coarse sand, very gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam	0-24	0-18	31-70	15-65	8-50	2-30	55-90	5-45	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
627: Histels, river valleys -----	0-13	Peat, mucky peat	0	0	---	---	---	---	---	---	---
	13-18	Mucky peat, muck	0	0	---	---	---	---	---	---	---
	18-60	Permanently frozen very fine sandy loam, permanently frozen fine sandy loam, permanently frozen silt loam	0	0	90-100	88-100	84-99	53-84	22-65	32-75	3-10
Typic Histoturbels, river valleys -----	0-7	Mucky peat	0	0	---	---	---	---	---	---	---
	7-12	Peat	0	0	---	---	---	---	---	---	---
	12-15	Very fine sandy loam, mucky silt loam, silt loam	0	0	100	100	99-100	60-86	22-65	30-75	3-7
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	100	100	97-99	55-83	22-65	30-75	3-10
Typic Historthels, river valleys -----	0-5	Peat	0	0	---	---	---	---	---	---	---
	5-10	Mucky peat	0	0	---	---	---	---	---	---	---
	10-12	Permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	90-100	88-100	74-95	44-84	25-65	35-75	3-10
	12-16	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	90-100	88-100	74-95	44-84	25-65	35-75	3-10
	16-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Aquiturbels, river valleys -----	0-4	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	4-6	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	6-16	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	90-100	88-100	74-95	44-84	20-60	35-75	3-10
	16-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
628: Humic Dystrocryepts, high moraines -----	0-2	Moderately decomposed plant material, slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-12	Very fine sandy loam, silt loam, mucky silt loam	0	0	89-100	86-100	71-93	35-79	22-65	30-75	3-10
	12-60	Extremely stony coarse sand, very gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam, gravelly loamy sand	0-24	0-18	39-80	23-75	15-58	4-37	55-90	5-45	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
628: Aquic Umbrorthels, high moraines-----	In.										
	0-4	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	4-12	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	12-17	Gravelly silt loam	0	8-16	70-80	60-76	50-71	35-60	20-45	50-75	3-10
	17-28	Very gravelly sandy loam, gravelly loamy sand, cobble coarse sandy loam	0	16-20	58-80	50-76	36-61	14-38	55-80	20-45	0-10
	28-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
629: Jarvis -----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	0	0	100	100	90-98	45-70	45-80	20-50	5-10
	6-24	Stratified sand to fine sand to very fine sandy loam	0	0-5	90-100	85-100	70-90	25-60	55-90	10-35	0-10
	24-60	Extremely cobbly sand, very gravelly sand, very cobbly sand	0	15-35	40-70	25-60	20-45	1-10	90-100	0-5	0-5
630: Jarvis -----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	0	0	100	100	90-98	45-70	45-80	20-50	5-10
	6-24	Stratified sand to fine sand to very fine sandy loam	0	0-5	90-100	85-100	70-90	25-60	55-90	10-35	0-10
	24-60	Very gravelly sand, extremely cobbly sand, very cobbly sand	0	15-35	40-70	25-60	20-45	1-10	90-100	0-5	0-5
631: Jarvis -----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-6	Stratified fine sand to silt loam, very fine sandy loam	0	0	100	100	90-98	45-70	45-80	20-50	5-10
	6-24	Stratified sand to fine sand to very fine sandy loam	0	0-5	90-100	85-100	70-90	25-60	55-90	10-35	0-10
	24-60	Very cobbly sand, extremely cobbly sand, very gravelly sand	0	15-35	40-70	25-60	20-45	1-10	90-100	0-5	0-5
Chena -----	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-9	Fine sand, fine sandy loam, stratified fine sand to silt loam	0	0	85-100	80-100	50-82	14-59	45-90	10-50	0-5
	9-60	Gravelly sand, very gravelly sand, very gravelly coarse sand	0	0	45-69	30-62	20-44	2-13	85-100	0-15	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
	In.										
632: Chena -----	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-9	Fine sandy loam, fine sand, stratified fine sand to silt loam	0	0	85-100	80-100	50-82	14-59	45-90	10-50	0-5
	9-60	Gravelly sand, very gravelly coarse sand, very gravelly sand	0	0	45-69	30-62	20-44	2-13	85-100	0-15	0-5
Jarvis -----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	0	0	100	100	90-98	45-70	45-80	20-50	5-10
	6-24	Stratified sand to fine sand to very fine sandy loam	0	0-5	90-100	85-100	70-90	25-60	55-90	10-35	0-10
	24-60	Very cobbly sand, very gravelly sand, extremely cobbly sand	0	15-35	40-70	25-60	20-45	1-10	90-100	0-5	0-5
633: Jarvis -----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-6	Very fine sandy loam, stratified fine sand to silt loam	0	0	100	100	90-98	45-70	45-80	20-50	5-10
	6-24	Stratified sand to fine sand to very fine sandy loam	0	0-5	90-100	85-100	70-90	25-60	55-90	10-35	0-10
	24-60	Extremely cobbly sand, very cobbly sand, very gravelly sand	0	15-35	40-70	25-60	20-45	1-10	90-100	0-5	0-5
Salchaket -----	0-3	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	3-24	Very fine sandy loam	0	0	100	100	90-100	65-75	45-80	10-50	5-10
	24-45	Stratified silt loam to fine sand	0	0	100	95-100	85-95	40-65	45-80	10-50	5-10
	45-60	Very gravelly sand	0	0	40-70	30-55	20-30	5-10	85-100	0-15	0-5
634: Lithic Cryofolists, mountains-----	0-8	Mucky peat, peat	0	0-40	---	---	---	---	---	---	---
	8-10	Mucky silt loam, silt loam	0-25	0-25	100	100	75-90	40-80	22-65	30-75	3-7
	10-60	Bedrock	---	---	---	---	---	---	---	---	---
Typic Cryorthents, mountains-----	0-4	Slightly decomposed plant material, highly decomposed plant material, moderately decomposed plant material	---	0	---	---	---	---	---	---	---
	4-6	Silt loam, coarse sandy loam, loamy coarse sand, coarse sand	0	0	100	100	83-96	31-82	22-84	14-75	2-7
	6-60	Very gravelly loamy sand, extremely gravelly loamy coarse sand, extremely gravelly coarse sand	0-5	7-16	25-60	9-49	4-26	0-14	75-100	0-25	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
636: McKinley, very steep ----	In.										
	0-2	Gravelly silt loam, gravelly loam, gravelly sandy loam, silt loam, gravelly mucky silt loam	0-15	0-15	80-95	70-90	60-85	30-70	28-65	33-70	2-10
	2-12	Extremely stony sandy loam, very gravelly sandy loam, very gravelly loam, extremely gravelly silt loam	10-30	15-80	40-75	25-65	20-60	10-45	28-70	28-70	2-10
	12-26	Extremely stony sandy loam, extremely gravelly loam	15-50	15-40	30-70	10-60	5-55	3-40	42-70	28-48	2-10
	26-30	Extremely cobbly sandy loam, extremely stony sandy loam, extremely stony loam	15-50	15-40	30-70	10-60	5-55	3-40	42-70	28-48	2-10
	30-60	Bedrock	---	---	---	---	---	---	---	---	---
637: Moosehead-----	0-5	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	5-6	Silt loam	0	0	100	100	90-98	65-85	20-40	55-75	5-10
	6-10	Stratified loamy fine sand to silt loam	0	0	100	100	90-98	50-60	53-68	32-45	0-5
	10-60	Very gravelly sand, extremely gravelly sand	0	0-10	31-59	14-48	10-34	1-11	87-100	0-13	0-1
638: Mosquito-----	0-18	Peat	---	---	---	---	---	---	---	---	---
	18-42	Stratified silt loam to loamy fine sand, very fine sandy loam, silt loam	0	0	100	100	90-100	70-95	45-80	10-50	0-10
	42-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
639: Nenana-----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-15	Silt loam, silt	0	0	100	100	90-100	80-95	2-35	55-90	5-10
	15-21	Gravelly silt loam, gravelly silt	0	0	65-80	60-75	55-70	45-65	20-35	55-90	5-10
	21-60	Extremely gravelly sand, very gravelly sand	0	0-11	33-60	16-50	11-36	1-8	87-100	0-8	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
643: Ninchuun-----	In.										
	0-6	Slightly decomposed plant material, moderately decomposed plant material	---	---	---	---	---	---	---	---	---
	6-12	Mucky silt loam, silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	12-16	Silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	16-20	Silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	20-32	Permanently frozen silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	32-60	Permanently frozen gravelly sandy loam, permanently frozen gravelly fine sandy loam, permanently frozen gravelly silt loam	0	0	65-80	55-75	30-60	10-50	35-70	30-55	0-10
644: Ninchuun-----	0-6	Slightly decomposed plant material, moderately decomposed plant material	---	---	---	---	---	---	---	---	---
	6-12	Silt loam, mucky silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	12-16	Silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	16-20	Silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	20-32	Permanently frozen silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	32-60	Permanently frozen gravelly sandy loam, permanently frozen gravelly fine sandy loam, permanently frozen gravelly silt loam	0	0	65-80	55-75	30-60	10-50	35-70	30-55	0-10
Audrey-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	0	---	---	---	---	---	---	---	---
	1-8	Silt loam	0	0	100	100	85-95	60-80	28-45	53-70	2-7
	8-17	Silt loam, very fine sandy loam	0	0	87-100	83-100	71-95	38-80	28-65	33-70	2-7
	17-28	Cobbly very fine sandy loam, very fine sandy loam, silt loam, gravelly silt loam	0	0-20	60-90	55-85	55-80	30-66	28-65	33-70	2-7
	28-60	Very gravelly coarse sandy loam, very gravelly sandy loam, extremely gravelly coarse sandy loam	0	0-20	35-60	20-55	10-35	5-25	55-75	23-43	2-7

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
645: Ninchuun-----	In.										
	0-6	Slightly decomposed plant material, moderately decomposed plant material	---	---	---	---	---	---	---	---	---
	6-12	Silt loam, mucky silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	12-16	Silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	16-20	Silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	20-32	Permanently frozen silt loam	0	0	100	100	90-100	50-100	20-43	55-75	2-10
	32-60	Permanently frozen gravelly fine sandy loam, permanently frozen gravelly sandy loam, permanently frozen gravelly silt loam	0	0	65-80	55-75	30-60	10-50	35-70	30-55	0-10
Audrey-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	0	---	---	---	---	---	---	---	---
	1-8	Silt loam	0	0	100	100	85-95	60-80	28-45	53-70	2-7
	8-17	Silt loam, very fine sandy loam	0	0	87-100	83-100	71-95	38-80	28-65	33-70	2-7
	17-28	Gravelly silt loam, cobbly very fine sandy loam, very fine sandy loam, silt loam	0	0-20	60-90	55-85	55-80	30-66	28-65	33-70	2-7
	28-60	Very gravelly sandy loam, very gravelly coarse sandy loam, extremely gravelly coarse sandy loam	0	0-20	35-60	20-55	10-35	5-25	55-75	23-43	2-7
646: Nomeracy Lake-----	0-2	Moderately decomposed plant material, slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Silt loam, very fine sandy loam	0	0	100	100	90-98	55-80	25-60	36-70	4-8
	4-13	Gravelly fine sandy loam, very gravelly sandy loam	0	0-15	40-85	25-80	20-70	10-45	55-75	23-40	2-7
	13-60	Very gravelly fine sandy loam, very gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand, very cobbly loamy sand	0	0-30	35-70	20-60	15-45	5-30	60-85	15-30	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
661: Turbels, moderately steep -----	In.										
	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Silt loam, mucky silt loam, loam	0	0	100	100	85-95	65-90	15-45	45-80	2-10
	6-18	Silt loam, cobbly loam, very stony silt loam, very gravelly sandy loam	0-20	0-20	55-90	45-85	45-80	20-70	20-70	23-75	2-10
	18-30	Extremely gravelly loamy sand, very gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam	0-7	10-20	30-65	15-55	10-45	4-30	50-80	15-45	2-7
	30-60	Permanently frozen extremely gravelly sandy loam, permanently frozen very gravelly sandy loam, permanently frozen very gravelly loamy sand, permanently frozen extremely gravelly loamy sand	0-7	10-20	30-65	15-55	10-45	4-30	50-80	15-45	2-7
662: Turbels, steep -----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Silt loam, mucky silt loam, loam	0	0	100	100	85-95	65-90	15-45	45-80	2-10
	6-18	Silt loam, cobbly loam, very gravelly sandy loam, very stony silt loam	0-20	0-20	55-90	45-85	45-80	20-70	20-70	23-75	2-10
	18-30	Extremely gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand, extremely gravelly loamy sand	0-7	10-20	30-65	15-55	10-45	4-30	50-80	15-45	2-7
	30-60	Permanently frozen very gravelly sandy loam, permanently frozen very gravelly loamy sand, permanently frozen extremely gravelly loamy sand, permanently frozen extremely gravelly sandy loam	0-7	10-20	30-65	15-55	10-45	4-30	50-80	15-45	2-7

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
665: Turbels, mountains-----	In.										
	0-4	Peat	0	0	---	---	---	---	---	---	---
	4-7	Mucky peat	0	0	---	---	---	---	---	---	---
	7-9	Permanently frozen mucky peat	0	0	---	---	---	---	---	---	---
	9-15	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0-12	90-100	85-100	70-90	40-80	25-65	35-75	0-7
	15-60	Permanently frozen loamy sand, permanently frozen loamy coarse sand, permanently frozen very cobbly sandy loam, permanently frozen very gravelly sandy loam, permanently frozen gravelly loamy sand, permanently frozen gravelly sandy loam	0	0-25	44-90	30-85	15-60	6-34	60-85	15-40	0-5
Typic Dystroglepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Gravelly sandy loam, mucky very fine sandy loam, mucky silt loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Gravelly loamy sand, very gravelly sandy loam, very cobbly sandy loam, very stony sandy loam, cobbly silt loam, gravelly sandy loam, loamy very fine sand, gravelly silt loam	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Extremely cobbly coarse sand, very gravelly coarse sandy loam, very gravelly loamy sand, very stony coarse sand, very cobbly loamy sand, extremely gravelly coarse sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5
Ruptic-Histic Aquiturbels, mountains-----	0-1	Slightly decomposed plant material, moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	1-3	Silt loam, gravelly fine sandy loam	0	0	63-95	54-90	40-83	19-65	35-75	25-60	0-10
	3-30	Silt loam, very gravelly sandy loam, gravelly coarse sandy loam	0	0-14	50-85	38-81	24-68	12-55	35-75	25-60	0-10
	30-60	Permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly silt loam, permanently frozen gravelly sandy loam	0	0-28	47-83	34-79	18-62	10-53	35-75	25-60	0-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
666: Typic Aquiturbels -----	In.										
	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7
667: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7
668: Typic Aquiturbels, gently sloping -----	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7
669: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
669: Butchlake -----	In.										
	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-4	Silt loam, mucky silt loam	0	0-17	100	100	85-95	60-85	20-50	45-75	5-7
	4-9	Extremely gravelly coarse sandy loam, cobbly sandy loam, gravelly loam, very cobbly sandy loam, very gravelly sandy loam	0	10-25	25-85	10-80	7-55	4-40	50-70	26-45	4-10
	9-60	Gravelly sandy loam, very cobbly sandy loam, extremely gravelly sandy loam, very gravelly sandy loam, extremely gravelly loamy sand	0	10-30	25-85	15-80	10-65	5-45	50-80	16-45	4-6
Southpaw -----	0-4	Slightly decomposed plant material	---	---	---	---	---	---	---	---	---
	4-13	Silt loam, very fine sandy loam	0	0	100	100	85-95	55-85	20-60	35-75	5-10
	13-22	Fine sandy loam, sandy loam	0	0	100	100	70-80	35-50	55-70	25-45	0-5
	22-36	Gravelly sandy loam, sandy loam, gravelly fine sandy loam, fine sandy loam	0	0	65-85	55-80	40-65	20-40	55-70	25-45	0-5
	36-60	Very gravelly loamy sand, extremely gravelly loamy sand, extremely gravelly sandy loam, very gravelly sandy loam	0	0	35-55	20-45	15-35	5-20	65-90	10-30	0-5
670: Typic Aquiturbels -----	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7
Terric Hemistels-----	0-20	Mucky peat, peat	0	0	---	---	---	---	---	---	---
	20-24	Moderately decomposed plant material, silt loam	0	0	100	100	90-97	65-80	25-45	53-73	2-7
	24-60	Permanently frozen very fine sandy loam, permanently frozen gravelly sandy loam, permanently frozen gravelly silt loam, permanently frozen silt loam	0	0-10	60-100	55-100	50-97	30-80	25-65	33-73	2-7

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
671: Typic Aquiturbels -----	In.										
	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	0-0
	7-15	Very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	15-33	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	33-41	Permanently frozen very fine sandy loam	0	0	100	100	90-100	50-65	50-70	23-47	3-7
	41-60	Permanently frozen gravelly very fine sandy loam	0	0	65-75	60-70	55-65	30-45	50-70	23-47	3-7
Terric Hemistels-----	0-20	Mucky peat, peat	0	0	---	---	---	---	---	---	---
	20-24	Moderately decomposed plant material, silt loam	0	0	100	100	90-97	65-80	25-45	53-73	2-7
	24-60	Permanently frozen silt loam, permanently frozen gravelly silt loam, permanently frozen gravelly sandy loam, permanently frozen very fine sandy loam	0	0-10	60-100	55-100	50-97	30-80	25-65	33-73	2-7
672: Typic Aquiturbels, ridges -----	0-5	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	5-8	Silt loam, very fine sandy loam	0	0	100	100	88-96	52-84	20-60	37-73	3-7
	8-15	Permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	100	100	88-96	52-84	20-60	37-73	3-7
	15-24	Permanently frozen very fine sandy loam, permanently frozen loam, permanently frozen silt loam	0	0	100	100	88-96	52-84	20-60	37-73	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Gravelly silt loam, silt loam, mucky silt loam, very fine sandy loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
673: Typic Aquiturbels, moraines -----	In.										
	0-6	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	17-60	35-80	3-10
	6-9	Very fine sandy loam, silt loam	0	0	98-100	91-100	89-99	53-84	22-65	35-75	3-10
	9-19	Very fine sandy loam, silt loam	0	0	100	100	97-99	54-82	22-65	30-75	3-10
	19-24	Permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	100	100	97-99	54-82	22-65	30-75	3-10
	24-60	Permanently frozen silt loam, permanently frozen gravelly loam, permanently frozen fine sandy loam	0	0	86-98	76-96	63-90	30-71	22-70	25-75	3-10
Typic Dystrocrypts, moraines -----	0-4	Moderately decomposed plant material, slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	4-5	Very fine sandy loam, gravelly silt loam, silt loam, mucky silt loam	0	0	62-100	52-100	40-93	21-79	22-70	30-75	3-7
	5-8	Sandy loam, silt loam, very fine sandy loam	0	0	88-100	83-100	55-90	30-75	28-70	25-70	2-5
	8-24	Very stony very fine sandy loam, fine sandy loam, gravelly sandy loam, gravelly fine sandy loam	0-50	0-25	49-85	36-79	25-60	13-39	55-70	25-45	0-3
	24-60	Extremely gravelly loamy coarse sand, extremely stony loamy sand, very gravelly fine sandy loam, gravelly sandy loam	0-24	0-12	39-79	26-73	15-56	6-39	55-85	10-45	0-3
Typic Haploturbels, moraines -----	0-4	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	17-60	35-80	3-10
	6-8	Silt loam, mucky silt loam, very fine sandy loam, gravelly silt loam	0	0-25	65-100	55-100	45-93	25-79	22-65	30-75	3-7
	8-11	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	22-65	30-75	3-10
	11-16	Permanently frozen silt loam, permanently frozen sandy loam, permanently frozen very fine sandy loam	0	0	98-100	91-100	67-88	35-73	22-68	25-75	3-10
	16-60	Permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen sandy loam	0	0	98-100	91-100	67-88	35-73	22-68	25-75	3-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
674: Typic Aquiturbels, river valleys-----	In.										
	0-4	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	4-6	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	6-16	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	90-100	88-100	74-95	44-84	20-60	35-75	3-10
	16-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Histoturbels, river valleys-----	0-7	Mucky peat	0	0	---	---	---	---	---	---	---
	7-12	Peat	0	0	---	---	---	---	---	---	---
	12-15	Silt loam, very fine sandy loam, mucky silt loam	0	0	100	100	99-100	60-86	22-65	30-75	3-7
	15-60	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	100	100	97-99	55-83	22-65	30-75	3-10
675: Typic Aquorthels, mountains-----	0-3	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	65-95	40-80	20-60	35-75	3-10
	3-14	Silt loam, very fine sandy loam	0	0	100	100	65-95	40-80	20-60	35-75	3-10
	14-24	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Histoturbels, mountains-----	0-3	Peat	0	0	---	---	---	---	---	---	---
	3-6	Mucky peat	0	0	---	---	---	---	---	---	---
	6-13	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	13-18	Silt loam, loam, very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	18-60	Permanently frozen silt loam, permanently frozen gravelly silt loam, permanently frozen loam, permanently frozen very fine sandy loam	0	0-10	70-100	63-100	50-95	31-80	20-60	35-75	3-10
676: Typic Cryaquepts-----	0-4	Silt loam	0	0	100	100	80-90	60-75	30-45	55-65	2-7
	4-8	Gravelly silt loam, silt loam	0	0	75-90	70-85	60-75	45-65	30-45	55-65	2-7
	8-29	Very gravelly sandy loam, very gravelly fine sandy loam	0	10-15	55-70	40-60	35-55	25-45	55-70	25-40	2-7
	29-35	Loam	0	0	100	100	80-90	55-75	31-50	40-49	8-20
	35-56	Clay loam	0	0	100	100	85-95	65-80	25-40	30-45	28-35
	56-60	Loam	0	0	100	100	80-90	55-75	31-50	40-49	8-20

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
679: Typic Cryofluvents, river valleys-----	In.										
	0-2	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Loamy fine sand, very fine sandy loam, mucky silt loam, silt loam	0	0	87-100	83-100	74-99	23-83	25-85	15-70	0-5
	4-11	Gravelly coarse sand, very gravelly coarse sand, very fine sandy loam, gravelly sand, sand, sandy loam	0	0-19	45-100	38-100	18-68	3-44	60-100	0-40	0-3
	11-60	Sand, very fine sandy loam, gravelly sand, gravelly coarse sand, sandy loam, very gravelly coarse sand, extremely gravelly coarse sand	0	0-16	25-100	12-100	6-55	1-40	65-100	0-35	0-3
Typic Dystrocryepts, river valleys-----	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	7-10	Very fine sandy loam, silt loam	0	0	88-100	85-100	70-95	39-79	25-65	30-70	3-10
	10-24	Very fine sandy loam, silt loam	0	0	88-100	85-100	70-95	39-79	25-65	30-70	3-10
	24-60	Gravelly loamy sand, loamy sand, cobbly loamy sand, very gravelly coarse sand, gravelly coarse sand	0	0-24	49-86	36-85	14-43	3-23	75-95	3-20	2-5
680: Typic Cryofluvents, river valleys-----	0-2	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Loamy fine sand, mucky silt loam, silt loam, very fine sandy loam	0	0	87-100	83-100	74-99	23-83	25-85	15-70	0-5
	4-11	Very gravelly coarse sand, sandy loam, sand, very fine sandy loam, gravelly coarse sand, gravelly sand	0	0-19	45-100	38-100	18-68	3-44	60-100	0-40	0-3
	11-60	Extremely gravelly coarse sand, very gravelly coarse sand, sand, very fine sandy loam, gravelly coarse sand, gravelly sand, sandy loam	0	0-16	25-100	12-100	6-55	1-40	65-100	0-35	0-3
Typic Dystrocryepts, river valleys-----	0-7	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	7-10	Silt loam, very fine sandy loam	0	0	88-100	85-100	70-95	39-79	25-65	30-70	3-10
	10-24	Very fine sandy loam, silt loam	0	0	88-100	85-100	70-95	39-79	25-65	30-70	3-10
	24-60	Very gravelly coarse sand, gravelly coarse sand, gravelly loamy sand, cobbly loamy sand, loamy sand	0	0-24	49-86	36-85	14-43	3-23	75-95	3-20	2-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
680: Typic Histoturbels, river valleys-----	In.										
	0-7	Mucky peat	0	0	---	---	---	---	---	---	---
	7-12	Peat	0	0	---	---	---	---	---	---	---
	12-15	Very fine sandy loam, mucky silt loam, silt loam	0	0	100	100	99-100	60-86	22-65	30-75	3-7
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	100	100	97-99	55-83	22-65	30-75	3-10
681: Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Mucky silt loam, silt loam, very fine sandy loam, gravelly silt loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Silt loam, very gravelly coarse sand, gravelly sandy loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Very gravelly coarse sand, very gravelly loamy coarse sand, gravelly loamy sand, extremely gravelly coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5
Ruptic-Histic Aquiturbels, ridges -----	0-4	Peat	0	0	---	---	---	---	---	---	---
	4-9	Mucky very fine sandy loam, mucky silt loam	0	0	100	100	85-95	49-80	20-60	35-80	3-10
	9-21	Loam, silt loam	0	0	88-100	85-100	73-93	49-79	25-50	27-75	3-10
	21-60	Permanently frozen loam, permanently frozen gravelly sandy loam, permanently frozen silt loam	0	0	66-100	58-100	47-93	24-79	25-70	27-75	3-10
682: Typic Dystrocryepts, high moraines-----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-3	Mucky silt loam, very fine sandy loam, silt loam, gravelly silt loam	0	0-20	60-100	55-100	40-93	25-79	22-65	30-75	3-7
	3-4	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam	0-12	0-12	60-80	50-75	35-58	13-35	55-85	15-45	0-5
	4-9	Very gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam, extremely stony coarse sand	0-36	0-24	38-78	33-76	16-60	4-35	55-95	5-45	0-5
	9-60	Very gravelly loamy sand, extremely stony coarse sand, very gravelly sandy loam, gravelly sandy loam	0-24	0-18	31-70	15-65	8-50	2-30	55-90	5-45	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
682: Turbels, high moraines -----	In.										
	0-6	Peat	0	0	---	---	---	---	---	---	---
	6-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-12	Mucky very fine sandy loam, mucky silt loam	0	0	100	100	83-95	47-83	20-60	35-75	3-10
	12-24	Permanently frozen silt loam, permanently frozen loam, permanently frozen very fine sandy loam	0	0-23	83-100	79-100	62-95	36-82	25-65	35-75	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Water -----	---	---	---	---	---	---	---	---	---	---	---
683: Typic Dystricrypts, moraines -----	0-4	Slightly decomposed plant material, moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	4-5	Very fine sandy loam, gravelly silt loam, mucky silt loam, silt loam	0	0	62-100	52-100	40-93	21-79	22-70	30-75	3-7
	5-8	Very fine sandy loam, silt loam, sandy loam	0	0	88-100	83-100	55-90	30-75	28-70	25-70	2-5
	8-24	Very stony very fine sandy loam, gravelly fine sandy loam, gravelly sandy loam, fine sandy loam	0-50	0-25	49-85	36-79	25-60	13-39	55-70	25-45	0-3
	24-60	Very gravelly fine sandy loam, gravelly sandy loam, extremely stony loamy sand, extremely gravelly loamy coarse sand	0-24	0-12	39-79	26-73	15-56	6-39	55-85	10-45	0-3
Turbels, moraines -----	0-5	Peat	0	0	---	---	---	---	---	---	---
	5-10	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	17-60	35-80	3-10
	10-19	Silt loam, fine sandy loam	0	0	98-100	91-100	89-99	53-84	22-65	35-75	3-10
	19-24	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	98-100	91-100	89-99	53-84	22-65	35-75	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Water -----	---	---	---	---	---	---	---	---	---	---	---
684: Typic Dystricrypts, outwash plains-----	0-2	Slightly decomposed plant material, moderately decomposed plant material	---	---	---	---	---	---	---	---	---
	2-5	Mucky silt loam	0	0	100	100	90-98	70-90	20-42	55-75	3-10
	5-16	Silt loam	0	0	100	100	90-98	70-90	20-42	55-75	3-10
	16-30	Silt loam	0	0	100	100	90-98	70-90	20-42	55-75	3-10
	30-60	Very gravelly sandy loam, cobble sandy loam, gravelly fine sand, gravelly loamy sand, very fine sandy loam	0	0-25	50-85	40-80	25-70	4-45	50-100	0-45	0-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
684: Typic Aquiturbels, outwash plains-----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-7	Mucky very fine sandy loam, mucky silt loam	0	0	100	100	86-95	53-84	20-60	35-75	3-10
	7-12	Very fine sandy loam, silt loam	0	0	100	100	86-95	53-84	20-65	35-75	3-10
	12-22	Very fine sandy loam, silt loam	0	0	100	100	86-95	53-84	20-65	35-75	3-10
	22-31	Permanently frozen loamy sand, permanently frozen silt loam	0	0	100	100	76-80	23-36	20-85	10-75	3-10
	31-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Haplothels, outwash plains-----	0-5	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	5-10	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	40-80	20-60	35-80	3-10
	10-13	Silt loam, very fine sandy loam	0	0	100	100	89-99	51-84	20-70	27-75	3-10
	13-28	Very fine sandy loam, silt loam	0	0	100	100	89-99	51-84	20-70	27-75	3-10
	28-60	Permanently frozen sandy loam, permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	72-100	69-100	51-91	25-77	20-70	27-75	3-10
685: Typic Dystrocrypts, high moraines-----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-3	Gravelly silt loam, mucky silt loam, silt loam, very fine sandy loam	0	0-20	60-100	55-100	40-93	25-79	22-65	30-75	3-7
	3-4	Gravelly loamy sand, gravelly sandy loam, very gravelly sandy loam	0-12	0-12	60-80	50-75	35-58	13-35	55-85	15-45	0-5
	4-9	Gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand, extremely stony coarse sand	0-36	0-24	38-78	33-76	16-60	4-35	55-95	5-45	0-5
	9-60	Gravelly sandy loam, very gravelly sandy loam, very gravelly loamy sand, extremely stony coarse sand	0-24	0-18	31-70	15-65	8-50	2-30	55-90	5-45	0-5
Typic Cryaquepts, high moraines-----	0-4	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	4-12	Gravelly loam, gravelly sandy loam, gravelly loamy sand, cobbly loam, very cobbly loam, cobbly loamy sand, very cobbly loamy sand	0	0-50	66-84	56-80	39-65	16-47	45-80	15-45	2-10
	12-60	Gravelly sandy loam, gravelly loamy coarse sand	0	0-15	70-77	65-72	41-55	17-36	55-80	15-45	2-7

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
685: Aquic Dystrocrepts, high moraines-----	In.										
	0-2	Slightly decomposed plant material, moderately decomposed plant material, highly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-4	Very fine sandy loam, silt loam	0	0	100	100	94-98	55-83	25-65	30-75	0-10
	4-16	Sandy loam, gravelly silt loam, gravelly sandy loam, gravelly loamy sand, gravelly very fine sandy loam	0-15	0-15	67-100	56-100	31-81	17-71	35-85	10-60	0-10
	16-60	Cobbly sand, very gravelly sandy loam, gravelly loamy sand, very gravelly very fine sandy loam	0	7-20	53-76	50-75	32-58	9-37	55-90	10-35	0-10
Ruptic Histoturbels, high moraines-----	0-5	Peat	0	0	---	---	---	---	---	---	---
	5-8	Mucky peat	0	0	---	---	---	---	---	---	---
	8-10	Permanently frozen silt loam, permanently frozen mucky silt loam, permanently frozen very fine sandy loam	0	0	100	100	89-95	45-84	20-65	35-75	3-10
	10-11	Permanently frozen gravelly sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	65-100	56-100	47-95	26-84	20-65	35-75	3-10
	11-60	Permanently frozen coarse sand, permanently frozen loamy coarse sand, permanently frozen gravelly sandy loam	0	0-23	68-100	51-100	41-72	11-41	60-90	5-35	3-7
686: Typic Dystrocrepts, moraines -----	0-4	Moderately decomposed plant material, slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	4-5	Gravelly silt loam, very fine sandy loam, mucky silt loam, silt loam	0	0	62-100	52-100	40-93	21-79	22-70	30-75	3-7
	5-8	Very fine sandy loam, silt loam, sandy loam	0	0	88-100	83-100	55-90	30-75	28-70	25-70	2-5
	8-24	Gravelly sandy loam, very stony very fine sandy loam, gravelly fine sandy loam, fine sandy loam	0-50	0-25	49-85	36-79	25-60	13-39	55-70	25-45	0-3
	24-60	Gravelly sandy loam, extremely gravelly loamy coarse sand, extremely stony loamy sand, very gravelly fine sandy loam	0-24	0-12	39-79	26-73	15-56	6-39	55-85	10-45	0-3

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
686: Typic Cryaquepts, moraines -----	In.										
	0-5	Fine sandy loam, silt loam	0	0	98-100	91-100	89-99	53-84	22-65	25-75	3-10
	5-41	Fine sandy loam, silt loam	0	0	98-100	91-100	89-99	53-84	22-65	25-75	3-10
	41-60	Gravelly loam, fine sandy loam, silt loam, very gravelly silt loam, very gravelly very fine sandy loam	0	0-9	42-100	28-100	19-89	12-78	22-65	25-75	3-10
Typic Histoturbels, moraines -----	0-9	Mucky peat	0	0	---	---	---	---	---	---	---
	9-15	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-80	0-10
	15-19	Very fine sandy loam, silt loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	0-10
	19-28	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	0-10
	28-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
687: Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Silt loam, mucky silt loam, very fine sandy loam, gravelly silt loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Silt loam, very gravelly coarse sand, gravelly sandy loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Very gravelly coarse sand, sandy loam, gravelly loamy sand	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5
Typic Haplocryands, ridges -----	0-3	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	3-23	Silt loam, gravelly silt loam, very fine sandy loam	0	0-10	70-100	61-100	55-93	39-79	25-70	30-75	0-7
	23-60	Very gravelly loamy coarse sand, gravelly loamy sand, extremely gravelly coarse sand, very gravelly coarse sand	0	0-12	35-84	19-79	7-41	2-21	75-95	0-20	2-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
687: Typic Histoturbels, ridges -----	In.										
	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-75	3-10
	13-20	Permanently frozen very fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam	0	0	75-100	70-100	55-95	28-79	25-70	30-75	0-10
	20-60	Permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand, permanently frozen sandy loam, permanently frozen gravelly loam	0	0-8	50-100	39-100	30-90	12-75	25-80	18-75	0-10
688: Typic Dystrocryepts, moraines -----	0-4	Moderately decomposed plant material, slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	4-5	Gravelly silt loam, very fine sandy loam, mucky silt loam, silt loam	0	0	62-100	52-100	40-93	21-79	22-70	30-75	3-7
	5-8	Silt loam, very fine sandy loam, sandy loam	0	0	88-100	83-100	55-90	30-75	28-70	25-70	2-5
	8-24	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam, very stony very fine sandy loam	0-50	0-25	49-85	36-79	25-60	13-39	55-70	25-45	0-3
	24-60	Gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly loamy coarse sand, extremely stony loamy sand	0-24	0-12	39-79	26-73	15-56	6-39	55-85	10-45	0-3
Typic Haploturbels, moraines -----	0-4	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	17-60	35-80	3-10
	6-8	Very fine sandy loam, mucky silt loam, silt loam, gravelly silt loam	0	0-25	65-100	55-100	45-93	25-79	22-65	30-75	3-7
	8-11	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	22-65	30-75	3-10
	11-16	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen sandy loam	0	0	98-100	91-100	67-88	35-73	22-68	25-75	3-10
	16-60	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen sandy loam	0	0	98-100	91-100	67-88	35-73	22-68	25-75	3-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
690: Typic Dystrocryepts, ridges -----	In.										
	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Gravelly silt loam, very fine sandy loam, mucky silt loam, silt loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Very gravelly loamy coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5
Typic Histoturbels, ridges -----	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-75	3-10
	13-20	Permanently frozen gravelly loam, permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	75-100	70-100	55-95	28-79	25-70	30-75	0-10
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly loamy coarse sand, permanently frozen very fine sandy loam, permanently frozen silt loam	0	0-8	50-100	39-100	30-90	12-75	25-80	18-75	0-10
691: Typic Dystrocryepts, high moraines-----	0-2	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	2-3	Very fine sandy loam, mucky silt loam, silt loam, gravelly silt loam	0	0-20	60-100	55-100	40-93	25-79	22-65	30-75	3-7
	3-4	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam	0-12	0-12	60-80	50-75	35-58	13-35	55-85	15-45	0-5
	4-9	Very gravelly loamy sand, very gravelly sandy loam, extremely stony coarse sand, gravelly sandy loam	0-36	0-24	38-78	33-76	16-60	4-35	55-95	5-45	0-5
	9-60	Gravelly sandy loam, extremely stony coarse sand, very gravelly loamy sand, very gravelly sandy loam	0-24	0-18	31-70	15-65	8-50	2-30	55-90	5-45	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
691: Typic Histoturbels, high moraines-----	In.										
	0-6	Peat	0	0	---	---	---	---	---	---	---
	6-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-15	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	83-95	47-83	20-60	35-75	3-10
	15-24	Permanently frozen silt loam, permanently frozen very fine sandy loam, permanently frozen loam	0	0-23	83-100	79-100	62-95	36-82	25-65	35-75	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Folists, high moraines-----	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-14	Mucky very fine sandy loam, mucky silt loam, mucky extremely stony silt loam	0-91	0-13	100	100	86-96	49-83	20-60	35-80	3-10
	14-60	Stones	100	0	---	---	---	---	---	---	---
692: Typic Dystrocryepts, ridges-----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Very fine sandy loam, silt loam, mucky silt loam, gravelly silt loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5
Typic Histoturbels, ridges-----	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-75	3-10
	13-20	Permanently frozen silt loam, permanently frozen gravelly loam, permanently frozen very fine sandy loam	0	0	75-100	70-100	55-95	28-79	25-70	30-75	0-10
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand	0	0-8	50-100	39-100	30-90	12-75	25-80	18-75	0-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
692: Typic Aquiturbels, ridges -----	In.										
	0-5	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	5-8	Very fine sandy loam, silt loam	0	0	100	100	88-96	52-84	20-60	37-73	3-7
	8-15	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	100	100	88-96	52-84	20-60	37-73	3-7
	15-24	Permanently frozen loam, permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	100	100	88-96	52-84	20-60	37-73	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
693: Typic Dystrocrypts, ridges -----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Very fine sandy loam, gravelly silt loam, silt loam, mucky silt loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Very gravelly coarse sand, gravelly loamy sand, sandy loam	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Gravelly loamy sand, extremely gravelly coarse sand, very gravelly coarse sand, very gravelly loamy coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5
Typic Histoturbels, ridges -----	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-75	3-10
	13-20	Permanently frozen very fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam	0	0	75-100	70-100	55-95	28-79	25-70	30-75	0-10
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand	0	0-8	50-100	39-100	30-90	12-75	25-80	18-75	0-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
693: Typic Cryofluvents, ridges -----	In.										
	0-6	Slightly decomposed plant material, highly decomposed plant material, moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	6-9	Silt loam, mucky silt loam	0	0	100	100	93-96	68-82	22-40	55-75	3-7
	9-24	Loamy sand, very fine sandy loam, sandy loam, silt loam	0	0	100	100	90-97	42-84	22-80	20-75	0-7
	24-60	Very cobbly coarse sandy loam, extremely gravelly loamy sand, gravelly coarse sand, stratified very fine sandy loam to silt loam, loamy sand	0	0-43	43-100	29-100	10-68	1-53	50-100	0-50	0-7
694: Typic Dystrogelepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam, gravelly sandy loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Gravelly sandy loam, gravelly loamy sand, cobbly silt loam, very cobbly sandy loam, very gravelly sandy loam, gravelly silt loam, loamy very fine sand, very stony sandy loam	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Extremely gravelly coarse sand, very cobbly loamy sand, very stony coarse sand, very gravelly loamy sand, very gravelly coarse sandy loam, extremely cobbly coarse sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5
Aquic Dystrocryepts, mountains-----	0-5	Moderately decomposed plant material, slightly decomposed plant material	---	0	---	---	---	---	---	---	---
	5-10	Mucky silt loam, mucky loamy coarse sand	0	0	100	100	90-98	35-85	20-85	15-70	0-10
	10-19	Very gravelly coarse sandy loam, gravelly very fine sandy loam, silt loam, gravelly loam	0	0-10	50-95	40-90	20-80	10-80	20-85	15-70	0-10
	19-60	Very gravelly coarse sand, gravelly loamy coarse sand, very gravelly coarse sandy loam	0	0-20	45-75	30-70	20-50	5-40	45-90	10-45	0-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
694: Orthels, mountains -----	In.										
	0-2	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	2-7	Highly decomposed plant material	0	0	---	---	---	---	---	---	---
	7-9	Silt loam, mucky silt loam, very fine sandy loam	0	0	100	78-100	69-93	53-72	22-65	30-75	3-7
	9-12	Very fine sandy loam, silt loam, very cobbly very fine sandy loam, gravelly loam, sandy loam	0	0-10	70-100	65-100	42-88	19-77	25-75	20-75	0-7
	12-60	Permanently frozen gravelly loam, permanently frozen very cobbly very fine sandy loam, permanently frozen extremely gravelly coarse sand, permanently frozen extremely gravelly loamy coarse sand, permanently frozen very gravelly coarse sandy loam, permanently frozen gravelly very fine sandy loam	0	0-30	31-90	14-75	10-70	3-65	40-90	10-45	0-15
695: Typic Dystrogelepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Gravelly sandy loam, mucky very fine sandy loam, mucky silt loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Very gravelly sandy loam, cobbly silt loam, loamy very fine sand, gravelly silt loam, gravelly sandy loam, gravelly loamy sand, very stony sandy loam, very cobbly sandy loam	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Very stony coarse sand, extremely gravelly coarse sand, very gravelly loamy sand, very gravelly coarse sandy loam, very cobbly loamy sand, extremely cobbly coarse sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
696: Typic Dystroglepts, mountains-----	In.										
	0-4	Moderately decomposed plant material, slightly decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Mucky silt loam, mucky very fine sandy loam, gravelly sandy loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Very gravelly sandy loam, loamy very fine sand, gravelly silt loam, gravelly sandy loam, gravelly loamy sand, cobble silt loam, very stony sandy loam, very cobbly sandy loam	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Extremely gravelly coarse sand, very gravelly loamy sand, very gravelly coarse sandy loam, extremely cobble coarse sand, very stony coarse sand, very cobbly loamy sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5
Lithic Cryofolists, mountains-----	0-8	Peat, mucky peat	0	0-40	---	---	---	---	---	---	---
	8-10	Mucky silt loam, silt loam	0-25	0-25	100	100	75-90	40-80	22-65	30-75	3-7
	10-60	Bedrock	---	---	---	---	---	---	---	---	---
697: Typic Dystroglepts, mountains-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Mucky silt loam, gravelly sandy loam, mucky very fine sandy loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam, gravelly silt loam, loamy very fine sand, very cobble sandy loam, very stony sandy loam, cobble silt loam	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Extremely cobble coarse sand, very gravelly coarse sandy loam, very gravelly loamy sand, extremely gravelly coarse sand, very stony coarse sand, very cobbly loamy sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
697: Typic Cryaquepts, mountains-----	In.										
	0-3	Highly decomposed plant material, moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-8	Very gravelly coarse sandy loam, gravelly sandy loam, very gravelly loamy coarse sand, silt loam	0-10	0-15	46-92	33-90	15-77	7-71	25-85	15-65	0-7
	8-60	Gravelly sandy loam, silt loam, very gravelly coarse sand, very cobbly sandy loam	0-6	0-10	42-86	28-82	9-70	1-64	25-100	0-65	0-7
Humic Dystrocryepts, mountains-----	0-4	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-80	3-10
	4-11	Silt loam, mucky silt loam, very fine sandy loam, gravelly silt loam	0	0-25	65-100	55-100	45-93	25-79	22-65	30-75	3-7
	11-27	Gravelly sandy loam, very cobbly sandy loam, very gravelly loamy sand, very stony coarse sandy loam, very cobbly loamy coarse sand	0-25	0-20	55-80	40-75	30-70	8-55	30-85	15-70	0-5
	27-60	Very gravelly coarse sandy loam, very gravelly loamy sand, very cobbly loamy sand, extremely gravelly coarse sand	0	0-30	35-80	20-76	11-55	3-30	60-95	5-40	0-5
698: Typic Haplothels, high moraines-----	0-6	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	6-10	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	10-15	Permanently frozen extremely cobbly very fine sandy loam, permanently frozen very fine sandy loam, permanently frozen very cobbly silt loam, permanently frozen fine sandy loam	0-18	0-70	69-100	66-100	60-96	29-74	30-65	25-65	3-10
	15-60	Permanently frozen gravelly coarse sandy loam, permanently frozen gravelly loamy sand, permanently frozen sandy loam	0	0-8	71-85	58-77	30-54	14-41	50-80	15-45	3-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
702: Typic Histoturbels, river valleys-----	0-7	Mucky peat	0	0	---	---	---	---	---	---	---
	7-12	Peat	0	0	---	---	---	---	---	---	---
	12-15	Silt loam, mucky silt loam, very fine sandy loam	0	0	100	100	99-100	60-86	22-65	30-75	3-7
	15-60	Permanently frozen very fine sandy loam, permanently frozen silt loam	0	0	100	100	97-99	55-83	22-65	30-75	3-10
703: Typic Histoturbels, high moraines-----	0-6	Peat	0	0	---	---	---	---	---	---	---
	6-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-15	Mucky very fine sandy loam, mucky silt loam	0	0	100	100	83-95	47-83	20-60	35-75	3-10
	15-24	Permanently frozen loam, permanently frozen very fine sandy loam, permanently frozen silt loam	0	0-23	83-100	79-100	62-95	36-82	25-65	35-75	3-10
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Glacic Aquiturbels, high moraines-----	0-4	Highly decomposed plant material	0	0	---	---	---	---	---	---	---
	4-14	Silt loam, very fine sandy loam	0	0	100	100	89-99	53-84	20-65	35-75	3-10
	14-16	Permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	100	100	89-99	53-84	20-65	35-75	3-10
	16-60	Permanently frozen water	---	---	---	---	---	---	---	---	---
Histels, high moraines-----	0-4	Mucky peat	0	0	---	---	---	---	---	---	---
	4-22	Muck	0	0	---	---	---	---	---	---	---
	22-28	Permanently frozen mucky silt loam, permanently frozen mucky very fine sandy loam	0	0	85-100	80-100	80-100	55-90	20-60	35-77	3-10
	28-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
704: Typic Histoturbels, mountains-----	0-3	Peat	0	0	---	---	---	---	---	---	---
	3-6	Mucky peat	0	0	---	---	---	---	---	---	---
	6-13	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	13-18	Very fine sandy loam, silt loam, loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	18-60	Permanently frozen silt loam, permanently frozen gravelly silt loam, permanently frozen loam, permanently frozen very fine sandy loam	0	0-10	70-100	63-100	50-95	31-80	20-60	35-75	3-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
704: Histels, mountains-----	In.										
	0-3	Mucky peat, peat	0	0	---	---	---	---	---	---	---
	3-15	Muck	0	0	---	---	---	---	---	---	---
	15-20	Permanently frozen highly decomposed plant material	0	0	---	---	---	---	---	---	---
	20-24	Permanently frozen mucky silt loam, permanently frozen mucky fine sand	0	0	100	100	80-90	10-63	40-100	0-60	0-3
	24-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Dystroglepts, mountains-----	0-4	Slightly decomposed plant material, moderately decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Mucky silt loam, gravelly sandy loam, mucky very fine sandy loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Silt loam, very fine sandy loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Loamy very fine sand, gravelly silt loam, cobbly silt loam, very stony sandy loam, very cobbly sandy loam, very gravelly sandy loam, gravelly sandy loam, gravelly loamy sand	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Very cobbly loamy sand, very gravelly coarse sandy loam, extremely gravelly coarse sand, very gravelly loamy sand, very stony coarse sand, extremely cobbly coarse sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5
705: Typic Histoturbels, ridges-----	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-75	3-10
	13-20	Permanently frozen silt loam, permanently frozen gravelly loam, permanently frozen very fine sandy loam	0	0	75-100	70-100	55-95	28-79	25-70	30-75	0-10
	20-60	Permanently frozen gravelly loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand, permanently frozen very fine sandy loam, permanently frozen very gravelly coarse sandy loam, permanently frozen sandy loam	0	0-8	50-100	39-100	30-90	12-75	25-80	18-75	0-10

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
707: Typic Dystricrypts, hills -----	In.										
	0-6	Slightly decomposed plant material	0	0	---	---	---	---	---	---	---
	6-8	Very fine sandy loam, silt loam	0	0	100	100	82-95	53-84	22-60	35-75	3-10
	8-12	Silt loam, very fine sandy loam	0	0	100	100	82-95	53-84	22-60	35-75	3-10
	12-24	Very fine sandy loam, silt loam	0	0	100	100	97-99	55-85	22-65	30-75	3-10
	24-28	Extremely gravelly coarse sandy loam, gravelly very fine sandy loam, very gravelly sandy loam, very gravelly very fine sandy loam	0	0-12	38-79	24-79	18-63	10-46	50-70	25-45	2-5
	28-60	Bedrock	---	---	---	---	---	---	---	---	---
708: Typic Histoturbels, ridges -----	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-75	3-10
	13-20	Permanently frozen gravelly loam, permanently frozen silt loam, permanently frozen very fine sandy loam	0	0	75-100	70-100	55-95	28-79	25-70	30-75	0-10
	20-60	Permanently frozen very fine sandy loam, permanently frozen gravelly loamy coarse sand, permanently frozen very gravelly coarse sandy loam, permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen silt loam	0	0-8	50-100	39-100	30-90	12-75	25-80	18-75	0-10
Typic Dystricrypts, ridges -----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Very fine sandy loam, mucky silt loam, silt loam, gravelly silt loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Very gravelly coarse sand, gravelly sandy loam, silt loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Sandy loam, gravelly loamy sand, very gravelly coarse sand	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
710: Typic Histoturbels, ridges -----	In.										
	0-10	Peat	0	0	---	---	---	---	---	---	---
	10-11	Mucky peat	0	0	---	---	---	---	---	---	---
	11-13	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-75	3-10
	13-20	Permanently frozen very fine sandy loam, permanently frozen gravelly loam, permanently frozen silt loam	0	0	75-100	70-100	55-95	28-79	25-70	30-75	0-10
	20-60	Permanently frozen sandy loam, permanently frozen gravelly loam, permanently frozen very gravelly coarse sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam, permanently frozen gravelly loamy coarse sand	0	0-8	50-100	39-100	30-90	12-75	25-80	18-75	0-10
Typic Dystrocryepts, ridges -----	0-3	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	3-6	Mucky silt loam, silt loam, very fine sandy loam, gravelly silt loam	0	0-20	60-100	50-100	38-93	25-79	22-65	30-75	3-7
	6-13	Silt loam, very gravelly coarse sand, gravelly sandy loam	0	0-30	30-100	25-100	15-93	6-79	22-90	8-75	2-7
	13-18	Gravelly loamy sand, very gravelly coarse sand, sandy loam	0	0-15	50-100	40-100	25-80	7-55	50-90	8-45	2-5
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, gravelly loamy sand, very gravelly loamy coarse sand	0	0-35	35-84	19-79	7-41	2-21	75-95	0-20	2-5
Typic Historthels, ridges -----	0-9	Mucky peat	0	0	---	---	---	---	---	---	---
	9-11	Mucky silt loam, mucky very fine sandy loam	0	0	100	100	84-95	49-80	20-60	35-80	3-10
	11-15	Silt loam, sandy loam, very fine sandy loam	0	0	80-100	75-100	49-93	27-79	25-70	30-75	0-7
	15-24	Permanently frozen silt loam, permanently frozen sandy loam, permanently frozen very fine sandy loam	0	0	80-100	75-100	49-88	27-79	25-70	30-75	0-7
	24-60	Permanently frozen very gravelly coarse sand, permanently frozen sandy loam, permanently frozen gravelly loamy sand	0	0-15	50-100	39-100	25-80	7-55	50-90	8-45	2-5

Table 6. Engineering Sieve Data--Continued

Map symbol and soil name	Depth	USDA texture	Fragments		Percentage passing sieve number--				Sand	Silt	Clay
			>10 inches	3-10 inches	4	10	40	200			
			Pct.	Pct.							
714: Typic Histoturbels, mountains-----	In.										
	0-3	Peat	0	0	---	---	---	---	---	---	---
	3-6	Mucky peat	0	0	---	---	---	---	---	---	---
	6-13	Mucky very fine sandy loam, mucky silt loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	13-18	Silt loam, very fine sandy loam, loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-75	3-10
	18-60	Permanently frozen loam, permanently frozen very fine sandy loam, permanently frozen gravelly silt loam, permanently frozen silt loam	0	0-10	70-100	63-100	50-95	31-80	20-60	35-75	3-10
Typic Haploturbels, mountains-----	0-4	Moderately decomposed plant material	0	0	---	---	---	---	---	---	---
	4-5	Mucky silt loam, mucky very fine sandy loam	0	0-10	80-100	75-100	65-95	40-80	20-60	35-80	3-10
	5-19	Fine sandy loam, very fine sandy loam, silt loam	0	0-15	87-100	84-100	74-95	40-78	30-70	30-70	0-5
	19-25	Permanently frozen very gravelly loamy sand, permanently frozen fine sandy loam, permanently frozen very fine sandy loam, permanently frozen silt loam	0	0-13	50-100	37-100	32-95	13-78	30-85	15-70	0-5
	25-60	Permanently frozen material	---	---	---	---	---	---	---	---	---
Typic Dystroglepts, mountains-----	0-4	Moderately decomposed plant material, slightly decomposed plant material	0	0-60	---	---	---	---	---	---	---
	4-6	Gravelly sandy loam, mucky very fine sandy loam, mucky silt loam	0	0-20	75-100	66-100	56-95	36-80	20-60	35-80	0-10
	6-9	Very fine sandy loam, silt loam	0	0	98-100	91-100	89-99	53-84	25-65	35-75	3-10
	9-18	Loamy very fine sand, gravelly sandy loam, gravelly loamy sand, cobbly silt loam, very cobbly sandy loam, very gravelly sandy loam, very stony sandy loam, gravelly silt loam	0-17	0-23	45-100	27-100	27-100	17-84	30-85	15-70	0-5
	18-60	Extremely cobbly coarse sand, very gravelly coarse sandy loam, very gravelly loamy sand, extremely gravelly coarse sand, very stony coarse sand, very cobbly loamy sand	0-22	0-38	30-77	11-71	3-39	1-29	60-95	5-40	0-5

Table 7. Physical Properties of the Soils

(See text for definitions of terms used in this table. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
601: Aquic Dystricrypts, high moraines-----	0-2	0.20-0.30	2-6	0.40-0.55	---	60-85	---	---	1	3	86
	2-4	0.90-1.30	0.6-2	0.18-0.25	0.0-2.9	2.0-6.0	.43	.43			
	4-16	1.50-1.80	0.6-2	0.04-0.12	0.0-2.9	0.0-2.0	.15	.32			
	16-60	1.50-1.80	0.6-2	0.04-0.10	0.0-2.9	0.0-0.0	.15	.37			
Typic Dystricrypts, high moraines-----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	2-3	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	3-4	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.24	.37			
	4-9	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-0.0	.15	.37			
	9-60	1.20-1.70	2-6	0.05-0.12	1.0-2.9	0.0-0.0	.20	.37			
Histels, high moraines-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	4-22	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	22-28	---	0.000-0.001	---	---	11-20	.10	.10			
	28-60	---	0.000-0.001	---	---	---	---	---			
602: Audrey-----	0-1	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	5	56
	1-8	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32			
	8-17	1.00-1.30	0.6-2	0.20-0.24	0.0-2.9	0.5-4.0	.55	.55			
	17-28	1.00-1.40	2-6	0.17-0.21	0.0-2.9	0.0-0.5	.37	.55			
	28-60	1.00-1.40	2-6	0.06-0.10	0.0-2.9	0.0-0.2	.10	.37			
Butchlake, gently sloping-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
Typic Aquiturbels-----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
603: Audrey-----	0-1	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	5	56
	1-8	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32			
	8-17	1.00-1.30	0.6-2	0.20-0.24	0.0-2.9	0.5-4.0	.55	.55			
	17-28	1.00-1.40	2-6	0.17-0.21	0.0-2.9	0.0-0.5	.37	.55			
	28-60	1.00-1.40	2-6	0.06-0.10	0.0-2.9	0.0-0.2	.10	.37			
Typic Aquiturbels-----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
604: Babel-----	0-2	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	2	134
	2-4	0.30-0.70	0.6-2	0.32-0.36	0.0-2.9	8.0-20	.10	.10			
	4-8	0.90-1.30	0.6-2	0.17-0.21	0.0-2.9	1.0-6.0	.28	.43			
	8-18	1.20-1.40	0.6-2	0.08-0.13	0.0-2.9	0.5-1.0	.20	.37			
	18-25	1.20-1.40	0.6-2	0.08-0.13	0.0-2.9	0.0-0.5	.15	.32			
	25-60	---	0.000-0.001	---	---	0.0-0.5	.15	.43			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
605: Babel-----	0-2	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	2	134
	2-4	0.30-0.70	0.6-2	0.32-0.36	0.0-2.9	8.0-20	.10	.10			
	4-8	0.90-1.30	0.6-2	0.17-0.21	0.0-2.9	1.0-6.0	.28	.43			
	8-18	1.20-1.40	0.6-2	0.08-0.13	0.0-2.9	0.5-1.0	.20	.37			
	18-25	1.20-1.40	0.6-2	0.08-0.13	0.0-2.9	0.0-0.5	.15	.32			
	25-60	---	0.000-0.001	---	---	0.0-0.5	.15	.43			
Butchlake-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
606: Babel-----	0-2	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	2	134
	2-4	0.30-0.70	0.6-2	0.32-0.36	0.0-2.9	8.0-20	.10	.10			
	4-8	0.90-1.30	0.6-2	0.17-0.21	0.0-2.9	1.0-6.0	.28	.43			
	8-18	1.20-1.40	0.6-2	0.08-0.13	0.0-2.9	0.5-1.0	.20	.37			
	18-25	1.20-1.40	0.6-2	0.08-0.13	0.0-2.9	0.0-0.5	.15	.32			
	25-60	---	0.000-0.001	---	---	0.0-0.5	.15	.43			
Butchlake-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
607: Butchlake-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
608: Butchlake-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
609: Butchlake, moderately steep-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
Nomercy Lake-----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	2	2	134
	2-4	0.90-1.30	0.6-2	0.18-0.22	0.5-2.0	1.0-5.0	.49	.43			
	4-13	1.20-1.40	2-6	0.09-0.14	0.0-1.0	0.5-1.0	.28	.43			
	13-60	1.20-1.40	2-18	0.06-0.12	0.0-1.0	0.0-0.5	.15	.43			
Butchlake, very steep-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
610: Butchlake, gently sloping -----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
Southpaw -----	0-4	0.05-0.10	2-6	0.13-0.17	---	85-95	---	---	2	3	86
	4-13	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	1.0-5.0	.49	.49			
	13-22	1.10-1.20	2-6	0.20-0.23	0.0-2.9	0.5-2.0	.37	.37			
	22-36	1.35-1.50	2-6	0.10-0.14	0.0-2.9	0.0-0.2	.20	.37			
	36-60	1.35-1.50	6-18	0.02-0.06	0.0-2.9	0.0-0.2	.10	.10			
611: Butchlake -----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
Southpaw -----	0-4	0.05-0.10	2-6	0.13-0.17	---	85-95	---	---	2	3	86
	4-13	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	1.0-5.0	.49	.49			
	13-22	1.10-1.20	2-6	0.20-0.23	0.0-2.9	0.5-2.0	.37	.37			
	22-36	1.35-1.50	2-6	0.10-0.14	0.0-2.9	0.0-0.2	.20	.37			
	36-60	1.35-1.50	6-18	0.02-0.06	0.0-2.9	0.0-0.2	.10	.10			
612: Butchlake, strongly sloping -----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
Southpaw -----	0-4	0.05-0.10	2-6	0.13-0.17	---	85-95	---	---	2	3	86
	4-13	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	1.0-5.0	.49	.49			
	13-22	1.10-1.20	2-6	0.20-0.23	0.0-2.9	0.5-2.0	.37	.37			
	22-36	1.35-1.50	2-6	0.10-0.14	0.0-2.9	0.0-0.2	.20	.37			
	36-60	1.35-1.50	6-18	0.02-0.06	0.0-2.9	0.0-0.2	.10	.10			
613: Chena -----	0-4	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	1	3	86
	4-9	1.10-1.20	0.6-6	0.16-0.18	0.0-2.9	3.0-6.0	.28	.32			
	9-60	1.40-1.50	6-20	0.03-0.05	0.0-2.9	0.0-1.0	.10	.55			
614: Chena -----	0-4	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	1	3	86
	4-9	1.10-1.20	0.6-6	0.16-0.18	0.0-2.9	3.0-6.0	.28	.32			
	9-60	1.40-1.50	6-20	0.03-0.05	0.0-2.9	0.0-1.0	.10	.55			
615: Chetlake -----	0-3	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	2	5	56
	3-20	1.20-1.40	0.6-2	0.19-0.23	0.0-2.9	1.0-4.0	.37	.49			
	20-26	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	0.5-5.0	.32	.55			
	26-31	1.20-1.50	2-6	0.12-0.16	0.0-2.9	0.0-0.5	.20	.49			
	31-60	---	0.000-0.001	---	---	0.0-0.0	.10	.55			
616: Donnelly -----	0-2	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	1	4	86
	2-6	1.20-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-4.0	.32	.49			
	6-12	1.20-1.30	2-6	0.12-0.18	0.0-2.9	0.0-1.0	.37	.64			
	12-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-0.0	.10	.10			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
617:											
Donnelly, very steep -----	0-2	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	1	4	86
	2-6	1.20-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-4.0	.32	.49			
	6-12	1.20-1.30	2-6	0.12-0.18	0.0-2.9	0.0-1.0	.37	.64			
	12-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-0.0	.10	.10			
618:											
Donnelly-----	0-2	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	1	4	86
	2-6	1.20-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-4.0	.32	.49			
	6-12	1.20-1.30	2-6	0.12-0.18	0.0-2.9	0.0-1.0	.37	.64			
	12-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-0.0	.10	.10			
Nenana-----	0-2	0.07-0.18	0.6-2	0.35-0.50	0.0-2.9	75-90	---	---	2	3	86
	2-15	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.49	.49			
	15-21	1.20-1.30	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.43	.64			
	21-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.10	.10			
619:											
Gerstle-----	0-5	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	5	3	86
	5-7	1.00-1.20	0.6-2	0.20-0.22	0.0-2.9	2.0-6.0	.37	.37			
	7-60	1.20-1.40	0.6-2	0.15-0.22	0.0-2.9	0.0-1.0	.43	.43			
Moosehead-----	0-5	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	2	3	86
	5-6	1.00-1.20	0.6-2	0.20-0.22	0.0-2.9	4.0-8.0	.37	.37			
	6-10	1.00-1.20	1-13	0.13-0.22	0.0-2.9	0.0-2.0	.49	.49			
	10-60	1.20-1.50	2-17	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
620:											
Gerstle-----	0-5	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	5	3	86
	5-7	1.00-1.20	0.6-2	0.20-0.22	0.0-2.9	2.0-6.0	.37	.37			
	7-60	1.20-1.40	0.6-2	0.15-0.22	0.0-2.9	0.0-1.0	.43	.43			
Tanana-----	0-3	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	2	2	134
	3-6	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	2.0-6.0	.37	.37			
	6-25	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	0.0-2.0	.43	.43			
	25-60	---	0.000-0.001	---	---	---	---	---			
621:											
Pits, gravel -----	---	---	---	---	---	---	---	---	-	---	---
622:											
Histels, outwash plains-----	0-20	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	20-24	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	24-27	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	27-34	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	34-60	---	0.000-0.001	---	---	---	---	---			
623:											
Histels, outwash plains-----	0-20	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	20-24	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	24-27	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	27-34	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	34-60	---	0.000-0.001	---	---	---	---	---			
Orthels, outwash plains-----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	5-10	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	10-13	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	13-28	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	28-60	---	0.000-0.001	---	---	0.0-0.0	.43	.43			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
623: Turbels, outwash plains-----	0-7	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	7-10	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	10-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	18-20	---	0.000-0.001	---	---	0.0-0.0	---	---			
	20-60	---	0.000-0.001	---	---	---	---	---			
624: Histels, mountains-----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	3-15	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	15-20	---	0.000-0.001	---	---	60-85	---	---			
	20-24	---	0.000-0.001	---	---	10-21	---	---			
	24-60	---	0.000-0.001	---	---	---	---	---			
Orthels, mountains-----	0-2	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	2-7	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	7-9	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-18	.10	.10			
	9-12	1.00-1.40	1-6	0.12-0.30	1.0-2.9	2.0-5.0	.28	.32			
	12-60	---	0.000-0.001	---	---	0.0-1.0	---	---			
Typic Dystroglepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
625: Histels, high moraines-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	4-22	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	22-28	---	0.000-0.001	---	---	11-20	.10	.10			
	28-60	---	0.000-0.001	---	---	---	---	---			
Turbels, high moraines-----	0-6	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	6-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-12	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	12-24	---	0.000-0.001	---	---	0.0-5.0	.49	.49			
	24-60	---	0.000-0.001	---	---	---	---	---			
626: Histels, high moraines-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	4-22	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	22-28	---	0.000-0.001	---	---	11-20	.10	.10			
	28-60	---	0.000-0.001	---	---	---	---	---			
Typic Cryaquepts, high moraines-----	0-4	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10	1	3	86
	4-12	1.00-1.80	2-6	0.06-0.15	1.0-2.9	0.0-2.0	.15	.28			
	12-60	1.00-1.80	2-6	0.06-0.15	1.0-2.9	0.0-1.0	.20	.37			
Typic Dystrcryepts, high moraines-----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	2-3	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	3-4	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.24	.37			
	4-9	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-0.0	.15	.37			
	9-60	1.20-1.70	2-6	0.05-0.12	1.0-2.9	0.0-0.0	.20	.37			
627: Histels, river valleys-----	0-13	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	13-18	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	18-60	---	0.000-0.001	---	---	0.0-5.0	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
627: Typic Histoturbels, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	7-12	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---			
	12-15	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	15-60	---	0.000-0.001	---	---	0.0-5.0	---	---			
Historthels, river valleys-----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	5-10	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	10-12	---	0.000-0.001	---	---	3.0-6.0	.43	.49			
	12-16	---	0.000-0.001	---	---	0.0-5.0	.55	.64			
	16-60	---	0.000-0.001	---	---	---	---	---			
Typic Aquiturbels, river valleys-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	4-6	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	6-16	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
	16-60	---	0.000-0.001	---	---	---	---	---			
628: Humic Dystrocrepts, high moraines-----	0-2	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	1	3	86
	2-12	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.37	.37			
	12-60	1.20-1.70	2-6	0.05-0.12	1.0-2.9	0.0-0.0	.20	.37			
Aquic Umbrorthels, high moraines-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	4	86
	4-12	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	12-17	1.50-1.80	0.6-2	0.15-0.20	1.0-2.9	3.0-6.0	.24	.49			
	17-28	1.40-1.70	2-6	0.06-0.10	1.0-2.9	2.0-5.0	.10	.20			
	28-60	---	0.000-0.001	---	---	---	---	---			
629: Jarvis-----	0-2	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	2	2	134
	2-6	1.10-1.20	0.6-2	0.19-0.22	0.0-2.9	3.0-6.0	.43	.43			
	6-24	1.10-1.20	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.43	.49			
	24-60	1.60-1.70	6-20	0.03-0.06	0.0-2.9	0.1-0.3	.10	.10			
630: Jarvis-----	0-2	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	2	2	134
	2-6	1.10-1.20	0.6-2	0.19-0.22	0.0-2.9	3.0-6.0	.43	.43			
	6-24	1.10-1.20	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.43	.49			
	24-60	1.60-1.70	6-20	0.03-0.06	0.0-2.9	0.1-0.3	.10	.10			
631: Jarvis-----	0-2	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	2	2	134
	2-6	1.10-1.20	0.6-2	0.19-0.22	0.0-2.9	3.0-6.0	.43	.43			
	6-24	1.10-1.20	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.43	.49			
	24-60	1.60-1.70	6-20	0.03-0.06	0.0-2.9	0.1-0.3	.10	.10			
Chena-----	0-4	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	1	3	86
	4-9	1.10-1.20	0.6-6	0.16-0.18	0.0-2.9	3.0-6.0	.28	.32			
	9-60	1.40-1.50	6-20	0.03-0.05	0.0-2.9	0.0-1.0	.10	.55			
632: Chena-----	0-4	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	1	3	86
	4-9	1.10-1.20	0.6-6	0.16-0.18	0.0-2.9	3.0-6.0	.28	.32			
	9-60	1.40-1.50	6-20	0.03-0.05	0.0-2.9	0.0-1.0	.10	.55			
Jarvis-----	0-2	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	2	2	134
	2-6	1.10-1.20	0.6-2	0.19-0.22	0.0-2.9	3.0-6.0	.43	.43			
	6-24	1.10-1.20	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.43	.49			
	24-60	1.60-1.70	6-20	0.03-0.06	0.0-2.9	0.1-0.3	.10	.10			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
633: Jarvis -----	0-2	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	2	2	134
	2-6	1.10-1.20	0.6-2	0.19-0.22	0.0-2.9	3.0-6.0	.43	.43			
	6-24	1.10-1.20	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.43	.49			
	24-60	1.60-1.70	6-20	0.03-0.06	0.0-2.9	0.1-0.3	.10	.10			
Salchaket -----	0-3	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	3	3	86
	3-24	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.37	.37			
	24-45	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	1.0-5.0	.43	.43			
	45-60	1.50-1.60	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.05	.28			
634: Lithic Cryofolists, mountains -----	0-8	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	8-10	0.90-1.30	0.6-6	0.13-0.35	1.0-2.9	4.0-12	.20	.20			
	10-60	---	0.000-0.000	---	---	---	---	---			
Typic Cryorthents, mountains -----	0-4	0.07-0.18	6-20	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.75-1.25	0.6-6	0.05-0.20	0.0-2.9	1.0-3.0	.43	.43			
	6-60	1.40-1.70	2-6	0.01-0.04	0.0-2.9	0.0-0.0	.10	.15			
Typic Dystroglepts, mountains -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
Typic Histoturbels, mountains -----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	3-6	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	6-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.51-1.20	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	18-60	---	0.000-0.001	---	---	0.0-0.5	.43	.64			
635: McKinley, moderately steep -----	0-2	0.90-1.30	2-6	0.10-0.34	0.0-2.9	4.0-10	.24	.37	1	3	86
	2-12	1.20-1.40	2-6	0.04-0.12	0.0-2.9	0.5-2.0	.10	.32			
	12-26	1.20-1.40	6-20	0.04-0.06	0.0-2.9	0.0-1.0	.10	.37			
	26-30	1.20-1.40	6-20	0.04-0.05	0.0-2.9	0.0-0.5	.10	.10			
	30-60	---	0.000-0.001	---	---	---	---	---			
636: McKinley, very steep -----	0-2	0.90-1.30	2-6	0.10-0.34	0.0-2.9	4.0-10	.24	.37	1	3	86
	2-12	1.20-1.40	2-6	0.04-0.12	0.0-2.9	0.5-2.0	.10	.32			
	12-26	1.20-1.40	6-20	0.04-0.06	0.0-2.9	0.0-1.0	.10	.37			
	26-30	1.20-1.40	6-20	0.04-0.05	0.0-2.9	0.0-0.5	.10	.10			
	30-60	---	0.000-0.001	---	---	---	---	---			
637: Moosehead -----	0-5	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	2	3	86
	5-6	1.00-1.20	0.6-2	0.20-0.22	0.0-2.9	4.0-8.0	.37	.37			
	6-10	1.00-1.20	1-13	0.13-0.22	0.0-2.9	0.0-2.0	.49	.49			
	10-60	1.20-1.50	2-17	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
638: Mosquito -----	0-18	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	1	8	0
	18-42	0.80-1.40	0.6-2	0.24-0.28	0.0-2.9	5.0-10	.37	.37			
	42-60	---	0.000-0.001	---	---	---	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
639:											
Nenana-----	0-2	0.07-0.18	0.6-2	0.35-0.50	0.0-2.9	75-90	---	---	2	3	86
	2-15	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.49	.49			
	15-21	1.20-1.30	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.43	.64			
	21-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.10	.10			
640:											
Nenana-----	0-2	0.07-0.18	0.6-2	0.35-0.50	0.0-2.9	75-90	---	---	2	3	86
	2-15	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.49	.49			
	15-21	1.20-1.30	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.43	.64			
	21-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.10	.10			
Donnelly-----	0-2	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	1	4	86
	2-6	1.20-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-4.0	.32	.49			
	6-12	1.20-1.30	2-6	0.12-0.18	0.0-2.9	0.0-1.0	.37	.64			
	12-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-0.0	.10	.10			
641:											
Nenana-----	0-2	0.07-0.18	0.6-2	0.35-0.50	0.0-2.9	75-90	---	---	2	3	86
	2-15	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.49	.49			
	15-21	1.20-1.30	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.43	.64			
	21-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.10	.10			
Donnelly-----	0-2	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	1	4	86
	2-6	1.20-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-4.0	.32	.49			
	6-12	1.20-1.30	2-6	0.12-0.18	0.0-2.9	0.0-1.0	.37	.64			
	12-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-0.0	.10	.10			
642:											
Nenana-----	0-2	0.07-0.18	0.6-2	0.35-0.50	0.0-2.9	75-90	---	---	2	3	86
	2-15	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.49	.49			
	15-21	1.20-1.30	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.43	.64			
	21-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.10	.10			
Urban land-----	---	---	---	---	---	---	---	---	-	---	---
643:											
Ninchuun-----	0-6	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	1	3	86
	6-12	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-12	.43	.43			
	12-16	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-5.0	.49	.49			
	16-20	1.00-1.40	0.6-2	0.20-0.24	0.0-2.9	0.5-3.0	.64	.64			
	20-32	---	0.000-0.001	---	---	0.0-1.0	.32	.32			
	32-60	---	0.000-0.001	---	---	0.0-0.0	.15	.10			
644:											
Ninchuun-----	0-6	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	1	3	86
	6-12	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-12	.43	.43			
	12-16	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-5.0	.49	.49			
	16-20	1.00-1.40	0.6-2	0.20-0.24	0.0-2.9	0.5-3.0	.64	.64			
	20-32	---	0.000-0.001	---	---	0.0-1.0	.32	.32			
	32-60	---	0.000-0.001	---	---	0.0-0.0	.15	.10			
Audrey-----	0-1	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	5	56
	1-8	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32			
	8-17	1.00-1.30	0.6-2	0.20-0.24	0.0-2.9	0.5-4.0	.55	.55			
	17-28	1.00-1.40	2-6	0.17-0.21	0.0-2.9	0.0-0.5	.37	.55			
	28-60	1.00-1.40	2-6	0.06-0.10	0.0-2.9	0.0-0.2	.10	.37			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
645: Ninchuun-----	0-6	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	1	3	86
	6-12	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-12	.43	.43			
	12-16	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-5.0	.49	.49			
	16-20	1.00-1.40	0.6-2	0.20-0.24	0.0-2.9	0.5-3.0	.64	.64			
	20-32	---	0.000-0.001	---	---	0.0-1.0	.32	.32			
	32-60	---	0.000-0.001	---	---	0.0-0.0	.15	.10			
Audrey-----	0-1	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	5	56
	1-8	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-8.0	.32	.32			
	8-17	1.00-1.30	0.6-2	0.20-0.24	0.0-2.9	0.5-4.0	.55	.55			
	17-28	1.00-1.40	2-6	0.17-0.21	0.0-2.9	0.0-0.5	.37	.55			
	28-60	1.00-1.40	2-6	0.06-0.10	0.0-2.9	0.0-0.2	.10	.37			
646: Nomercy Lake-----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	2	2	134
	2-4	0.90-1.30	0.6-2	0.18-0.22	0.5-2.0	1.0-5.0	.49	.43			
	4-13	1.20-1.40	2-6	0.09-0.14	0.0-1.0	0.5-1.0	.28	.43			
	13-60	1.20-1.40	2-18	0.06-0.12	0.0-1.0	0.0-0.5	.15	.43			
Butchlake-----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
Water-----	---	---	---	---	---	---	---	---	-	---	---
647: Riverwash-----	---	---	---	---	---	---	---	---	-	---	---
648: Salchaket-----	0-3	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	3	3	86
	3-24	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.37	.37			
	24-45	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	1.0-5.0	.43	.43			
	45-60	1.50-1.60	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.05	.28			
649: Salchaket-----	0-3	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	3	3	86
	3-24	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.37	.37			
	24-45	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	1.0-5.0	.43	.43			
	45-60	1.50-1.60	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.05	.28			
650: Tanacross-----	0-9	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	2	2	134
	9-11	0.80-1.20	0.6-2	0.20-0.22	0.0-2.9	5.0-10	.37	.37			
	11-17	1.20-1.40	0.6-6	0.17-0.22	0.0-2.9	0.0-1.0	.43	.43			
	17-60	---	0.000-0.001	---	---	---	---	---			
651: Tanana-----	0-3	0.05-0.10	6-20	0.05-0.35	---	85-95	---	---	2	2	134
	3-6	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	2.0-6.0	.37	.37			
	6-25	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	0.0-2.0	.43	.43			
	25-60	---	0.000-0.001	---	---	---	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
652:											
Terric Fibristels, river valleys -----	0-13	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	13-18	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	18-60	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
Ruptic-Histic Aquiturbels, river valleys -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	4-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	7-8	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	8-28	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
	28-60	---	0.000-0.001	---	---	---	---	---			
Typic Aquiturbels, river valleys -----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	4-6	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	6-16	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
	16-60	---	0.000-0.001	---	---	---	---	---			
Typic Histoturbels, river valleys -----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	7-12	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---			
	12-15	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	15-60	---	0.000-0.001	---	---	0.0-5.0	---	---			
653:											
Terric Fibristels, moraines -----	0-15	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	15-20	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	20-27	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	27-32	---	0.000-0.001	---	---	0.0-5.0	---	---			
	32-60	---	0.000-0.001	---	---	---	---	---			
Typic Histoturbels, moraines -----	0-9	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	9-15	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	15-19	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	19-28	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	28-60	---	0.000-0.001	---	---	---	---	---			
654:											
Terric Hemistels -----	0-20	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	20-24	0.30-0.70	0.6-3	0.30-0.34	0.0-2.9	12-19	.43	.43			
	24-60	---	0.000-0.001	---	---	1.0-5.0	.55	.55			
655:											
Terric Hemistels -----	0-20	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	20-24	0.30-0.70	0.6-3	0.30-0.34	0.0-2.9	12-19	.43	.43			
	24-60	---	0.000-0.001	---	---	1.0-5.0	.55	.55			
Typic Aquiturbels -----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
656:											
Tetlin, moderately steep -----	0-6	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	2	3	86
	6-24	0.80-1.30	0.6-2	0.24-0.28	0.0-2.9	2.0-5.0	.37	.37			
	24-60	---	0.000-0.001	---	---	0.0-1.0	---	---			
657:											
Tetlin -----	0-6	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	2	3	86
	6-24	0.80-1.30	0.6-2	0.24-0.28	0.0-2.9	2.0-5.0	.37	.37			
	24-60	---	0.000-0.001	---	---	0.0-1.0	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
658: Tetlin-----	0-6	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	2	3	86
	6-24	0.80-1.30	0.6-2	0.24-0.28	0.0-2.9	2.0-5.0	.37	.37			
	24-60	---	0.000-0.001	---	---	0.0-1.0	---	---			
659: Glacier-----	---	---	---	---	---	---	---	---	-	---	---
660: Turbels-----	0-3	0.07-0.18	2-6	0.43-0.47	---	75-90	---	---	1	2	134
	3-6	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-12	.28	.28			
	6-18	0.90-1.40	0.6-2	0.16-0.20	0.0-2.9	1.0-5.0	.20	.49			
	18-30	1.20-1.45	2-6	0.04-0.10	0.0-2.9	0.0-1.5	.10	.37			
	30-60	---	0.000-0.001	---	---	0.0-1.5	.10	.37			
Tetlin-----	0-6	0.05-0.10	6-20	0.05-0.35	0.0-2.9	85-95	---	---	2	3	86
	6-24	0.80-1.30	0.6-2	0.24-0.28	0.0-2.9	2.0-5.0	.37	.37			
	24-60	---	0.000-0.001	---	---	0.0-1.0	---	---			
661: Turbels, moderately steep-----	0-3	0.07-0.18	2-6	0.43-0.47	---	75-90	---	---	1	2	134
	3-6	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-12	.28	.28			
	6-18	0.90-1.40	0.6-2	0.16-0.20	0.0-2.9	1.0-5.0	.20	.49			
	18-30	1.20-1.45	2-6	0.04-0.10	0.0-2.9	0.0-1.5	.10	.37			
	30-60	---	0.000-0.001	---	---	0.0-1.5	.10	.37			
662: Turbels, steep-----	0-3	0.07-0.18	2-6	0.43-0.47	---	75-90	---	---	1	2	134
	3-6	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-12	.28	.28			
	6-18	0.90-1.40	0.6-2	0.16-0.20	0.0-2.9	1.0-5.0	.20	.49			
	18-30	1.20-1.45	2-6	0.04-0.10	0.0-2.9	0.0-1.5	.10	.37			
	30-60	---	0.000-0.001	---	---	0.0-1.5	.10	.37			
663: Turbels, very steep-----	0-3	0.07-0.18	2-6	0.43-0.47	---	75-90	---	---	1	2	134
	3-6	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	3.0-12	.28	.28			
	6-18	0.90-1.40	0.6-2	0.16-0.20	0.0-2.9	1.0-5.0	.20	.49			
	18-30	1.20-1.45	2-6	0.04-0.10	0.0-2.9	0.0-1.5	.10	.37			
	30-60	---	0.000-0.001	---	---	0.0-1.5	.10	.37			
664: Turbels, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	4-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	7-9	---	0.000-0.001	---	---	75-90	---	---			
	9-15	---	0.000-0.001	---	---	2.0-5.0	.55	.55			
	15-60	---	0.000-0.001	---	---	0.0-1.0	.10	.32			
Aquic Dystrocryepts, mountains-----	0-5	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	1	4	86
	5-10	0.51-1.20	0.6-2	0.08-0.35	0.0-2.9	11-20	.10	.10			
	10-19	1.35-1.50	2-6	0.04-0.18	0.0-2.9	1.0-3.0	.10	.24			
	19-60	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.0	.10	.32			
Water-----	---	---	---	---	---	---	---	---	-	---	---

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
665: Turbels, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	4-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	7-9	---	0.000-0.001	---	---	75-90	---	---			
	9-15	---	0.000-0.001	---	---	2.0-5.0	.55	.55			
	15-60	---	0.000-0.001	---	---	0.0-1.0	.10	.32			
Typic Dystroglepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
Ruptic-Histic Aquiturbels, mountains-----	0-1	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	2	2	134
	1-3	0.90-1.30	0.6-6	0.10-0.20	0.0-2.9	2.0-6.0	.20	.28			
	3-30	1.20-1.50	0.6-6	0.08-0.20	0.0-2.9	0.5-2.0	.15	.37			
	30-60	---	0.000-0.001	---	---	0.0-0.0	.20	.49			
666: Typic Aquiturbels -----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
667: Typic Aquiturbels -----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
668: Typic Aquiturbels, gently sloping-----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
669: Typic Aquiturbels -----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
Butchlake -----	0-3	0.05-0.10	6-20	0.13-0.17	---	85-95	---	---	5	2	134
	3-4	0.50-1.10	0.6-2	0.20-0.24	0.0-2.9	5.0-15	.10	.10			
	4-9	1.30-1.50	2-6	0.02-0.06	0.0-2.9	1.0-5.0	.10	.28			
	9-60	1.30-1.60	2-6	0.04-0.08	0.0-2.9	0.0-1.0	.10	.28			
Southpaw -----	0-4	0.05-0.10	2-6	0.13-0.17	---	85-95	---	---	2	3	86
	4-13	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	1.0-5.0	.49	.49			
	13-22	1.10-1.20	2-6	0.20-0.23	0.0-2.9	0.5-2.0	.37	.37			
	22-36	1.35-1.50	2-6	0.10-0.14	0.0-2.9	0.0-0.2	.20	.37			
	36-60	1.35-1.50	6-18	0.02-0.06	0.0-2.9	0.0-0.2	.10	.10			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
670:											
Typic Aquiturbels -----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
Terric Hemistels-----	0-20	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	20-24	0.30-0.70	0.6-3	0.30-0.34	0.0-2.9	12-19	.43	.43			
	24-60	---	0.000-0.001	---	---	1.0-5.0	.55	.55			
671:											
Typic Aquiturbels -----	0-7	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	7-15	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	1.0-7.0	.20	.20			
	15-33	---	0.000-0.001	---	---	0.0-0.5	.20	.20			
	33-41	---	0.000-0.001	---	---	0.0-0.0	.20	.20			
	41-60	---	0.000-0.001	---	---	0.0-0.0	.37	.55			
Terric Hemistels-----	0-20	0.07-0.18	0.6-2	0.43-0.47	---	75-90	---	---	1	8	0
	20-24	0.30-0.70	0.6-3	0.30-0.34	0.0-2.9	12-19	.43	.43			
	24-60	---	0.000-0.001	---	---	1.0-5.0	.55	.55			
672:											
Typic Aquiturbels, ridges -----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	5-8	0.90-1.30	2-7	0.19-0.25	1.0-2.9	4.0-8.0	.32	.32			
	8-15	---	0.000-0.001	---	---	1.0-3.0	.55	.55			
	15-24	---	0.000-0.001	---	---	0.5-1.5	.64	.64			
	24-60	---	0.000-0.001	---	---	---	---	---			
Typic Dystricrypts, ridges -----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
673:											
Typic Aquiturbels, moraines -----	0-6	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10	1	2	134
	6-9	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	9-19	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	19-24	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	24-60	---	0.000-0.001	---	---	0.0-2.0	.43	.49			
Typic Dystricrypts, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	3	86
	4-5	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.32	.32			
	5-8	1.20-1.40	2-6	0.13-0.22	1.0-2.9	1.0-3.0	.20	.20			
	8-24	1.40-1.70	2-6	0.10-0.15	1.0-2.9	0.0-1.0	.20	.37			
	24-60	1.40-1.70	2-6	0.06-0.12	1.0-2.9	0.0-0.0	.20	.37			
Typic Haploturbels, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	7	38
	4-6	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	6-8	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	8-11	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	11-16	---	0.000-0.001	---	---	0.0-1.0	.49	.49			
	16-60	---	0.000-0.001	---	---	0.0-0.0	.49	.49			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
674:											
Typic Aquiturbels, river valleys-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	4-6	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	6-16	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
	16-60	---	0.000-0.001	---	---	---	---	---			
Typic Histoturbels, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	7-12	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---			
	12-15	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	15-60	---	0.000-0.001	---	---	0.0-5.0	---	---			
675:											
Typic Aquorthels, mountains-----	0-3	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10	1	3	86
	3-14	0.51-1.20	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.37	.37			
	14-24	---	0.000-0.001	---	---	2.0-5.0	.49	.49			
	24-60	---	0.000-0.001	---	---	---	---	---			
Typic Histoturbels, mountains-----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	3-6	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	6-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.51-1.20	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	18-60	---	0.000-0.001	---	---	0.0-0.5	.43	.64			
676:											
Typic Cryaquepts-----	0-4	0.90-1.30	0.6-2	0.20-0.24	0.0-2.9	2.0-7.0	.43	.43	1	2	134
	4-8	1.50-1.80	2-6	0.16-0.20	0.0-2.9	1.0-2.0	.37	.55			
	8-29	1.40-1.70	2-6	0.10-0.14	0.0-2.9	0.0-0.5	.15	.37			
	29-35	1.20-1.40	0.6-2	0.20-0.24	3.0-6.0	0.0-0.0	.43	.43			
	35-56	1.30-1.60	0.6-2	0.22-0.26	3.0-6.0	0.0-0.0	.28	.28			
	56-60	1.20-1.40	0.6-2	0.20-0.24	3.0-6.0	0.0-0.0	.43	.43			
677:											
Typic Cryofluvents, river valleys-----	0-2	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	2-4	1.20-1.40	2-6	0.06-0.22	1.0-2.9	3.0-19	.20	.20			
	4-11	1.40-1.70	6-20	0.03-0.06	1.0-2.9	0.0-1.0	.10	.10			
	11-60	1.40-1.70	6-20	0.03-0.04	1.0-2.9	0.0-0.0	.10	.10			
678:											
Typic Cryofluvents, river valleys-----	0-2	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	2-4	1.20-1.40	2-6	0.06-0.22	1.0-2.9	3.0-19	.20	.20			
	4-11	1.40-1.70	6-20	0.03-0.06	1.0-2.9	0.0-1.0	.10	.10			
	11-60	1.40-1.70	6-20	0.03-0.04	1.0-2.9	0.0-0.0	.10	.10			
Histels, river valleys-----	0-13	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	13-18	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	18-60	---	0.000-0.001	---	---	0.0-5.0	---	---			
Typic Haploturbels, river valleys-----	0-6	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	5	56
	6-10	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-18	.10	.10			
	10-15	1.10-1.30	0.6-2	0.17-0.34	1.0-2.0	0.0-5.0	.49	.49			
	15-23	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
	23-28	---	0.000-0.001	---	---	0.0-0.0	.49	.49			
	28-60	---	0.000-0.001	---	---	---	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
679:											
Typic Cryofluvents, river valleys-----	0-2	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	2-4	1.20-1.40	2-6	0.06-0.22	1.0-2.9	3.0-19	.20	.20			
	4-11	1.40-1.70	6-20	0.03-0.06	1.0-2.9	0.0-1.0	.10	.10			
	11-60	1.40-1.70	6-20	0.03-0.04	1.0-2.9	0.0-0.0	.10	.10			
Typic Dystrocryepts, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	7-10	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	3.0-6.0	.43	.43			
	10-24	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.49	.49			
	24-60	1.00-1.70	2-6	0.03-0.13	1.0-2.9	0.0-0.0	.10	.10			
680:											
Typic Cryofluvents, river valleys-----	0-2	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	2-4	1.20-1.40	2-6	0.06-0.22	1.0-2.9	3.0-19	.20	.20			
	4-11	1.40-1.70	6-20	0.03-0.06	1.0-2.9	0.0-1.0	.10	.10			
	11-60	1.40-1.70	6-20	0.03-0.04	1.0-2.9	0.0-0.0	.10	.10			
Typic Dystrocryepts, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	7-10	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	3.0-6.0	.43	.43			
	10-24	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.49	.49			
	24-60	1.00-1.70	2-6	0.03-0.13	1.0-2.9	0.0-0.0	.10	.10			
Typic Histoturbels, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	7-12	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---			
	12-15	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	15-60	---	0.000-0.001	---	---	0.0-5.0	---	---			
681:											
Typic Dystrocryepts, ridges -----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
Ruptic-Histic Aquiturbels, ridges -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-9	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	9-21	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.43	.43			
	21-60	---	0.000-0.001	---	---	0.0-1.0	.55	.55			
682:											
Typic Dystrocryepts, high moraines-----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	2-3	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	3-4	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.24	.37			
	4-9	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-0.0	.15	.37			
	9-60	1.20-1.70	2-6	0.05-0.12	1.0-2.9	0.0-0.0	.20	.37			
Turbels, high moraines-----	0-6	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	6-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-12	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	12-24	---	0.000-0.001	---	---	0.0-5.0	.49	.49			
	24-60	---	0.000-0.001	---	---	---	---	---			
Water -----	---	---	---	---	---	---	---	-	---	---	

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
683:											
Typic Dystricrypts, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	3	86
	4-5	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.32	.32			
	5-8	1.20-1.40	2-6	0.13-0.22	1.0-2.9	1.0-3.0	.20	.20			
	8-24	1.40-1.70	2-6	0.10-0.15	1.0-2.9	0.0-1.0	.20	.37			
	24-60	1.40-1.70	2-6	0.06-0.12	1.0-2.9	0.0-0.0	.20	.37			
Turbels, moraines -----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	5-10	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	10-19	1.10-1.35	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	19-24	---	0.000-0.001	---	---	0.0-5.0	---	---			
	24-60	---	0.000-0.001	---	---	---	---	---			
Water -----	---	---	---	---	---	---	---	---	-	---	---
684:											
Typic Dystricrypts, outwash plains -----	0-2	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	5	3	86
	2-5	0.51-1.20	0.6-2	0.18-0.34	0.0-2.9	11-18	.10	.10			
	5-16	0.90-1.30	0.6-2	0.18-0.34	0.0-2.9	2.0-5.0	.55	.55			
	16-30	0.90-1.30	0.6-2	0.18-0.34	0.0-2.9	0.0-0.0	.64	.64			
	30-60	1.30-1.80	2-6	0.06-0.22	0.0-2.9	0.0-0.0	.15	.28			
Typic Aquiturbels, outwash plains -----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	2-7	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	7-12	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	3.0-6.0	.28	.28			
	12-22	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-3.0	.28	.28			
	22-31	---	0.000-0.001	---	---	0.0-0.0	.37	.37			
	31-60	---	0.000-0.001	---	---	---	---	---			
Typic Haplothels, outwash plains -----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	5-10	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	10-13	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.49	.49			
	13-28	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.55	.55			
	28-60	---	0.000-0.001	---	---	0.0-0.0	---	---			
685:											
Typic Dystricrypts, high moraines -----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	2-3	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	3-4	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.24	.37			
	4-9	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-0.0	.15	.37			
	9-60	1.20-1.70	2-6	0.05-0.12	1.0-2.9	0.0-0.0	.20	.37			
Typic Cryaquepts, high moraines -----	0-4	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10	1	3	86
	4-12	1.00-1.80	2-6	0.06-0.15	1.0-2.9	0.0-2.0	.15	.28			
	12-60	1.00-1.80	2-6	0.06-0.15	1.0-2.9	0.0-1.0	.20	.37			
Aquic Dystricrypts, high moraines -----	0-2	0.20-0.30	2-6	0.40-0.55	---	60-85	---	---	1	3	86
	2-4	0.90-1.30	0.6-2	0.18-0.25	0.0-2.9	2.0-6.0	.43	.43			
	4-16	1.50-1.80	0.6-2	0.04-0.12	0.0-2.9	0.0-2.0	.15	.32			
	16-60	1.50-1.80	0.6-2	0.04-0.10	0.0-2.9	0.0-0.0	.15	.37			
Ruptic Histoturbels, high moraines -----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	5-8	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	8-10	---	0.000-0.001	---	---	10-20	.17	.17			
	10-11	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
	11-60	---	0.000-0.001	---	---	0.0-1.0	.49	.49			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
686:											
Typic Dystricrypts, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	3	86
	4-5	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.32	.32			
	5-8	1.20-1.40	2-6	0.13-0.22	1.0-2.9	1.0-3.0	.20	.20			
	8-24	1.40-1.70	2-6	0.10-0.15	1.0-2.9	0.0-1.0	.20	.37			
	24-60	1.40-1.70	2-6	0.06-0.12	1.0-2.9	0.0-0.0	.20	.37			
Typic Cryaquepts, moraines -----	0-5	0.90-1.30	0.6-2	0.17-0.22	1.0-2.9	0.0-5.0	.28	.28	1	3	86
	5-41	0.68-0.87	0.6-2	0.17-0.22	1.0-2.9	0.0-5.0	.28	.28			
	41-60	0.68-0.87	0.6-2	0.09-0.17	1.0-2.9	0.0-5.0	.28	.28			
Typic Histoturbels, moraines -----	0-9	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	9-15	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	15-19	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	19-28	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	28-60	---	0.000-0.001	---	---	---	---	---			
687:											
Typic Dystricrypts, ridges -----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
Typic Haplocryands, ridges -----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	2	2	134
	3-23	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.43	.43			
	23-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.20			
Typic Histoturbels, ridges -----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
688:											
Typic Dystricrypts, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	3	86
	4-5	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.32	.32			
	5-8	1.20-1.40	2-6	0.13-0.22	1.0-2.9	1.0-3.0	.20	.20			
	8-24	1.40-1.70	2-6	0.10-0.15	1.0-2.9	0.0-1.0	.20	.37			
	24-60	1.40-1.70	2-6	0.06-0.12	1.0-2.9	0.0-0.0	.20	.37			
Typic Haploturbels, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	7	38
	4-6	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	6-8	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	8-11	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	11-16	---	0.000-0.001	---	---	0.0-1.0	.49	.49			
	16-60	---	0.000-0.001	---	---	0.0-0.0	.49	.49			
Typic Aquiturbels, moraines -----	0-6	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10	1	2	134
	6-9	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	9-19	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	19-24	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	24-60	---	0.000-0.001	---	---	0.0-2.0	.43	.49			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
689:											
Typic Dystricrypts, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	3	86
	4-5	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.32	.32			
	5-8	1.20-1.40	2-6	0.13-0.22	1.0-2.9	1.0-3.0	.20	.20			
	8-24	1.40-1.70	2-6	0.10-0.15	1.0-2.9	0.0-1.0	.20	.37			
	24-60	1.40-1.70	2-6	0.06-0.12	1.0-2.9	0.0-0.0	.20	.37			
Typic Histoturbels, moraines -----	0-9	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	9-15	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	15-19	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	19-28	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	28-60	---	0.000-0.001	---	---	---	---	---			
690:											
Typic Dystricrypts, ridges -----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
Typic Histoturbels, ridges -----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
691:											
Typic Dystricrypts, high moraines -----	0-2	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	2-3	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	3-4	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.24	.37			
	4-9	1.20-1.70	2-6	0.08-0.15	1.0-2.9	0.0-0.0	.15	.37			
	9-60	1.20-1.70	2-6	0.05-0.12	1.0-2.9	0.0-0.0	.20	.37			
Typic Histoturbels, high moraines -----	0-6	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	6-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-15	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	15-24	---	0.000-0.001	---	---	0.0-5.0	.49	.49			
	24-60	---	0.000-0.001	---	---	---	---	---			
Folists, high moraines -----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-14	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	14-60	---	20-20	0.00-0.00	---	---	---	---			
692:											
Typic Dystricrypts, ridges -----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
Typic Histoturbels, ridges -----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
Typic Aquiturbels, ridges -----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	5-8	0.90-1.30	2-7	0.19-0.25	1.0-2.9	4.0-8.0	.32	.32			
	8-15	---	0.000-0.001	---	---	1.0-3.0	.55	.55			
	15-24	---	0.000-0.001	---	---	0.5-1.5	.64	.64			
	24-60	---	0.000-0.001	---	---	---	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
693:											
Typic Dystrocryepts, ridges -----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
Typic Histoturbels, ridges -----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
Typic Cryofluvents, ridges -----	0-6	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	2	3	86
	6-9	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	2.0-14	.28	.28			
	9-24	0.75-1.30	1-3	0.08-0.25	1.0-2.9	0.5-1.5	.32	.32			
	24-60	1.00-1.50	1-14	0.01-0.20	1.0-2.9	0.0-0.5	.10	.15			
694:											
Typic Dystrogelepts, mountains -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
Aquic Dystrocryepts, mountains -----	0-5	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	1	4	86
	5-10	0.51-1.20	0.6-2	0.08-0.35	0.0-2.9	11-20	.10	.10			
	10-19	1.35-1.50	2-6	0.04-0.18	0.0-2.9	1.0-3.0	.10	.24			
	19-60	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.0	.10	.32			
Orthels, mountains -----	0-2	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	2-7	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	7-9	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-18	.10	.10			
	9-12	1.00-1.40	1-6	0.12-0.30	1.0-2.9	2.0-5.0	.28	.32			
	12-60	---	0.000-0.001	---	---	0.0-1.0	---	---			
695:											
Typic Dystrogelepts, mountains -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
Aquic Dystrocryepts, mountains -----	0-5	0.07-0.18	0.6-2	0.35-0.50	---	75-90	---	---	1	4	86
	5-10	0.51-1.20	0.6-2	0.08-0.35	0.0-2.9	11-20	.10	.10			
	10-19	1.35-1.50	2-6	0.04-0.18	0.0-2.9	1.0-3.0	.10	.24			
	19-60	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.0	.10	.32			
Typic Haplothels, mountains -----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	2	134
	4-5	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-18	.10	.10			
	5-7	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	7-15	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.20	.32			
	15-60	---	0.000-0.001	---	---	0.0-0.0	.32	.32			
Ruptic Histoturbels, mountains -----	0-12	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	12-14	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	14-17	0.51-1.20	2-6	0.28-0.50	1.0-2.9	12-18	.55	.55			
	17-20	---	0.000-0.001	---	---	2.0-5.0	.55	.55			
	20-39	---	0.000-0.001	---	---	0.0-1.0	.55	.55			
39-60	---	0.000-0.001	---	---	---	---	---				

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
696:											
Typic Dystrogelepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
Lithic Cryofolists, mountains-----	0-8	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	8-10	0.90-1.30	0.6-6	0.13-0.35	1.0-2.9	4.0-12	.20	.20			
	10-60	---	0.000-0.000	---	---	---	---	---			
697:											
Typic Dystrogelepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
Typic Cryaquepts, mountains-----	0-3	0.20-0.30	0.06-2	0.40-0.55	---	60-85	---	---	1	2	134
	3-8	1.20-1.40	1-6	0.03-0.20	1.0-2.9	1.0-3.0	.15	.32			
	8-60	1.30-1.50	1-20	0.01-0.20	1.0-2.9	0.0-0.5	.10	.15			
Humic Dystrocryepts, mountains-----	0-4	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10	1	2	134
	4-11	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	11-27	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.10	.24			
	27-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.15			
698:											
Typic Haplothels, high moraines-----	0-6	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	6-10	0.25-1.10	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	10-15	---	0.000-0.001	---	---	0.0-0.0	.49	.49			
	15-60	---	0.000-0.001	---	---	0.0-0.0	.28	.43			
Typic Aquiturbels, high moraines-----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	2	134
	3-6	0.25-1.10	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	6-11	1.00-1.80	2-6	0.06-0.12	1.0-2.9	1.0-3.0	.20	.20			
	11-22	1.00-1.30	0.6-6	0.18-0.22	1.0-2.9	0.0-1.0	.55	.55			
	22-24	---	0.000-0.001	---	---	0.0-0.0	.15	.15			
	24-60	---	0.000-0.001	---	---	0.0-0.0	.43	.55			
Ruptic Histoturbels, high moraines-----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	5-8	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	8-10	---	0.000-0.001	---	---	10-20	.17	.17			
	10-11	---	0.000-0.001	---	---	0.0-5.0	.64	.64			
	11-60	---	0.000-0.001	---	---	0.0-1.0	.49	.49			
699:											
Typic Haploturbels, mountains-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	2	5	56
	4-5	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	5-19	1.40-1.80	0.6-2	0.06-0.20	1.0-2.9	2.0-5.0	.32	.64			
	19-25	---	0.000-0.001	---	---	0.0-1.0	.32	.64			
	25-60	---	0.000-0.001	---	---	---	---	---			
Typic Cryaquepts, mountains-----	0-3	0.20-0.30	0.06-2	0.40-0.55	---	60-85	---	---	1	2	134
	3-8	1.20-1.40	1-6	0.03-0.20	1.0-2.9	1.0-3.0	.15	.32			
	8-60	1.30-1.50	1-20	0.01-0.20	1.0-2.9	0.0-0.5	.10	.15			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
699:											
Typic Dystroglepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
700:											
Typic Haploturbels, outwash plains-----	0-2	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	7	38
	2-9	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	9-14	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.28	.28			
	14-20	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	20-24	---	0.000-0.001	---	---	0.0-0.0	---	---			
	24-60	---	0.000-0.001	---	---	---	---	---			
Typic Histoturbels, outwash plains-----	0-7	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	7-10	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	10-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	18-20	---	0.000-0.001	---	---	0.0-0.0	---	---			
	20-60	---	0.000-0.001	---	---	---	---	---			
Histels, outwash plains-----	0-20	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	20-24	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	24-27	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	27-34	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	34-60	---	0.000-0.001	---	---	---	---	---			
701:											
Typic Historthels, outwash plains-----	0-7	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	7-12	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	12-14	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	14-24	---	0.000-0.001	---	---	0.0-5.0	.43	.43			
	24-60	---	0.000-0.001	---	---	---	---	---			
Typic Histoturbels, outwash plains-----	0-7	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	7-10	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	10-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	18-20	---	0.000-0.001	---	---	0.0-0.0	---	---			
	20-60	---	0.000-0.001	---	---	---	---	---			
Terric Fibristels, outwash plains-----	0-20	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	20-24	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	24-27	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	27-34	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	34-60	---	0.000-0.001	---	---	---	---	---			
702:											
Typic Histoturbels, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	7-12	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---			
	12-15	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	15-60	---	0.000-0.001	---	---	0.0-5.0	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
703:											
Typic Histoturbels, high moraines -----	0-6	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	6-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-15	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	15-24	---	0.000-0.001	---	---	0.0-5.0	.49	.49			
	24-60	---	0.000-0.001	---	---	---	---	---			
Glacic Aquiturbels, high moraines -----	0-4	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---	1	2	134
	4-14	1.10-1.35	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	14-16	---	0.000-0.001	---	---	0.0-5.0	---	---			
	16-60	---	0.000-0.001	---	---	---	---	---			
Histels, high moraines-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	4-22	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	22-28	---	0.000-0.001	---	---	11-20	.10	.10			
	28-60	---	0.000-0.001	---	---	---	---	---			
704:											
Typic Histoturbels, mountains-----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	3-6	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	6-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.51-1.20	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	18-60	---	0.000-0.001	---	---	0.0-0.5	.43	.64			
Histels, mountains-----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	3-15	0.20-0.30	0.6-2	0.40-0.55	---	60-85	---	---			
	15-20	---	0.000-0.001	---	---	60-85	---	---			
	20-24	---	0.000-0.001	---	---	10-21	---	---			
	24-60	---	0.000-0.001	---	---	---	---	---			
Typic Dystroglepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
705:											
Typic Histoturbels, ridges -----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
Typic Aquiturbels, ridges -----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	5-8	0.90-1.30	2-7	0.19-0.25	1.0-2.9	4.0-8.0	.32	.32			
	8-15	---	0.000-0.001	---	---	1.0-3.0	.55	.55			
	15-24	---	0.000-0.001	---	---	0.5-1.5	.64	.64			
	24-60	---	0.000-0.001	---	---	---	---	---			
Terric Fibristels, ridges -----	0-12	0.05-1.00	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	12-17	---	0.000-0.001	---	---	75-90	---	---			
	17-24	---	0.000-0.001	---	---	1.0-3.0	.43	.43			
	24-60	---	0.000-0.001	---	---	---	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
706:											
Typic Histoturbels, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	7-12	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---			
	12-15	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	15-60	---	0.000-0.001	---	---	0.0-5.0	---	---			
Typic Dystrocryepts, river valleys-----	0-7	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	7-10	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	3.0-6.0	.43	.43			
	10-24	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.49	.49			
	24-60	1.00-1.70	2-6	0.03-0.13	1.0-2.9	0.0-0.0	.10	.10			
707:											
Typic Histoturbels, hills-----	0-6	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	6-11	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	11-16	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	16-21	---	0.000-0.001	---	---	0.0-5.0	.43	.43			
	21-60	---	0.000-0.001	---	---	---	---	---			
Typic Dystrocryepts, hills-----	0-6	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	3	86
	6-8	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	3.0-6.0	.28	.28			
	8-12	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-2.0	.28	.28			
	12-24	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-1.0	.28	.28			
	24-28	1.20-1.50	2-6	0.04-0.14	1.0-2.9	0.0-0.0	.10	.32			
	28-60	---	0.000-0.000	---	---	---	---	---			
708:											
Typic Histoturbels, ridges-----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
Typic Dystrocryepts, ridges-----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
709:											
Typic Histoturbels, ridges-----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
Typic Dystrocryepts, ridges-----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
Terric Fibristels, ridges-----	0-12	0.05-1.00	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	12-17	---	0.000-0.001	---	---	75-90	---	---			
	17-24	---	0.000-0.001	---	---	1.0-3.0	.43	.43			
	24-60	---	0.000-0.001	---	---	---	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
710:											
Typic Histoturbels, ridges -----	0-10	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	10-11	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	11-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-20	---	0.000-0.001	---	---	0.5-2.0	.43	.43			
	20-60	---	0.000-0.001	---	---	0.0-1.0	.37	.55			
Typic Dystrocryepts, ridges -----	0-3	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	3	86
	3-6	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	6-13	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	13-18	1.20-1.40	2-6	0.08-0.15	1.0-2.9	0.0-1.0	.37	.37			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.10			
Typic Historthels, ridges -----	0-9	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	9-11	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	11-15	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.28	.28			
	15-24	---	0.000-0.001	---	---	0.5-2.0	.43	.28			
	24-60	---	0.000-0.001	---	---	0.0-1.0	.28	.28			
711:											
Typic Histoturbels, mountains-----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	3-6	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	6-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.51-1.20	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	18-60	---	0.000-0.001	---	---	0.0-0.5	.43	.64			
Typic Dystrogelepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
712:											
Typic Histoturbels, moraines -----	0-9	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	9-15	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	15-19	0.68-0.87	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	19-28	---	0.000-0.001	---	---	0.0-5.0	.28	.28			
	28-60	---	0.000-0.001	---	---	---	---	---			
Typic Dystrocryepts, moraines -----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	3	86
	4-5	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.32	.32			
	5-8	1.20-1.40	2-6	0.13-0.22	1.0-2.9	1.0-3.0	.20	.20			
	8-24	1.40-1.70	2-6	0.10-0.15	1.0-2.9	0.0-1.0	.20	.37			
	24-60	1.40-1.70	2-6	0.06-0.12	1.0-2.9	0.0-0.0	.20	.37			
Water -----	---	---	---	---	---	---	---	---	-	---	---
713:											
Typic Histoturbels, outwash plains-----	0-7	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	7-10	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	10-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.28	.28			
	18-20	---	0.000-0.001	---	---	0.0-0.0	---	---			
	20-60	---	0.000-0.001	---	---	---	---	---			
Typic Haplothels, outwash plains-----	0-5	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	5-10	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	10-13	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.49	.49			
	13-28	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	0.0-5.0	.55	.55			
	28-60	---	0.000-0.001	---	---	0.0-0.0	---	---			

Table 7. Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Moist bulk density	Permeability	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
							Kw	Kf	T		
	In.	g/cc	In/Hr	In/In	Pct.	Pct.					
713: Terric Hemistels, outwash plains-----	0-20	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	1	8	0
	20-24	0.90-1.30	0.6-2	0.28-0.50	1.0-2.9	4.0-12	.28	.28			
	24-27	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	27-34	---	0.000-0.001	---	---	2.0-5.0	.64	.64			
	34-60	---	0.000-0.001	---	---	---	---	---			
714: Typic Histoturbels, mountains-----	0-3	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	8	0
	3-6	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---			
	6-13	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	13-18	0.51-1.20	0.6-2	0.28-0.50	1.0-2.9	2.0-5.0	.49	.49			
	18-60	---	0.000-0.001	---	---	0.0-0.5	.43	.64			
Typic Haploturbels, mountains-----	0-4	0.07-0.18	2-6	0.35-0.50	---	75-90	---	---	2	5	56
	4-5	0.51-1.20	0.6-2	0.22-0.40	1.0-2.9	11-20	.10	.10			
	5-19	1.40-1.80	0.6-2	0.06-0.20	1.0-2.9	2.0-5.0	.32	.64			
	19-25	---	0.000-0.001	---	---	0.0-1.0	.32	.64			
	25-60	---	0.000-0.001	---	---	---	---	---			
Typic Dystrogelepts, mountains-----	0-4	0.05-0.10	2-6	0.05-0.35	---	85-95	---	---	1	2	134
	4-6	0.51-1.20	0.6-2	0.22-0.34	1.0-2.9	5.0-20	.10	.10			
	6-9	0.68-0.87	0.6-2	0.22-0.34	1.0-2.9	0.0-5.0	.28	.28			
	9-18	1.40-1.80	2-6	0.06-0.20	1.0-2.9	2.0-5.0	.28	.49			
	18-60	1.40-1.70	2-6	0.03-0.04	1.0-2.9	0.0-1.0	.10	.32			
715: Volkmar -----	0-3	0.05-0.18	0.6-20	0.05-0.50	0.0-2.9	75-95	---	---	3	3	86
	3-10	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	1.0-5.0	.49	.49			
	10-30	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	0.0-1.0	.55	.55			
	30-60	1.60-1.70	6-20	0.05-0.07	0.0-2.9	0.0-1.0	.10	.10			
716: Volkmar -----	0-3	0.05-0.18	0.6-20	0.05-0.50	0.0-2.9	75-95	---	---	3	3	86
	3-10	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	1.0-5.0	.49	.49			
	10-30	1.10-1.20	0.6-2	0.20-0.23	0.0-2.9	0.0-1.0	.55	.55			
	30-60	1.60-1.70	6-20	0.05-0.07	0.0-2.9	0.0-1.0	.10	.10			
Nenana-----	0-2	0.07-0.18	0.6-2	0.35-0.50	0.0-2.9	75-90	---	---	2	3	86
	2-15	1.10-1.20	0.6-2	0.20-0.22	0.0-2.9	3.0-6.0	.49	.49			
	15-21	1.20-1.30	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.43	.64			
	21-60	1.40-1.50	6-20	0.02-0.04	0.0-2.9	0.0-1.0	.10	.10			
717: Water -----	---	---	---	---	---	---	---	---	-	---	---

Table 8. Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
601:				
Aquic Dystricrypts, high moraines-----	0-2	120-240	---	4.8-6.2
	2-4	4-17	---	5.5-6.2
	4-16	0-9	---	5.6-6.4
	16-60	0-5	---	5.8-6.4
Typic Dystricrypts, high moraines-----	0-2	---	120-210	4.6-6.2
	2-3	9-19	---	4.7-6.3
	3-4	1-5	---	5.3-6.2
	4-9	1-3	---	5.3-6.2
	9-60	1-3	---	5.8-6.4
Histels, high moraines-----	0-4	---	120-210	4.6-6.2
	4-22	---	120-240	4.6-6.2
	22-28	---	22-47	5.2-5.6
	28-60	---	---	---
602:				
Audrey-----	0-1	120-210	---	4.5-6.0
	1-8	7-20	---	5.1-6.0
	8-17	2-12	---	5.6-6.5
	17-28	1-5	---	6.1-7.3
	28-60	1-4	---	6.1-7.3
Butchlake, gently sloping-----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
Typic Aquiturbels-----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
603:				
Audrey-----	0-1	120-210	---	4.5-6.0
	1-8	7-20	---	5.1-6.0
	8-17	2-12	---	5.6-6.5
	17-28	1-5	---	6.1-7.3
	28-60	1-4	---	6.1-7.3
Typic Aquiturbels-----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
604:				
Babel-----	0-2	---	120-210	4.5-5.5
	2-4	---	51-124	4.5-6.5
	4-8	3-17	---	4.5-6.5
	8-18	2-6	---	5.6-6.5
	18-25	2-6	---	5.6-6.5
	25-60	---	---	5.6-6.5

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
605: Babel -----	0-2	---	120-210	4.5-5.5
	2-4	---	51-124	4.5-6.5
	4-8	3-17	---	4.5-6.5
	8-25	2-6	---	5.6-6.5
	25-60	---	---	5.6-6.5
Butchlake -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
606: Babel -----	0-2	---	120-210	4.5-5.5
	2-4	---	51-124	4.5-6.5
	4-8	3-17	---	4.5-6.5
	8-25	2-6	---	5.6-6.5
	25-60	---	---	5.6-6.5
Butchlake -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
607: Butchlake -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
608: Butchlake -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
609: Butchlake, moderately steep -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
Nomercy Lake -----	0-2	---	120-210	4.6-6.2
	2-4	---	4-14	5.0-6.5
	4-13	2-6	---	5.6-6.5
	13-60	1-4	---	5.6-6.5
Butchlake, very steep -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
610: Butchlake, gently sloping -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
610: Southpaw -----	0-4	---	15-50	3.5-6.0
	4-13	5-15	---	5.6-6.5
	13-22	4-9	---	5.6-6.5
	22-36	1-3	---	6.1-7.3
	36-60	1-3	---	6.1-7.3
611: Butchlake -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
Southpaw -----	0-4	---	15-50	3.5-6.0
	4-13	5-15	---	5.6-6.5
	13-22	4-9	---	5.6-6.5
	22-36	1-3	---	6.1-7.3
	36-60	1-3	---	6.1-7.3
612: Butchlake, strongly sloping -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
Southpaw -----	0-4	---	15-50	3.5-6.0
	4-13	5-15	---	5.6-6.5
	13-22	4-9	---	5.6-6.5
	22-36	1-3	---	6.1-7.3
	36-60	1-3	---	6.1-7.3
613: Chena -----	0-4	115-155	---	5.1-6.0
	4-9	5-20	---	5.6-6.5
	9-60	1-5	---	5.6-6.5
614: Chena -----	0-4	115-155	---	5.1-6.0
	4-9	5-20	---	5.6-6.5
	9-60	1-5	---	5.6-6.5
615: Chetlake -----	0-3	---	---	5.1-6.5
	3-20	3-12	---	5.1-6.5
	20-26	2-14	---	5.1-6.5
	26-31	1-5	---	5.6-6.5
	31-60	1-5	---	5.6-6.5
616: Donnelly -----	0-2	---	15-50	3.5-5.0
	2-6	4-11	---	5.1-6.0
	6-12	2-5	---	5.6-6.0
	12-60	0-3	---	6.1-7.3
617: Donnelly, very steep -----	0-2	---	15-50	3.5-5.0
	2-6	4-11	---	5.1-6.0
	6-12	2-5	---	5.6-6.0
	12-60	0-3	---	6.1-7.3

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
618: Donnelly-----	0-2	---	15-50	3.5-5.0
	2-6	4-11	---	5.1-6.0
	6-12	2-5	---	5.6-6.0
	12-60	0-3	---	6.1-7.3
Nenana-----	0-2	---	120-210	5.1-6.1
	2-15	5-10	---	5.1-6.5
	15-21	1-5	---	5.6-6.5
	21-60	1-5	---	5.6-6.5
619: Gerstle-----	0-5	---	15-50	3.5-5.0
	5-7	20-40	---	5.1-6.0
	7-60	5-20	---	5.1-6.0
Moosehead-----	0-5	---	15-50	3.5-5.0
	5-6	20-40	---	5.1-6.0
	6-10	8-20	---	5.6-6.4
	10-60	2-8	---	6.1-7.3
620: Gerstle-----	0-5	---	15-50	3.5-5.0
	5-7	20-40	---	5.1-6.0
	7-60	5-20	---	5.1-6.0
Tanana-----	0-3	---	15-50	4.5-5.0
	3-6	15-30	---	5.1-6.0
	6-25	5-20	---	5.6-7.3
	25-60	---	---	6.6-7.3
621: Pits, gravel-----		---	---	---
622: Histels, outwash plains-----	0-20	---	120-210	4.6-5.6
	20-24	9-19	---	4.7-6.3
	24-27	6-15	---	5.4-6.0
	27-34	6-15	---	5.4-6.0
	34-60	---	---	---
623: Histels, outwash plains-----	0-20	---	120-210	4.6-5.6
	20-24	9-19	---	4.7-6.3
	24-34	6-15	---	5.4-6.0
	34-60	---	---	---
Orthels, outwash plains-----	0-5	---	15-50	4.0-5.2
	5-10	---	15-50	4.2-5.2
	10-13	---	5-9	4.3-5.5
	13-28	---	5-9	4.8-5.5
	28-60	---	2-5	5.1-5.5
Turbels, outwash plains-----	0-7	---	15-50	4.0-5.2
	7-10	---	120-210	4.6-6.2
	10-13	---	22-47	5.2-5.6
	13-18	5-9	---	5.2-6.4
	18-20	5-9	---	5.2-6.4
	20-60	---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
624:				
Histels, mountains -----	0-3	---	15-50	4.0-5.2
	3-15	---	120-240	4.6-6.2
	15-20	---	120-240	4.6-6.2
	20-24	---	21-44	5.4-5.8
	24-60	---	---	---
Orthels, mountains -----	0-2	---	15-50	4.0-5.2
	2-7	---	120-240	4.0-5.5
	7-9	---	15-25	4.0-6.3
	9-12	5-9	---	5.1-6.4
	12-60	5-9	---	5.1-6.5
Typic Dystroglepts, mountains -----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
625:				
Histels, high moraines -----	0-4	---	120-210	4.6-6.2
	4-22	---	120-240	4.6-6.2
	22-28	---	22-47	5.2-5.6
	28-60	---	---	---
Turbels, high moraines -----	0-6	---	15-50	4.2-5.2
	6-11	---	15-50	4.6-6.2
	11-12	---	15-50	4.2-5.6
	12-24	10-25	---	5.2-6.4
	24-60	---	---	---
626:				
Histels, high moraines -----	0-4	---	120-210	4.6-6.2
	4-22	---	120-240	4.6-6.2
	22-28	---	22-47	5.2-5.6
	28-60	---	---	---
Typic Cryaquepts, high moraines -----	0-4	30-90	---	5.2-6.6
	4-12	2-20	---	5.4-7.4
	12-60	2-20	---	5.4-7.4
Typic Dystrcryepts, high moraines ----	0-2	---	120-210	4.6-6.2
	2-3	9-19	---	4.7-6.3
	3-4	1-5	---	5.3-6.2
	4-9	1-3	---	5.3-6.2
	9-60	1-3	---	5.8-6.4
627:				
Histels, river valleys -----	0-13	---	15-50	4.0-5.2
	13-18	---	120-240	4.6-6.2
	18-60	5-9	---	5.2-6.4
Typic Histoturbels, river valleys -----	0-7	---	120-210	4.6-6.2
	7-12	---	15-50	4.0-5.6
	12-15	---	9-19	4.7-6.3
	15-60	5-9	---	5.2-6.4

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
627:				
Typic Historthels, river valleys-----	0-5	---	15-50	4.0-5.2
	5-10	---	120-210	4.6-6.2
	10-12	5-9	---	5.2-6.4
	12-16	5-9	---	5.2-6.4
	16-60	---	---	---
Typic Aquiturbels, river valleys-----	0-4	---	120-210	4.6-6.2
	4-6	---	15-50	5.2-5.6
	6-16	5-9	---	5.2-6.4
	16-60	---	---	---
628:				
Humic Dystrocryepts, high moraines ---	0-2	---	15-50	4.6-6.2
	2-12	---	15-25	4.7-6.3
	12-60	1-7	---	5.8-6.4
Aquic Umbrorthels, high moraines -----	0-4	---	15-50	4.0-5.2
	4-12	---	15-50	5.2-5.6
	12-17	---	15-25	5.4-6.0
	17-28	---	3-15	5.4-6.0
	28-60	---	---	---
629:				
Jarvis-----	0-2	50-150	---	5.6-6.6
	2-6	15-30	---	5.1-6.5
	6-24	1-5	---	5.6-7.3
	24-60	1-5	---	5.6-7.3
630:				
Jarvis-----	0-2	50-150	---	5.6-6.6
	2-6	15-30	---	5.1-6.5
	6-24	1-5	---	5.6-7.3
	24-60	1-5	---	5.6-7.3
631:				
Jarvis-----	0-2	50-150	---	5.6-6.6
	2-6	15-30	---	5.1-6.5
	6-24	1-5	---	5.6-7.3
	24-60	1-5	---	5.6-7.3
Chena-----	0-4	115-155	---	5.1-6.0
	4-9	5-20	---	5.6-6.5
	9-60	1-5	---	5.6-6.5
632:				
Chena-----	0-4	115-155	---	5.1-6.0
	4-9	5-20	---	5.6-6.5
	9-60	1-5	---	5.6-6.5
Jarvis-----	0-2	50-150	---	5.6-6.6
	2-6	15-30	---	5.1-6.5
	6-24	1-5	---	5.6-7.3
	24-60	1-5	---	5.6-7.3

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
633: Jarvis-----	0-2	50-150	---	5.6-6.6
	2-6	15-30	---	5.1-6.5
	6-24	1-5	---	5.6-7.3
	24-60	1-5	---	5.6-7.3
Salchaket -----	0-3	---	15-50	4.5-5.6
	3-24	15-30	---	5.1-6.0
	24-45	5-15	---	5.6-7.3
	45-60	1-5	---	6.1-7.3
634: Lithic Cryofolists, mountains-----	0-8	---	15-50	4.4-5.2
	8-10	---	1-13	4.4-6.0
	10-60	---	---	---
Typic Cryorthents, mountains-----	0-4	---	120-210	4.8-5.6
	4-6	3-9	---	5.0-6.2
	6-60	1-3	---	5.0-6.3
Typic Dystrogelepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
Typic Histoturbels, mountains-----	0-3	---	15-50	4.4-5.6
	3-6	---	120-210	4.4-5.6
	6-13	---	15-50	5.0-5.8
	13-18	---	5-15	5.0-6.0
	18-60	---	5-15	5.0-6.0
635: McKinley, moderately steep-----	0-2	9-24	---	5.6-6.0
	2-12	2-8	---	4.5-5.5
	12-26	0-6	---	5.6-6.0
	26-30	1-5	---	6.1-6.5
	30-60	---	---	---
636: McKinley, very steep-----	0-2	9-24	---	5.6-6.0
	2-12	2-8	---	4.5-5.5
	12-26	0-6	---	5.6-6.0
	26-30	1-5	---	6.1-6.5
	30-60	---	---	---
637: Moosehead-----	0-5	---	15-50	3.5-5.0
	5-6	20-40	---	5.1-6.0
	6-10	8-20	---	5.6-6.4
	10-60	2-8	---	6.1-7.3
638: Mosquito-----	0-18	115-155	---	5.1-6.1
	18-42	30-50	---	5.6-6.6
	42-60	---	---	5.6-6.6

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
639: Nenana -----	0-2	---	120-210	5.1-6.1
	2-15	5-10	---	5.1-6.5
	15-21	1-5	---	5.6-6.5
	21-60	1-5	---	5.6-6.5
640: Nenana -----	0-2	---	120-210	5.1-6.1
	2-15	5-10	---	5.1-6.5
	15-21	1-5	---	5.6-6.5
	21-60	1-5	---	5.6-6.5
Donnelly -----	0-2	---	15-50	3.5-5.0
	2-6	4-11	---	5.1-6.0
	6-12	2-5	---	5.6-6.0
	12-60	0-3	---	6.1-7.3
641: Nenana -----	0-2	---	120-210	5.1-6.1
	2-15	5-10	---	5.1-6.5
	15-21	1-5	---	5.6-6.5
	21-60	1-5	---	5.6-6.5
Donnelly -----	0-2	---	15-50	3.5-5.0
	2-6	4-11	---	5.1-6.0
	6-12	2-5	---	5.6-6.0
	12-60	0-3	---	6.1-7.3
642: Nenana -----	0-2	---	120-210	5.1-6.1
	2-15	5-10	---	5.1-6.5
	15-21	1-5	---	5.6-6.5
	21-60	1-5	---	5.6-6.5
Urban land -----		---	---	---
643: Ninchuun -----	0-6	120-210	---	3.5-5.5
	6-12	7-20	---	5.1-6.5
	12-16	3-14	---	6.1-6.5
	16-20	2-10	---	5.6-6.5
	20-32	2-10	---	5.6-6.5
	32-60	1-6	---	6.1-6.6
644: Ninchuun -----	0-6	120-210	---	3.5-5.5
	6-12	7-20	---	5.1-6.5
	12-16	3-14	---	6.1-6.5
	16-20	2-10	---	5.6-6.5
	20-32	2-10	---	5.6-6.5
	32-60	1-6	---	6.1-6.6
Audrey -----	0-1	120-210	---	4.5-6.0
	1-8	7-20	---	5.1-6.0
	8-17	2-12	---	5.6-6.5
	17-28	1-5	---	6.1-7.3
	28-60	1-4	---	6.1-7.3

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
645: Ninchuun-----	0-6	120-210	---	3.5-5.5
	6-12	7-20	---	5.1-6.5
	12-16	3-14	---	6.1-6.5
	16-20	2-10	---	5.6-6.5
	20-32	2-10	---	5.6-6.5
	32-60	1-6	---	6.1-6.6
Audrey-----	0-1	120-210	---	4.5-6.0
	1-8	7-20	---	5.1-6.0
	8-17	2-12	---	5.6-6.5
	17-28	1-5	---	6.1-7.3
	28-60	1-4	---	6.1-7.3
646: Nomeracy Lake-----	0-2	---	120-210	4.6-6.2
	2-4	---	4-14	5.0-6.5
	4-13	2-6	---	5.6-6.5
	13-60	1-4	---	5.6-6.5
Butchlake-----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
Water-----		---	---	---
647: Riverwash-----		---	---	---
648: Salchaket-----	0-3	---	15-50	4.5-5.6
	3-24	15-30	---	5.1-6.0
	24-45	5-15	---	5.6-7.3
	45-60	1-5	---	6.1-7.3
649: Salchaket-----	0-3	---	15-50	4.5-5.6
	3-24	15-30	---	5.1-6.0
	24-45	5-15	---	5.6-7.3
	45-60	1-5	---	6.1-7.3
650: Tanacross-----	0-9	---	15-50	3.5-5.0
	9-11	20-40	---	5.1-6.0
	11-17	5-20	---	5.1-6.0
	17-60	---	---	5.1-6.0
651: Tanana-----	0-3	---	15-50	4.5-5.0
	3-6	15-30	---	5.1-6.0
	6-25	5-20	---	5.6-7.3
	25-60	---	---	6.6-7.3

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
652:				
Terric Fibristels, river valleys -----	0-13	---	15-50	4.0-5.2
	13-18	---	120-240	4.6-6.2
	18-60	5-9	---	5.2-6.4
Ruptic-Histic	0-4	---	15-50	4.0-5.2
Aquiturbels, river valleys -----	4-7	---	120-210	4.6-6.2
	7-8	---	15-50	5.2-5.6
	8-28	5-9	---	5.2-6.4
	28-60	---	---	---
Typic Aquiturbels, river valleys -----	0-4	---	120-210	4.6-6.2
	4-6	---	15-50	5.2-5.6
	6-16	5-9	---	5.2-6.4
	16-60	---	---	---
Typic Histoturbels, river valleys -----	0-7	---	120-210	4.6-6.2
	7-12	---	15-50	4.0-5.6
	12-15	---	9-19	4.7-6.3
	15-60	5-9	---	5.2-6.4
653:				
Terric Fibristels, moraines -----	0-15	---	15-50	4.0-5.2
	15-20	---	120-240	4.6-6.2
	20-27	---	15-50	5.2-5.6
	27-32	---	0-0	5.3-5.6
	32-60	---	---	---
Typic Histoturbels, moraines -----	0-9	---	120-210	4.6-6.2
	9-15	---	15-50	5.2-5.6
	15-19	5-9	---	5.2-6.4
	19-28	5-9	---	5.2-6.4
	28-60	---	---	---
654:				
Terric Hemistels -----	0-20	120-210	---	5.1-6.5
	20-24	8-124	---	5.6-6.5
	24-60	10-20	---	6.1-7.3
655:				
Terric Hemistels -----	0-20	120-210	---	5.1-6.5
	20-24	8-124	---	5.6-6.5
	24-60	10-20	---	6.1-7.3
Typic Aquiturbels -----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
656:				
Tetlin, moderately steep -----	0-6	---	15-50	3.5-5.0
	6-24	10-30	---	5.6-7.8
	24-60	---	---	6.2-7.6
657:				
Tetlin -----	0-6	---	15-50	3.5-5.0
	6-24	10-30	---	5.6-7.8
	24-60	---	---	6.2-7.6

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
658: Tetlin -----	0-6	---	15-50	3.5-5.0
	6-24	10-30	---	5.6-7.8
	24-60	---	---	6.2-7.6
659: Glacier -----		---	---	---
660: Turbels -----	0-3	150-180	---	5.1-7.3
	3-6	7-20	---	5.6-6.5
	6-18	3-14	---	5.6-6.5
	18-30	1-7	---	6.1-7.3
	30-60	1-7	---	6.1-7.3
Tetlin -----	0-6	---	15-50	3.5-5.0
	6-24	10-30	---	5.6-7.8
	24-60	---	---	6.2-7.6
661: Turbels, moderately steep -----	0-3	150-180	---	5.1-7.3
	3-6	7-20	---	5.6-6.5
	6-18	3-14	---	5.6-6.5
	18-30	1-7	---	6.1-7.3
	30-60	1-7	---	6.1-7.3
662: Turbels, steep -----	0-3	150-180	---	5.1-7.3
	3-6	7-20	---	5.6-6.5
	6-18	3-14	---	5.6-6.5
	18-30	1-7	---	6.1-7.3
	30-60	1-7	---	6.1-7.3
663: Turbels, very steep -----	0-3	150-180	---	5.1-7.3
	3-6	7-20	---	5.6-6.5
	6-18	3-14	---	5.6-6.5
	18-30	1-7	---	6.1-7.3
	30-60	1-7	---	6.1-7.3
664: Turbels, mountains -----	0-4	---	15-50	4.0-5.2
	4-7	---	120-210	4.6-6.2
	7-9	---	120-210	4.6-6.2
	9-15	5-9	---	5.2-6.4
	15-60	1-5	---	5.2-6.0
Aquic Dystrocryepts, mountains -----	0-5	---	120-210	4.8-7.0
	5-10	---	15-50	4.8-6.6
	10-19	2-11	---	5.4-6.8
	19-60	0-5	---	5.6-7.2
Water -----		---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
665: Turbels, mountains-----	0-4	---	15-50	4.0-5.2
	4-7	---	120-210	4.6-6.2
	7-9	---	120-210	4.6-6.2
	9-15	5-9	---	5.2-6.4
	15-60	1-5	---	5.2-6.0
Typic Dystroglepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
Ruptic-Histic Aquiturbels, mountains --	0-1	---	115-135	4.6-5.6
	1-3	---	1-13	5.0-5.6
	3-30	---	1-5	5.0-6.6
	30-60	9-19	---	6.0-7.0
666: Typic Aquiturbels -----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
667: Typic Aquiturbels -----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
668: Typic Aquiturbels, gently sloping -----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
669: Typic Aquiturbels -----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
Butchlake -----	0-3	---	15-50	3.5-6.0
	3-4	---	12-27	4.5-6.0
	4-9	4-13	---	5.6-6.5
	9-60	2-5	---	5.1-6.5
Southpaw -----	0-4	---	15-50	3.5-6.0
	4-13	5-15	---	5.6-6.5
	13-22	4-9	---	5.6-6.5
	22-36	1-3	---	6.1-7.3
	36-60	1-3	---	6.1-7.3

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
670:				
Typic Aquiturbels -----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
Terric Hemistels-----	0-20	120-210	---	5.1-6.5
	20-24	8-124	---	5.6-6.5
	24-60	10-20	---	6.1-7.3
671:				
Typic Aquiturbels -----	0-7	50-150	---	4.5-6.5
	7-15	4-18	---	6.1-7.3
	15-33	4-18	---	6.1-7.3
	33-41	4-18	---	6.1-7.3
	41-60	4-18	---	6.1-7.3
Terric Hemistels-----	0-20	120-210	---	5.1-6.5
	20-24	8-124	---	5.6-6.5
	24-60	10-20	---	6.1-7.3
672:				
Typic Aquiturbels, ridges-----	0-5	---	15-50	4.3-6.0
	5-8	---	14-20	4.4-6.0
	8-15	---	5-9	4.4-6.0
	15-24	---	5-9	4.8-6.0
	24-60	---	---	---
Typic Dystrocryepts, ridges -----	0-3	---	120-210	4.6-6.2
	3-6	9-19	---	4.7-6.3
	6-13	5-9	---	5.2-6.4
	13-18	1-5	---	5.3-6.0
	18-60	1-5	---	5.5-6.5
673:				
Typic Aquiturbels, moraines -----	0-6	---	15-50	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-19	5-9	---	5.2-6.4
	19-24	5-9	---	5.2-6.4
	24-60	5-9	---	5.4-6.2
Typic Dystrocryepts, moraines -----	0-4	---	15-50	4.0-5.2
	4-5	9-19	---	4.7-6.3
	5-8	3-9	---	5.5-6.4
	8-24	1-4	---	5.9-6.9
	24-60	1-2	---	6.2-6.9
Typic Haploturbels, moraines-----	0-4	---	15-50	4.0-5.2
	4-6	---	15-50	5.2-5.6
	6-8	9-19	---	4.7-6.3
	8-11	5-9	---	5.2-6.4
	11-16	---	---	5.5-6.0
	16-60	---	---	5.6-6.0

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
674:				
Typic Aquiturbels, river valleys -----	0-4	---	120-210	4.6-6.2
	4-6	---	15-50	5.2-5.6
	6-16	5-9	---	5.2-6.4
	16-60	---	---	---
Typic Histoturbels, river valleys -----	0-7	---	120-210	4.6-6.2
	7-12	---	15-50	4.0-5.6
	12-15	---	9-19	4.7-6.3
	15-60	5-9	---	5.2-6.4
675:				
Typic Aquorthels, mountains-----	0-3	30-90	---	5.2-7.3
	3-14	5-15	---	5.6-7.3
	14-24	5-15	---	5.6-7.3
	24-60	---	---	---
Typic Histoturbels, mountains -----	0-3	---	15-50	4.4-5.6
	3-6	---	120-210	4.4-5.6
	6-13	---	15-50	5.0-5.8
	13-18	---	5-15	5.0-6.0
	18-60	---	5-15	5.0-6.0
676:				
Typic Cryaquepts -----	0-4	5-18	---	6.1-7.3
	4-8	3-8	---	6.8-7.2
	8-29	2-5	---	6.6-7.0
	29-35	4-10	---	6.4-6.8
	35-56	14-18	---	7.4-7.8
	56-60	4-10	---	7.9-8.4
677:				
Typic Cryofluvents, river valleys -----	0-2	---	15-50	4.0-5.2
	2-4	7-45	---	5.0-6.2
	4-11	1-4	---	6.0-7.0
	11-60	1-2	---	6.5-7.0
678:				
Typic Cryofluvents, river valleys -----	0-2	---	15-50	4.0-5.2
	2-4	7-45	---	5.0-6.2
	4-11	1-4	---	6.0-7.0
	11-60	1-2	---	6.5-7.0
Histels, river valleys -----	0-13	---	15-50	4.0-5.2
	13-18	---	120-240	4.6-6.2
	18-60	5-9	---	5.2-6.4
Typic Haploturbels, river valleys -----	0-6	---	120-210	4.6-6.2
	6-10	---	15-50	5.2-5.6
	10-15	5-9	---	5.2-6.4
	15-23	5-9	---	5.2-6.4
	23-28	4-7	---	5.2-6.4
	28-60	---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
679:				
Typic Cryofluvents, river valleys -----	0-2	---	15-50	4.0-5.2
	2-4	7-45	---	5.0-6.2
	4-11	1-4	---	6.0-7.0
	11-60	1-2	---	6.5-7.0
Typic Dystrocryepts, river valleys-----	0-7	---	120-210	4.6-6.2
	7-10	8-17	---	5.2-6.4
	10-24	5-9	---	5.2-6.4
	24-60	1-3	---	5.4-7.0
680:				
Typic Cryofluvents, river valleys -----	0-2	---	15-50	4.0-5.2
	2-4	7-45	---	5.0-6.2
	4-11	1-4	---	6.0-7.0
	11-60	1-2	---	6.5-7.0
Typic Dystrocryepts, river valleys-----	0-7	---	120-210	4.6-6.2
	7-10	8-17	---	5.2-6.4
	10-24	5-9	---	5.2-6.4
	24-60	1-3	---	5.4-7.0
Typic Histoturbels, river valleys -----	0-7	---	120-210	4.6-6.2
	7-12	---	15-50	4.0-5.6
	12-15	---	9-19	4.7-6.3
	15-60	5-9	---	5.2-6.4
681:				
Typic Dystrocryepts, ridges -----	0-3	---	120-210	4.6-6.2
	3-6	9-19	---	4.7-6.3
	6-13	5-9	---	5.2-6.4
	13-18	1-5	---	5.3-6.0
	18-60	1-5	---	5.5-6.5
Ruptic-Histic Aquiturbels, ridges-----	0-4	---	15-50	4.0-5.2
	4-9	---	15-50	5.2-5.6
	9-21	5-9	---	5.2-6.4
	21-60	5-9	---	5.2-6.4
682:				
Typic Dystrocryepts, high moraines ---	0-2	---	120-210	4.6-6.2
	2-3	9-19	---	4.7-6.3
	3-4	1-5	---	5.3-6.2
	4-9	1-3	---	5.3-6.2
	9-60	1-3	---	5.8-6.4
Turbels, high moraines-----	0-6	---	15-50	4.2-5.2
	6-11	---	15-50	4.6-6.2
	11-12	---	15-50	4.2-5.6
	12-24	10-25	---	5.2-6.4
	24-60	---	---	---
Water-----		---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
683:				
Typic Dystricrypts, moraines -----	0-4	---	15-50	4.0-5.2
	4-5	9-19	---	4.7-6.3
	5-8	3-9	---	5.5-6.4
	8-24	1-4	---	5.9-6.9
	24-60	1-2	---	6.2-6.9
Turbels, moraines -----	0-5	---	15-50	4.0-5.2
	5-10	---	22-47	5.2-5.6
	10-19	5-9	---	5.2-6.4
	19-24	0-0	---	5.6-6.4
	24-60	---	---	---
Water-----		---	---	---
684:				
Typic Dystricrypts, outwash plains --	0-2	120-210	---	4.2-6.4
	2-5	---	15-50	4.6-6.0
	5-16	6-15	---	5.4-6.4
	16-30	2-5	---	5.4-6.4
	30-60	2-5	---	5.6-6.5
Typic Aquiturbels, outwash plains-----	0-2	---	120-210	4.4-5.2
	2-7	---	15-50	4.9-5.4
	7-12	---	15-25	4.9-5.5
	12-22	---	5-15	5.2-5.6
	22-31	---	2-9	5.2-5.5
	31-60	---	---	---
Typic Haplothels, outwash plains-----	0-5	---	15-50	4.0-5.2
	5-10	---	15-50	4.2-5.2
	10-13	---	5-9	4.3-5.5
	13-28	---	5-9	4.8-5.5
	28-60	---	2-5	5.1-5.5
685:				
Typic Dystricrypts, high moraines ---	0-2	---	120-210	4.6-6.2
	2-3	9-19	---	4.7-6.3
	3-4	1-5	---	5.3-6.2
	4-9	1-3	---	5.3-6.2
	9-60	1-3	---	5.8-6.4
Typic Cryaquepts, high moraines-----	0-4	30-90	---	5.2-6.6
	4-12	2-20	---	5.4-7.4
	12-60	2-20	---	5.4-7.4
Aquic Dystricrypts, high moraines ---	0-2	120-240	---	4.8-6.2
	2-4	4-17	---	5.5-6.2
	4-16	0-9	---	5.6-6.4
	16-60	0-5	---	5.8-6.4
Ruptic Histoturbels, high moraines-----	0-5	---	15-50	4.2-5.3
	5-8	50-150	---	5.0-6.2
	8-10	15-325	---	5.0-7.0
	10-11	10-25	---	5.0-6.2
	11-60	2-20	---	5.6-6.2

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
686:				
Typic Dystrocryepts, moraines -----	0-4	---	15-50	4.0-5.2
	4-5	9-19	---	4.7-6.3
	5-8	3-9	---	5.5-6.4
	8-24	1-4	---	5.9-6.9
	24-60	1-2	---	6.2-6.9
Typic Cryaquepts, moraines -----	0-5	---	5-9	5.2-6.4
	5-41	5-9	---	5.2-6.4
	41-60	5-9	---	5.2-6.4
Typic Histoturbels, moraines-----	0-9	---	120-210	4.6-6.2
	9-15	---	15-50	5.2-5.6
	15-19	5-9	---	5.2-6.4
	19-28	5-9	---	5.2-6.4
	28-60	---	---	---
687:				
Typic Dystrocryepts, ridges -----	0-3	---	120-210	4.6-6.2
	3-6	9-19	---	4.7-6.3
	6-13	5-9	---	5.2-6.4
	13-18	1-5	---	5.3-6.0
	18-60	1-5	---	5.5-6.5
Typic Haplocryands, ridges -----	0-3	115-155	---	5.1-6.0
	3-23	5-9	---	5.2-6.4
	23-60	1-5	---	5.3-6.5
Typic Histoturbels, ridges-----	0-10	---	15-50	4.0-5.2
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
688:				
Typic Dystrocryepts, moraines -----	0-4	---	15-50	4.0-5.2
	4-5	9-19	---	4.7-6.3
	5-8	3-9	---	5.5-6.4
	8-24	1-4	---	5.9-6.9
	24-60	1-2	---	6.2-6.9
Typic Haploturbels, moraines-----	0-4	---	15-50	4.0-5.2
	4-6	---	15-50	5.2-5.6
	6-8	9-19	---	4.7-6.3
	8-11	5-9	---	5.2-6.4
	11-16	---	---	5.5-6.0
	16-60	---	---	5.6-6.0
Typic Aquiturbels, moraines -----	0-6	---	15-50	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-19	5-9	---	5.2-6.4
	19-24	5-9	---	5.2-6.4
	24-60	5-9	---	5.4-6.2

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
689:				
Typic Dystricrypts, moraines -----	0-4	---	15-50	4.0-5.2
	4-5	9-19	---	4.7-6.3
	5-8	3-9	---	5.5-6.4
	8-24	1-4	---	5.9-6.9
	24-60	1-2	---	6.2-6.9
Typic Histoturbels, moraines-----	0-9	---	120-210	4.6-6.2
	9-15	---	15-50	5.2-5.6
	15-28	5-9	---	5.2-6.4
	28-60	---	---	---
690:				
Typic Dystricrypts, ridges -----	0-3	---	120-210	4.6-6.2
	3-6	9-19	---	4.7-6.3
	6-13	5-9	---	5.2-6.4
	13-18	1-5	---	5.3-6.0
	18-60	1-5	---	5.5-6.5
Typic Histoturbels, ridges-----	0-10	---	15-50	4.0-5.2
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
691:				
Typic Dystricrypts, high moraines ---	0-2	---	120-210	4.6-6.2
	2-3	9-19	---	4.7-6.3
	3-4	1-5	---	5.3-6.2
	4-9	1-3	---	5.3-6.2
	9-60	1-3	---	5.8-6.4
Typic Histoturbels, high moraines -----	0-6	---	15-50	4.2-5.2
	6-11	---	15-50	4.6-6.2
	11-15	---	15-50	4.2-5.6
	15-24	---	5-15	5.2-6.4
	24-60	---	---	---
Folists, high moraines -----	0-10	---	15-50	4.4-6.2
	10-14	---	15-50	4.4-5.6
	14-60	---	---	---
692:				
Typic Dystricrypts, ridges -----	0-3	---	120-210	4.6-6.2
	3-6	9-19	---	4.7-6.3
	6-13	5-9	---	5.2-6.4
	13-18	1-5	---	5.3-6.0
	18-60	1-5	---	5.5-6.5
Typic Histoturbels, ridges-----	0-10	---	15-50	4.0-5.2
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
Typic Aquiturbels, ridges-----	0-5	---	15-50	4.3-6.0
	5-8	---	14-20	4.4-6.0
	8-15	---	5-9	4.4-6.0
	15-24	---	5-9	4.8-6.0
	24-60	---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
693:				
Typic Dystrocryepts, ridges -----	0-3	---	120-210	4.6-6.2
	3-6	9-19	---	4.7-6.3
	6-13	5-9	---	5.2-6.4
	13-18	1-5	---	5.3-6.0
	18-60	1-5	---	5.5-6.5
Typic Histoturbels, ridges -----	0-10	---	15-50	4.0-5.2
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
Typic Cryofluvents, ridges -----	0-6	---	15-50	4.0-6.0
	6-9	9-19	---	4.9-6.0
	9-24	5-15	---	4.7-5.8
	24-60	1-10	---	5.4-6.1
694:				
Typic Dystrogelepts, mountains -----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
Aquic Dystrocryepts, mountains -----	0-5	---	120-210	4.8-7.0
	5-10	---	15-50	4.8-6.6
	10-19	2-11	---	5.4-6.8
	19-60	0-5	---	5.6-7.2
Orthels, mountains -----	0-2	---	15-50	4.0-5.2
	2-7	---	120-240	4.0-5.5
	7-9	---	15-25	4.0-6.3
	9-12	5-9	---	5.1-6.4
	12-60	5-9	---	5.1-6.5
695:				
Typic Dystrogelepts, mountains -----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
Aquic Dystrocryepts, mountains -----	0-5	---	120-210	4.8-7.0
	5-10	---	15-50	4.8-6.6
	10-19	2-11	---	5.4-6.8
	19-60	0-5	---	5.6-7.2
Typic Haplorthels, mountains -----	0-4	---	120-210	4.5-6.2
	4-5	9-19	---	4.7-6.0
	5-7	5-9	---	5.2-6.0
	7-15	1-5	---	5.2-6.0
	15-60	1-5	---	5.2-6.0
Ruptic Histoturbels, mountains -----	0-12	---	15-50	4.0-5.2
	12-14	---	120-210	4.6-6.2
	14-17	---	15-50	4.6-6.2
	17-20	---	5-9	5.2-6.4
	20-39	---	5-9	5.2-6.0
	39-60	---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
696:				
Typic Dystrogelepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
Lithic Cryofolists, mountains-----	0-8	---	15-50	4.4-5.2
	8-10	---	1-13	4.4-6.0
	10-60	---	---	---
697:				
Typic Dystrogelepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
Typic Cryaquepts, mountains-----	0-3	---	120-240	4.6-5.8
	3-8	3-20	---	5.4-6.4
	8-60	1-20	---	5.4-6.4
Humic Dystrocryepts, mountains-----	0-4	---	15-50	5.2-5.6
	4-11	9-19	---	4.7-6.3
	11-27	---	1-13	4.8-5.8
	27-60	1-5	---	5.2-6.0
698:				
Typic Haplorthels, high moraines-----	0-6	---	15-50	4.0-5.4
	6-10	---	15-50	5.2-5.6
	10-15	8-25	---	5.4-5.8
	15-60	2-20	---	5.6-6.2
Typic Aquiturbels, high moraines-----	0-3	---	15-50	5.2-5.6
	3-6	---	15-50	4.6-5.6
	6-11	2-15	---	5.4-5.8
	11-22	10-25	---	5.4-5.8
	22-60	10-25	---	5.4-5.8
Ruptic Histoturbels, high moraines-----	0-5	---	15-50	4.2-5.3
	5-8	50-150	---	5.0-6.2
	8-10	15-325	---	5.0-7.0
	10-11	10-25	---	5.0-6.2
	11-60	2-20	---	5.6-6.2
699:				
Typic Haploturbels, mountains-----	0-4	---	120-210	4.6-5.8
	4-5	---	15-50	4.6-5.8
	5-19	10-20	---	4.8-6.0
	19-25	10-20	---	4.8-6.0
	25-60	---	---	---
Typic Cryaquepts, mountains-----	0-3	---	120-240	4.6-5.8
	3-8	3-20	---	5.4-6.4
	8-60	1-20	---	5.4-6.4
Typic Dystrogelepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
700:				
Typic Haploturbels, outwash plains-----	0-2	---	15-50	4.0-5.2
	2-9	---	15-50	4.2-5.2
	9-14	---	5-9	4.3-5.5
	14-20	---	5-9	4.8-5.5
	20-24	---	2-5	5.1-5.5
	24-60	---	---	---
Typic Histoturbels, outwash plains-----	0-7	---	15-50	4.0-5.2
	7-10	---	120-210	4.6-6.2
	10-13	---	22-47	5.2-5.6
	13-20	5-9	---	5.2-6.4
	20-60	---	---	---
Histels, outwash plains-----	0-20	---	120-210	4.6-5.6
	20-24	9-19	---	4.7-6.3
	24-34	6-15	---	5.4-6.0
	34-60	---	---	---
701:				
Typic Historthels, outwash plains-----	0-7	---	15-50	4.0-5.2
	7-12	---	15-50	4.6-6.2
	12-14	---	15-50	5.2-5.6
	14-24	1-5	---	5.2-6.4
	24-60	---	---	---
Typic Histoturbels, outwash plains-----	0-7	---	15-50	4.0-5.2
	7-10	---	120-210	4.6-6.2
	10-13	---	22-47	5.2-5.6
	13-20	5-9	---	5.2-6.4
	20-60	---	---	---
Terric Fibristels, outwash plains-----	0-20	---	15-50	4.6-5.6
	20-24	9-19	---	4.7-6.3
	24-34	6-15	---	5.4-6.0
	34-60	---	---	---
702:				
Typic Histoturbels, river valleys-----	0-7	---	120-210	4.6-6.2
	7-12	---	15-50	4.0-5.6
	12-15	---	9-19	4.7-6.3
	15-60	5-9	---	5.2-6.4
703:				
Typic Histoturbels, high moraines-----	0-6	---	15-50	4.2-5.2
	6-11	---	15-50	4.6-6.2
	11-15	---	15-50	4.2-5.6
	15-24	---	5-15	5.2-6.4
	24-60	---	---	---
Glacic Aquiturbels, high moraines-----	0-4	---	120-240	4.6-6.2
	4-14	10-20	---	5.2-6.4
	14-16	10-20	---	5.2-6.4
	16-60	---	---	6.5-7.0
Histels, high moraines-----	0-4	---	120-210	4.6-6.2
	4-22	---	120-240	4.6-6.2
	22-28	---	22-47	5.2-5.6
	28-60	---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
704:				
Typic Histoturbels, mountains-----	0-3	---	15-50	4.4-5.6
	3-6	---	120-210	4.4-5.6
	6-13	---	15-50	5.0-5.8
	13-18	---	5-15	5.0-6.0
	18-60	---	5-15	5.0-6.0
Histels, mountains-----	0-3	---	15-50	4.0-5.2
	3-20	---	120-240	4.6-6.2
	20-24	---	21-44	5.4-5.8
	24-60	---	---	---
Typic Dystroglepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
705:				
Typic Histoturbels, ridges-----	0-10	---	15-50	4.0-5.2
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
Typic Aquiturbels, ridges-----	0-5	---	15-50	4.3-6.0
	5-8	---	14-20	4.4-6.0
	8-15	---	5-9	4.4-6.0
	15-24	---	5-9	4.8-6.0
	24-60	---	---	---
Terric Fibristels, ridges-----	0-12	115-155	---	4.9-5.7
	12-17	120-210	---	4.9-5.7
	17-24	5-9	---	4.9-5.7
	24-60	---	---	---
706:				
Typic Histoturbels, river valleys-----	0-7	---	120-210	4.6-6.2
	7-12	---	15-50	4.0-5.6
	12-15	---	9-19	4.7-6.3
	15-60	5-9	---	5.2-6.4
Typic Dystrocrypts, river valleys-----	0-7	---	120-210	4.6-6.2
	7-10	8-17	---	5.2-6.4
	10-24	5-9	---	5.2-6.4
	24-60	1-3	---	5.4-7.0
707:				
Typic Histoturbels, hills-----	0-6	---	120-210	4.6-6.2
	6-11	---	15-50	5.2-5.6
	11-21	5-9	---	5.2-6.4
	21-60	---	---	---
Typic Dystrocrypts, hills-----	0-6	---	15-50	4.0-5.2
	6-8	8-17	---	5.2-6.4
	8-12	2-9	---	5.2-6.4
	12-24	1-7	---	5.2-6.4
	24-28	1-3	---	5.5-7.2
	28-60	---	---	---

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
708: Typic Histoturbels, ridges-----	0-10	---	15-50	4.0-5.2
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
	Typic Dystrocryepts, ridges-----	0-3	---	120-210
3-6		9-19	---	4.7-6.3
6-13		5-9	---	5.2-6.4
13-18		1-5	---	5.3-6.0
18-60		1-5	---	5.5-6.5
709: Typic Histoturbels, ridges-----		0-10	---	15-50
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
	Typic Dystrocryepts, ridges-----	0-3	---	120-210
3-6		9-19	---	4.7-6.3
6-13		5-9	---	5.2-6.4
13-18		1-5	---	5.3-6.0
18-60		1-5	---	5.5-6.5
Terric Fibristels, ridges-----		0-12	115-155	---
	12-17	120-210	---	4.9-5.7
	17-24	5-9	---	4.9-5.7
	24-60	---	---	---
710: Typic Histoturbels, ridges-----	0-10	---	15-50	4.0-5.2
	10-11	---	120-210	4.1-5.5
	11-13	---	15-50	4.1-5.6
	13-20	---	5-9	5.2-6.4
	20-60	1-5	---	5.4-6.0
	Typic Dystrocryepts, ridges-----	0-3	---	120-210
3-6		9-19	---	4.7-6.3
6-13		5-9	---	5.2-6.4
13-18		1-5	---	5.3-6.0
18-60		1-5	---	5.5-6.5
Typic Historthels, ridges-----		0-9	---	120-210
	9-11	---	15-50	4.1-5.6
	11-24	5-9	---	5.2-6.4
	24-60	1-5	---	5.4-6.0
711: Typic Histoturbels, mountains-----	0-3	---	15-50	4.4-5.6
	3-6	---	120-210	4.4-5.6
	6-13	---	15-50	5.0-5.8
	13-60	---	5-15	5.0-6.0
Typic Dystroglepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
712:				
Typic Histoturbels, moraines -----	0-9	---	120-210	4.6-6.2
	9-15	---	15-50	5.2-5.6
	15-19	5-9	---	5.2-6.4
	19-28	5-9	---	5.2-6.4
	28-60	---	---	---
Typic Dystrocryepts, moraines -----	0-4	---	15-50	4.0-5.2
	4-5	9-19	---	4.7-6.3
	5-8	3-9	---	5.5-6.4
	8-24	1-4	---	5.9-6.9
	24-60	1-2	---	6.2-6.9
Water-----		---	---	---
713:				
Typic Histoturbels, outwash plains-----	0-7	---	15-50	4.0-5.2
	7-10	---	120-210	4.6-6.2
	10-13	---	22-47	5.2-5.6
	13-18	5-9	---	5.2-6.4
	18-20	5-9	---	5.2-6.4
	20-60	---	---	---
Typic Haplothels, outwash plains-----	0-5	---	15-50	4.0-5.2
	5-10	---	15-50	4.2-5.2
	10-13	---	5-9	4.3-5.5
	13-28	---	5-9	4.8-5.5
	28-60	---	2-5	5.1-5.5
Terric Hemistels, outwash plains-----	0-20	---	120-210	4.6-5.6
	20-24	9-19	---	4.7-6.3
	24-27	6-15	---	5.4-6.0
	27-34	6-15	---	5.4-6.0
	34-60	---	---	---
714:				
Typic Histoturbels, mountains-----	0-3	---	15-50	4.4-5.6
	3-6	---	120-210	4.4-5.6
	6-13	---	15-50	5.0-5.8
	13-18	---	5-15	5.0-6.0
	18-60	---	5-15	5.0-6.0
Typic Haploturbels, mountains-----	0-4	---	120-210	4.6-5.8
	4-5	---	15-50	4.6-5.8
	5-19	10-20	---	4.8-6.0
	19-25	10-20	---	4.8-6.0
	25-60	---	---	---
Typic Dystrogelepts, mountains-----	0-4	---	15-50	4.0-5.2
	4-6	---	22-47	5.2-5.6
	6-9	5-9	---	5.2-6.4
	9-18	---	1-13	4.8-5.8
	18-60	1-5	---	5.2-6.0
715:				
Volkmar-----	0-3	---	15-50	3.5-5.5
	3-10	---	15-30	4.5-5.5
	10-30	5-10	---	5.1-6.5
	30-60	1-5	---	5.1-6.5

Table 8. Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction
	In.	meq/100 g	meq/100 g	pH
716: Volkmar-----	0-3	---	15-50	3.5-5.5
	3-10	---	15-30	4.5-5.5
	10-30	5-10	---	5.1-6.5
	30-60	1-5	---	5.1-6.5
Nenana -----	0-2	---	120-210	5.1-6.1
	2-15	5-10	---	5.1-6.5
	15-21	1-5	---	5.6-6.5
	21-60	1-5	---	5.6-6.5
717: Water-----		---	---	---

Table 9. Water Features

(See text for definitions of terms used in this table. Ponding depth is the estimated range in the depth of water on the surface. Soil moisture status depth is the upper and lower depth below the soil surface.)

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
601: Aquic Dystrocryepts, high moraines -----	B	Apr	None	---	None	---	---	0- 4 4-20 20-24 24-60	Dry to moist Wet Wet, frozen Dry to moist, frozen
		May-Jun	None	---	None	---	---	0- 8 8-20 20-60	Dry to moist Wet Dry to moist
		Jul-Sep	None	---	None	---	---	0-60	Dry to moist
Typic Dystrocryepts, high moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
Histels, high moraines-----	D	Apr	None	---	None	---	---	0- 8 8-60	Wet Wet, frozen
		May	None	---	None	---	---	0-16 16-60	Wet Wet, frozen
		Jun-Sep	None	---	None	---	---	0-22 22-28 28-60	Moist Wet, frozen Wet, frozen
602: Audrey-----	B	Apr	None	---	None	---	---	0- 4 4-20 20-24 24-30	Dry to moist Wet Wet, frozen Dry to moist, frozen
		May-Jun	None	---	None	---	---	30-60 0- 8 8-20	Dry to moist Dry to moist Wet
		Jul-Sep	None	---	None	---	---	20-60 0-60	Dry to moist Dry to moist
Butchlake, gently sloping-----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Typic Aquiturbels -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0- 8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0- 8 8-15 15-60	Moist Wet Wet, frozen
603: Audrey-----	B	Apr	None	---	None	---	---	0- 4 4-20 20-24 24-30	Dry to moist Wet Wet, frozen Dry to moist, frozen
		May-Jun	None	---	None	---	---	30-60 0- 8 8-20	Dry to moist Dry to moist Wet
		Jul-Sep	None	---	None	---	---	20-60 0-60	Dry to moist Dry to moist

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
603: Typic Aquiturbels -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0-8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0-8 8-15 15-60	Moist Wet Wet, frozen
604: Babel-----	C	Apr	None	---	Frequent	Long	4-0	0-8	Wet
		May	None	---	Frequent	Long	4-0	8-60 0-14 14-60	Wet, frozen Wet Wet, frozen
		Jun	None	---	---	---	---	0-20	Moist
		Jul-Sep	None	---	---	---	---	20-60 0-25 25-60	Wet, frozen Moist Wet, frozen
605: Babel-----	C	Apr	None	---	Frequent	Long	4-0	0-8	Wet
		May	None	---	Frequent	Long	4-0	8-60 0-14 14-60	Wet, frozen Wet Wet, frozen
		Jun	None	---	---	---	---	0-20	Moist
		Jul-Sep	None	---	---	---	---	20-60 0-25 25-60	Wet, frozen Moist Wet, frozen
Butchlake -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
606: Babel-----	C	Apr	None	---	Frequent	Long	4-0	0-8	Wet
		May	None	---	Frequent	Long	4-0	8-60 0-14 14-60	Wet, frozen Wet Wet, frozen
		Jun	None	---	---	---	---	0-20	Moist
		Jul-Sep	None	---	---	---	---	20-60 0-25 25-60	Wet, frozen Moist Wet, frozen
Butchlake -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
607: Butchlake -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
608: Butchlake -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
609: Butchlake, moderately steep -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Nomercy Lake -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Butchlake, very steep -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
610: Butchlake, gently sloping -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Southpaw -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
611: Butchlake -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Southpaw -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
612: Butchlake, strongly sloping --	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Southpaw -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
613: Chena -----	A	Apr-Sep	Rare	Brief	None	---	---	0-72	Dry to moist
614: Chena -----	A	Apr-Sep	Rare	Brief	None	---	---	0-72	Dry to moist
615: Chetlake -----	D	Apr	None	---	Frequent	Long	4-0	0- 8	Wet
		May	None	---	Frequent	Long	4-0	8-60	Wet, frozen
		Jun	None	---	---	---	---	0-18	Wet
		Jul-Sep	None	---	---	---	---	18-60	Wet, frozen
								0-26	Moist
								26-31	Wet
								31-60	Wet, frozen
								0-31	Moist
								31-60	Wet, frozen
616: Donnelly-----	A	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
617: Donnelly, very steep -----	A	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
618: Donnelly-----	A	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Nenana-----	B	Apr	None	---	Occasional	Long	4-0	0-72	Dry to moist
		May-Sep	None	---	---	---	---	0-72	Dry to moist
619: Gerstle-----	B	Apr	None	---	Frequent	Long	6-0	0- 2	Wet
		May	None	---	Frequent	Long	6-0	2-60	Wet, frozen
		Jun-Sep	None	---	---	---	---	0-10	Wet
								10-60	Wet, frozen
								0-60	Moist
Moosehead-----	B	Apr	None	---	Frequent	Long	6-0	0- 2	Wet
		May	None	---	Frequent	Long	6-0	2-60	Wet, frozen
		Jun-Sep	None	---	---	---	---	0-10	Wet
								10-60	Wet, frozen
								0-60	Moist

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
620: Gerstle-----	B	Apr	None	---	Frequent	Long	6-0	0- 2	Wet
		May	None	---	Frequent	Long	6-0	2-60	Wet, frozen
		Jun-Sep	None	---	---	---	---	0-10	Wet
								10-60	Wet, frozen
								0-60	Moist
Tanana -----	D	Apr	Rare	Brief	Frequent	Long	6-0	0- 4	Wet
								4-28	Wet, frozen
		May	Rare	Brief	Frequent	Long	6-0	28-60	Wet, frozen
								0- 8	Wet
								8-28	Wet, frozen
		Jun	Rare	Brief	---	---	---	28-60	Wet, frozen
								0- 6	Moist
								6-20	Wet
								20-28	Wet, frozen
		Jul-Sep	Rare	Brief	---	---	---	28-60	Wet, frozen
								0-12	Moist
								12-25	Wet
								25-28	Wet, frozen
								28-60	Wet, frozen
622: Histels, outwash plains-----	D	Apr	None	---	None	---	---	0- 6	Wet
								6-60	Wet, frozen
		May	None	---	None	---	---	0-12	Wet
								12-60	Wet, frozen
		Jun	None	---	None	---	---	0-24	Wet
								24-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 8	Moist
								8-24	Wet
								24-60	Wet, frozen
623: Histels, outwash plains-----	D	Apr	None	---	None	---	---	0- 6	Wet
								6-60	Wet, frozen
		May	None	---	None	---	---	0-12	Wet
								12-60	Wet, frozen
		Jun	None	---	None	---	---	0-24	Wet
								24-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 8	Moist
								8-24	Wet
								24-60	Wet, frozen
Orthels, outwash plains -----	D	Apr	None	---	None	---	---	0- 4	Wet
								4-60	Wet, frozen
		May-Jun	None	---	None	---	---	0- 6	Moist
								6-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0-13	Moist
								13-60	Moist, frozen
Turbels, outwash plains-----	D	Apr	None	---	None	---	---	0- 4	Wet
								4-60	Wet, frozen
		May	None	---	None	---	---	0- 8	Wet
								8-60	Wet, frozen
		Jun	None	---	None	---	---	0-10	Wet
								10-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0-13	Moist
								13-60	Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
624: Histels, mountains-----	D	Apr	None	---	None	---	---	0-2	Wet	
		May	None	---	None	---	---	2-60	Wet, frozen	
		Jun	None	---	None	---	---	0-6	Wet	
		Jul	None	---	None	---	---	6-60	Wet, frozen	
		Aug-Sep	None	---	None	---	---	0-10	Wet	
									10-60	Wet, frozen
									0-15	Moist
Orthels, mountains-----	D	Apr	None	---	None	---	---	15-22	Moist, frozen	
		May	None	---	None	---	---	22-60	Wet, frozen	
		Jun	None	---	None	---	---	0-15	Moist	
		Jul	None	---	None	---	---	15-20	Moist, frozen	
		Aug-Sep	None	---	None	---	---	20-60	Wet, frozen	
									0-2	Wet
									2-60	Wet, frozen
Typic Dystroglepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-4	Wet	
625: Histels, high moraines-----	D	Apr	None	---	None	---	---	4-60	Wet, frozen	
		May	None	---	None	---	---	0-8	Wet	
		Jun-Sep	None	---	None	---	---	8-60	Wet, frozen	
									0-12	Moist
									12-15	Moist, frozen
									15-60	Wet, frozen
									0-10	Moist
Turbels, high moraines-----	D	Apr	None	---	None	---	---	10-12	Wet	
		May	None	---	None	---	---	12-60	Wet, frozen	
		Jun	None	---	None	---	---	0-60	Dry to moist	
		Jul	None	---	None	---	---			
		Aug-Sep	None	---	None	---	---			
626: Histels, high moraines-----	D	Apr	None	---	None	---	---	0-8	Wet	
		May	None	---	None	---	---	8-60	Wet, frozen	
		Jun-Sep	None	---	None	---	---	0-16	Wet	
									16-60	Wet, frozen
									0-22	Moist
									22-28	Wet, frozen
									28-60	Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
								In.	In.	
626: Typic Cryaquepts, high moraines -----	D	Apr	Occasional	Brief	Occasional	Long	6-2	0-6	Wet	
								6-60	Wet, frozen	
		May	Occasional	Brief	Occasional	Long	6-2	0-18	Wet	
									18-60	Wet, frozen
		Jun	Occasional	Brief	Occasional	Long	4-0	0-33	Wet	
							33-60	Wet, frozen		
		Jul-Sep	Occasional	Brief	---	---	---	0-16	Moist	
							16-60	Wet		
Typic Dystrocryepts, high moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
627: Histels, river valleys-----	D	Apr	Rare	Brief	None	---	---	0-4	Wet	
								4-60	Wet, frozen	
		May	Rare	Brief	None	---	---	6-8	Wet	
								8-60	Wet, frozen	
		Jun	Rare	Brief	None	---	---	0-4	Moist	
						4-12	Wet			
		Jul-Sep	Rare	Brief	None	---	---	12-60	Wet, frozen	
							12-16	Moist		
							16-18	Wet		
							18-60	Wet, frozen		
Typic Histoturbels, river valleys -----	D	Apr	None	---	None	---	---	0-4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	---	0-8	Wet, frozen	
								8-60	Wet	
		Jun	None	---	None	---	---	0-10	Wet	
						10-60	Wet, frozen			
		Jul-Sep	None	---	None	---	---	0-10	Moist	
							10-15	Wet		
							15-60	Wet, frozen		
Typic Historthels, river valleys -----	D	Apr	Rare	---	Frequent	Long	4-0	0-2	Wet	
								2-60	Wet, frozen	
		May	Rare	---	Frequent	Long	4-0	0-6	Wet	
								6-60	Wet, frozen	
		Jun	Rare	---	Occasional	Long	4-0	0-8	Wet	
						8-60	Wet, frozen			
		Jul	Rare	---	---	---	---	0-10	Wet	
							10-60	Wet, frozen		
		Aug-Sep	Rare	---	---	---	---	0-8	Moist	
							8-10	Wet		
							10-60	Wet, frozen		
Typic Aquiturbels, river valleys -----	D	Apr	Rare	---	Frequent	Long	4-0	0-2	Wet	
								2-60	Wet, frozen	
		May	Rare	---	Frequent	Long	4-0	0-4	Wet	
								4-60	Wet, frozen	
		Jun	Rare	---	Occasional	Long	4-0	0-4	Wet	
						4-60	Wet, frozen			
		Jul	Rare	---	---	---	---	0-6	Wet	
							6-60	Wet, frozen		
		Aug-Sep	Rare	---	---	---	---	0-6	Moist	
							6-8	Moist, frozen		
							8-60	Wet, frozen		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
628: Humic Dystrocryepts, high moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
Aquic Umbrorthels, high moraines -----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	None	---	---	0- 6	Wet
		Jul	None	---	None	---	---	6-60	Wet, frozen
		Aug-Sep	None	---	None	---	---	0-12	Wet
								12-60	Wet, frozen
								0- 8	Moist
								8-28	Wet
								28-60	Wet, frozen
								0-12	Moist
								12-28	Wet
								28-60	Wet, frozen
629: Jarvis -----	B	Apr	Rare	Brief	Occasional	Long	4-0	0-12	Wet
		May-Sep	Rare	Brief	---	---	---	12-22	Wet, frozen
								22-60	Dry to moist
								0-72	Dry to moist
630: Jarvis -----	B	Apr	Rare	Brief	Occasional	Long	4-0	0-12	Wet
		May-Sep	Rare	Brief	---	---	---	12-22	Wet, frozen
								22-60	Dry to moist
								0-72	Dry to moist
631: Jarvis -----	B	Apr	Rare	Brief	Occasional	Long	4-0	0-12	Wet
		May-Sep	Rare	Brief	---	---	---	12-22	Wet, frozen
								22-60	Dry to moist
								0-72	Dry to moist
Chena -----	A	Apr-Sep	Rare	Brief	None	---	---	0-72	Dry to moist
632: Chena -----	A	Apr-Sep	Rare	Brief	None	---	---	0-72	Dry to moist
Jarvis -----	B	Apr	Rare	Brief	Occasional	Long	4-0	0-12	Wet
		May-Sep	Rare	Brief	---	---	---	12-22	Wet, frozen
								22-60	Dry to moist
								0-72	Dry to moist
633: Jarvis -----	B	Apr	Rare	Brief	Occasional	Long	4-0	0-12	Wet
		May-Sep	Rare	Brief	---	---	---	12-22	Wet, frozen
								22-60	Dry to moist
								0-72	Dry to moist
Salchaket -----	B	Apr	Rare	Brief	Frequent	Long	6-0	0- 8	Wet
		May	Rare	Brief	Frequent	Long	6-0	8-18	Wet, frozen
		Jun-Sep	Rare	Brief	---	---	---	18-60	Dry to moist
								0-12	Wet
								12-22	Wet, frozen
								22-60	Dry to moist
								0-72	Dry to moist

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
634: Lithic Cryofolists, mountains-----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Moist, frozen
		Jun	None	---	None	---	---	0- 8	Wet
		Jul-Sep	None	---	None	---	---	8-60	Moist, frozen
		Jul-Sep	None	---	None	---	---	0-10	Moist
Typic Cryorthents, mountains-----	B	Apr-Sep	None	---	None	---	---	10-60	Moist, frozen
		Apr-Sep	None	---	None	---	---	0-60	Moist
Typic Dystrogelepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Typic Histoturbels, mountains-----	D	Apr	None	---	None	---	---	0- 2	Dry to moist
Apr		None	---	None	---	---	2- 4	Dry to moist, frozen	
May		None	---	None	---	---	4-60	Wet, frozen	
May		None	---	None	---	---	0- 4	Dry to moist	
Jun		None	---	None	---	---	4- 6	Dry to moist, frozen	
Jun		None	---	None	---	---	6-60	Wet, frozen	
Jul-Sep		None	---	None	---	---	0- 8	Dry to moist	
635: McKinley, moderately steep --	B	Apr-Sep	None	---	None	---	---	8-60	Wet, frozen
		Apr-Sep	None	---	None	---	---	0-10	Dry to moist
		Apr-Sep	None	---	None	---	---	0-10	Dry to moist
		Apr-Sep	None	---	None	---	---	10-18	Wet
		Apr-Sep	None	---	None	---	---	18-60	Wet, frozen
636: McKinley, very steep -----	B	Apr-Sep	None	---	None	---	---	0-30	Dry to moist
637: Moosehead-----	B	Apr	None	---	Frequent	Long	6-0	0- 2	Wet
		May	None	---	Frequent	Long	6-0	2-60	Wet, frozen
		Jun-Sep	None	---	---	---	---	0-10	Wet
638: Mosquito-----	D	Apr	Rare	Brief	Frequent	Long	12-0	10-60	Wet, frozen
		Apr	Rare	Brief	Frequent	Long	12-0	0- 6	Wet
		May	Rare	Brief	Frequent	Long	12-0	6-20	Wet, frozen
		May	Rare	Brief	Frequent	Long	12-0	20-60	Wet, frozen
		Jun	Rare	Brief	Frequent	Long	12-0	0-20	Wet
		Jun	Rare	Brief	Frequent	Long	12-0	20-24	Wet
		Jul-Sep	Rare	Brief	---	---	---	24-60	Wet, frozen
639: Nenana-----	B	Apr	None	---	Occasional	Long	4-0	0-20	Wet
		May-Sep	None	---	---	---	---	20-24	Wet
								24-60	Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
640: Nenana-----	B	Apr May-Sep	None None	--- ---	Occasional ---	Long ---	4-0 ---	0-72 0-72	Dry to moist Dry to moist
Donnelly-----	A	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
641: Nenana-----	B	Apr May-Sep	None None	--- ---	Occasional ---	Long ---	4-0 ---	0-72 0-72	Dry to moist Dry to moist
Donnelly-----	A	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
642: Nenana-----	B	Apr May-Sep	None None	--- ---	Occasional ---	Long ---	4-0 ---	0-72 0-72	Dry to moist Dry to moist
643: Ninchuun-----	D	Apr May Jun-Sep	None None None	--- --- ---	Frequent Frequent ---	Long Long ---	4-0 4-0 ---	0- 2 2-10 10-60 0- 6 6-16 16-60 0- 8 8-20 20-60	Wet Wet, frozen Wet, frozen Wet Wet, frozen Wet, frozen Moist Wet Wet, frozen
644: Ninchuun-----	D	Apr May Jun-Sep	None None None	--- --- ---	Frequent Frequent ---	Long Long ---	4-0 4-0 ---	0- 2 2-10 10-60 0- 6 6-16 16-60 0- 8 8-20 20-60	Wet Wet, frozen Wet, frozen Wet Wet, frozen Wet, frozen Moist Wet Wet, frozen
Audrey-----	B	Apr May-Jun Jul-Sep	None None None	--- --- ---	None None None	--- --- ---	--- --- ---	0- 4 4-20 20-24 24-30 30-60 0- 8 8-20 20-60 0-60	Dry to moist Wet Wet, frozen Dry to moist, frozen Dry to moist Dry to moist Wet Dry to moist Dry to moist
645: Ninchuun-----	D	Apr May Jun-Sep	None None None	--- --- ---	Frequent Frequent ---	Long Long ---	4-0 4-0 ---	0- 2 2-10 10-60 0- 6 6-16 16-60 0- 8 8-20 20-60	Wet Wet, frozen Wet, frozen Wet Wet, frozen Wet, frozen Moist Wet Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
645: Audrey-----	B	Apr	None	---	None	---	---	0- 4 4-20 20-24 24-30	Dry to moist Wet Wet, frozen Dry to moist, frozen
		May-Jun	None	---	None	---	---	30-60 0- 8 8-20	Dry to moist Dry to moist Wet
		Jul-Sep	None	---	None	---	---	20-60 0-60	Dry to moist Dry to moist
646: Nomercy Lake-----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Butchlake-----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
648: Salchaket-----	B	Apr	Rare	Brief	Frequent	Long	6-0	0- 8 8-18 18-60	Wet Wet, frozen Dry to moist
		May	Rare	Brief	Frequent	Long	6-0	0-12 12-22 22-60	Wet Wet, frozen Dry to moist
		Jun-Sep	Rare	Brief	---	---	---	0-72	Dry to moist
649: Salchaket-----	B	Apr	Rare	Brief	Frequent	Long	6-0	0- 8 8-18 18-60	Wet Wet, frozen Dry to moist
		May	Rare	Brief	Frequent	Long	6-0	0-12 12-22 22-60	Wet Wet, frozen Dry to moist
		Jun-Sep	Rare	Brief	---	---	---	0-72	Dry to moist
650: Tanacross-----	D	Apr	Rare	Brief	Frequent	Long	6-0	0- 4 4-60	Wet Wet, frozen
		May	Rare	Brief	Frequent	Long	6-0	0- 8 8-14 14-60	Wet Wet, frozen Wet, frozen
		Jun	Rare	Brief	---	---	---	0-14 14-60	Wet Wet, frozen
		Jul-Sep	Rare	Brief	---	---	---	0-17 17-60	Wet Wet, frozen
651: Tanana-----	D	Apr	Rare	Brief	Frequent	Long	6-0	0- 4 4-28 28-60	Wet Wet, frozen Wet, frozen
		May	Rare	Brief	Frequent	Long	6-0	0- 8 8-28 28-60	Wet Wet, frozen Wet, frozen
		Jun	Rare	Brief	---	---	---	0- 6 6-20 20-28	Moist Wet Wet, frozen
		Jul-Sep	Rare	Brief	---	---	---	28-60 0-12 12-25 25-28 28-60	Wet, frozen Moist Wet Wet, frozen Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
652: Terric Fibristels, river valleys -----	D	Apr	Rare	Brief	None	---	---	0- 4	Wet
		May	Rare	Brief	None	---	---	4-60	Wet, frozen
		Jun	Rare	Brief	None	---	---	6- 8	Wet
		Jul-Sep	Rare	Brief	None	---	---	8-60	Wet, frozen
			Rare	Brief	None	---	---	0- 4	Moist
Ruptic-Histic Aquiturbels, river valleys -----	D	Apr	Rare	---	Frequent	Long	4-0	0- 2	Wet
		May	Rare	---	Frequent	Long	4-0	2-60	Wet, frozen
		Jun	Rare	---	Occasional	Long	4-0	0- 4	Wet
		Jul-Sep	Rare	---	---	---	---	4-60	Wet, frozen
			Rare	---	---	---	---	0- 6	Wet
Typic Aquiturbels, river valleys -----	D	Apr	Rare	---	Frequent	Long	4-0	0- 2	Wet
		May	Rare	---	Frequent	Long	4-0	2-60	Wet, frozen
		Jun	Rare	---	Occasional	Long	4-0	0- 4	Wet
		Jul	Rare	---	---	---	---	4-60	Wet, frozen
			Rare	---	---	---	---	0- 6	Wet
Aug-Sep	Rare	---	---	---	---	6-60	Wet, frozen		
Typic Histoturbels, river valleys -----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	None	---	---	0- 8	Wet, frozen
		Jul-Sep	None	---	None	---	---	8-60	Wet
			None	---	None	---	---	0-10	Wet
653: Terric Fibristels, moraines -----	D	Apr	None	---	Occasional	Long	6-0	0- 2	Wet
		May	None	---	Occasional	Long	4-0	2-60	Wet, frozen
		Jun	None	---	---	---	---	0-10	Wet
		Jul-Sep	None	---	---	---	---	10-60	Wet, frozen
			None	---	---	---	---	18-26	Wet
							28-60	Wet, frozen	
							0-18	Moist	
							18-27	Wet	
							27-60	Wet, frozen	

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
								In.	In.	
653: Typic Histoturbels, moraines -----	D	Apr	None	---	Occasional	Long	4-0	0- 4	Wet	
		May	None	---	Occasional	Long	2-0	4-60	Wet, frozen	
		Jun	None	---	---	---	---	0- 6	Wet	
		Jul-Sep	None	---	---	---	---	---	6-60	Wet, frozen
									0- 6	Moist
654: Terric Hemistels-----	D	Apr	None	---	Frequent	Long	12-0	6-12	Wet	
		May	None	---	Frequent	Long	12-0	12-60	Wet, frozen	
		Jun	None	---	Frequent	Long	12-0	0- 6	Moist	
		Jul	None	---	Frequent	Brief	6-0	6-19	Wet	
		Aug-Sep	None	---	Frequent	Brief	6-0	19-60	Wet, frozen	
655: Terric Hemistels-----	D	Apr	None	---	Frequent	Long	12-0	0- 4	Wet	
		May	None	---	Frequent	Long	12-0	4- 6	Wet, frozen	
		Jun	None	---	Frequent	Long	12-0	0- 4	Wet	
		Jul-Sep	None	---	---	---	---	---	4-20	Wet, frozen
									6-60	Wet, frozen
Typic Aquiturbels -----	D	Apr-May	None	---	Frequent	Long	4-0	0-12	Wet	
		Jun	None	---	---	---	---	12-20	Wet, frozen	
		Jul-Sep	None	---	---	---	---	---	20-60	Wet, frozen
									0-20	Wet
		0-20	Wet, frozen							
8-10	Wet									
10-60	Wet, frozen									
0- 8	Moist									
8-15	Wet									
15-60	Wet, frozen									

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
656: Tetlin, moderately steep -----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	None	---	0-10	Wet
									10-28	Wet, frozen
									28-60	Wet, frozen
									0- 6	Moist
		Jun	None	---	None	---	None	---	6-20	Wet
									20-28	Wet, frozen
		Jul-Sep	None	---	None	---	None	---	28-60	Wet, frozen
									0-12	Moist
									12-24	Wet
									24-28	Wet, frozen
28-60	Wet, frozen									
657: Tetlin -----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	None	---	0-10	Wet
									10-28	Wet, frozen
									28-60	Wet, frozen
									0- 6	Moist
		Jun	None	---	None	---	None	---	6-20	Wet
									20-60	Wet, frozen
		Jul-Sep	None	---	None	---	None	---	0-12	Moist
									12-24	Wet
									24-28	Wet, frozen
									28-60	Wet, frozen
658: Tetlin -----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	None	---	0-10	Wet
									10-60	Wet, frozen
									0- 6	Moist
									6-20	Wet
		Jun	None	---	None	---	None	---	20-60	Wet, frozen
									0-12	Moist
		Jul-Sep	None	---	None	---	None	---	12-24	Wet
									24-28	Wet, frozen
									28-60	Wet, frozen
659: Glacier -----	---	---	---	---	---	---	---	---	---	
660: Turbels -----	D	Apr	None	---	None	---	---	0- 2	Moist	
								2- 4	Wet	
		May	None	---	None	---	None	---	4-60	Wet, frozen
									0- 4	Moist
									4- 8	Wet
									8-60	Wet, frozen
		Jun	None	---	None	---	None	---	0- 6	Moist
									6-20	Wet
		Jul-Sep	None	---	None	---	None	---	20-60	Wet, frozen
									0-10	Moist
									10-30	Wet
									30-60	Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
								In.	In.	
660: Tetlin -----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	None	---	0-10	Wet
									10-28	Wet, frozen
									28-60	Wet, frozen
									0- 6	Moist
		Jun	None	---	None	---	None	---	6-20	Wet
									20-60	Wet, frozen
		Jul-Sep	None	---	None	---	None	---	0-12	Moist
									12-24	Wet
24-28	Wet, frozen									
28-60	Wet, frozen									
661: Turbels, moderately steep ---	D	Apr	None	---	None	---	---	0- 2	Moist	
								2- 4	Wet	
		May	None	---	None	---	None	---	4-60	Wet, frozen
									0- 4	Moist
									4- 8	Wet
									8-60	Wet, frozen
		Jun	None	---	None	---	None	---	0- 6	Moist
									6-20	Wet
		Jul-Sep	None	---	None	---	None	---	20-60	Wet, frozen
									0-10	Moist
10-30	Wet									
30-60	Wet, frozen									
662: Turbels, steep -----	D	Apr	None	---	None	---	---	0- 2	Moist	
								2- 4	Wet	
		May	None	---	None	---	None	---	4-60	Wet, frozen
									0- 4	Moist
									4- 8	Wet
									8-60	Wet, frozen
		Jun	None	---	None	---	None	---	0- 6	Moist
									6-20	Wet
		Jul-Sep	None	---	None	---	None	---	20-60	Wet, frozen
									0-10	Moist
10-30	Wet									
30-60	Wet, frozen									
663: Turbels, very steep-----	D	Apr	None	---	None	---	---	0- 2	Moist	
								2- 4	Wet	
		May	None	---	None	---	None	---	4-60	Wet, frozen
									0- 4	Moist
									4- 8	Wet
									8-60	Wet, frozen
		Jun	None	---	None	---	None	---	0- 6	Moist
									6-20	Wet
		Jul-Sep	None	---	None	---	None	---	20-60	Wet, frozen
									0-10	Moist
10-30	Wet									
30-60	Wet, frozen									

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
664: Turbels, mountains-----	D	Apr	None	---	None	---	---	0- 2	Wet	
		May	None	---	None	---	---	2-60	Wet, frozen	
		Jun	None	---	None	---	---	0- 4	Moist	
		Jul	None	---	None	---	---	4-60	Wet, frozen	
		Aug-Sep	None	---	None	---	---	0- 7	Moist	
									7-60	Wet, frozen
									0- 7	Moist
Aquic Dystrocryepts, mountains-----	B	Apr	None	---	None	---	---	7-10	Moist, frozen	
		May	None	---	None	---	---	10-60	Wet, frozen	
		Jun	None	---	None	---	---	0- 7	Moist	
		Jul-Sep	None	---	None	---	---	7-20	Moist, frozen	
									20-60	Wet, frozen
									6- 8	Dry to moist
									8-18	Wet
665: Turbels, mountains-----	D	Apr	None	---	None	---	---	18-60	Dry to moist, frozen	
		May	None	---	None	---	---	0-12	Dry to moist	
		Jun	None	---	None	---	---	12-20	Wet	
		Jul-Sep	None	---	None	---	---	20-60	Dry to moist	
									0-26	Dry to moist
									26-35	Wet
									35-60	Dry to moist
Typic Dystrogelepts, mountains-----	B	Apr	None	---	None	---	---	0-60	Dry to moist	
		May	None	---	None	---	---			
		Jun	None	---	None	---	---			
		Jul	None	---	None	---	---			
		Aug-Sep	None	---	None	---	---			
									0- 2	Wet
									2-60	Wet, frozen
Ruptic-Histic Aquiturbels, mountains-----	D	Apr	None	---	None	---	---	0- 4	Moist	
		May	None	---	None	---	---	4-60	Wet, frozen	
		Jun	None	---	None	---	---	0- 7	Moist	
		Jul-Sep	None	---	None	---	---	7- 7	Moist, frozen	
									7-60	Wet, frozen
									0- 7	Moist
									7-10	Moist, frozen
							10-60	Wet, frozen		
							0- 7	Moist		
							7-20	Moist, frozen		
							20-60	Wet, frozen		
							0- 2	Dry to moist		
							2-60	Wet, frozen		
							0- 2	Dry to moist		
							2-12	Wet		
							12-60	Wet, frozen		
							0- 4	Dry to moist		
							4-18	Wet		
							18-60	Wet, frozen		
							0- 8	Dry to moist		
							8-30	Wet		
							30-60	Wet, frozen		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
666: Typic Aquiturbels -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0- 8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0- 8 8-15 15-60	Moist Wet Wet, frozen
667: Typic Aquiturbels -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0- 8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0- 8 8-15 15-60	Moist Wet Wet, frozen
668: Typic Aquiturbels, gently sloping -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0- 8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0- 8 8-15 15-60	Moist Wet Wet, frozen
669: Typic Aquiturbels -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0- 8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0- 8 8-15 15-60	Moist Wet Wet, frozen
Butchlake -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
Southpaw -----	B	Apr-Sep	None	---	None	---	---	0-72	Dry to moist
670: Typic Aquiturbels -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0- 8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0- 8 8-15 15-60	Moist Wet Wet, frozen
Terric Hemistels -----	D	Apr May Jun Jul-Sep	None None None None	--- --- --- ---	Frequent Frequent Frequent Frequent	Long Long Long Brief	12-0 12-0 12-0 6-0	0- 4 4-60 12-60 0-20 20-60 0-24 24-60	Wet Wet, frozen Wet Wet, frozen Wet Wet, frozen Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
671: Typic Aquiturbels -----	D	Apr-May Jun	None None	--- ---	Frequent ---	Long ---	4-0 ---	0-60 0-8 8-10 10-60	Wet, frozen Moist Wet Wet, frozen
		Jul-Sep	None	---	---	---	---	0-8 8-15 15-60	Moist Wet Wet, frozen
Terric Hemistels-----	D	Apr	None	---	Frequent	Long	12-0	0-4 4-60	Wet Wet, frozen
		May	None	---	Frequent	Long	12-0	0-12 12-20 20-60	Wet Wet, frozen Wet, frozen
		Jun	None	---	Frequent	Long	12-0	0-20 20-60	Wet Wet, frozen
		Jul-Sep	None	---	Frequent	Brief	6-0	0-20 20-24 24-60	Wet Wet Wet, frozen
672: Typic Aquiturbels, ridges -----	D	Apr	None	---	None	---	---	0-2 2-60	Dry to moist Wet, frozen
		May	None	---	None	---	---	0-4 4-60	Dry to moist Wet, frozen
		Jun	None	---	None	---	---	0-6 6-8 8-60	Dry to moist Wet Wet, frozen
		Jul-Sep	None	---	None	---	---	0-8 8-8 8-60	Dry to moist Wet Wet, frozen
Typic Dystrocryepts, ridges ----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
673: Typic Aquiturbels, moraines -----	D	Apr	None	---	None	---	---	0-2 2-60	Wet Wet, frozen
		May	None	---	None	---	---	0-4 4-10 10-60	Moist Wet Moist, frozen
		Jun	None	---	None	---	---	0-12 12-60	Moist Moist, frozen
		Jul-Sep	None	---	None	---	---	0-19 19-60	Moist Moist, frozen
Typic Dystrocryepts, moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
Typic Haploturbels, moraines -----	D	Apr	None	---	None	---	---	0-4 4-60	Wet Moist, frozen
		May	None	---	None	---	---	0-8 8-60	Wet Moist, frozen
		Jun-Sep	None	---	None	---	---	0-11 11-60	Moist Moist, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
								In.	In.
674: Typic Aquiturbels, river valleys -----	D	Apr	Rare	---	Frequent	Long	4-0	0- 2	Wet
		May	Rare	---	Frequent	Long	4-0	2-60	Wet, frozen
		Jun	Rare	---	Occasional	Long	4-0	0- 4	Wet
		Jul	Rare	---	---	---	---	4-60	Wet, frozen
		Aug-Sep	Rare	---	---	---	---	0- 6	Wet
								6-60	Wet, frozen
								0- 6	Moist
						6- 8	Moist, frozen		
						8-60	Wet, frozen		
Typic Histoturbels, river valleys -----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	None	---	---	0- 8	Wet, frozen
		Jul-Sep	None	---	None	---	---	8-60	Wet
								0-10	Wet
						10-60	Wet, frozen		
						0-10	Moist		
						10-15	Wet		
						15-60	Wet, frozen		
675: Typic Aquorthels, mountains-----	D	Apr	None	---	None	---	---	0- 4	Dry to moist
		May	None	---	None	---	---	4- 6	Wet
		Jun	None	---	None	---	---	6-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 6	Dry to moist
								6-60	Wet, frozen
								0- 8	Dry to moist
								8-10	Wet
						10-60	Wet, frozen		
						0-10	Dry to moist		
						10-14	Wet		
						14-60	Wet, frozen		
Typic Histoturbels, mountains-----	D	Apr	None	---	None	---	---	0- 2	Dry to moist
		May	None	---	None	---	---	2- 4	Dry to moist, frozen
		Jun	None	---	None	---	---	4-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 4	Dry to moist
								4- 6	Dry to moist, frozen
								6-60	Wet, frozen
								0- 8	Dry to moist
						8-60	Wet, frozen		
						0-10	Dry to moist		
						10-18	Wet		
						18-60	Wet, frozen		
676: Typic Cryaquepts-----	D	Apr-Jun	Rare	Brief	Frequent	Long	12-0	0-60	Wet
		Jul-Sep	Rare	Brief	Occasional	Long	12-0	0- 4	Moist
								4-60	Wet
677: Typic Cryofluvents, river valleys -----	A	Apr-Sep	Occasional	Brief	None	---	---	0-60	Moist

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
678: Typic Cryofluvents, river valleys -----	A	Apr-Sep	Occasional	Brief	None	---	---	0-60	Moist	
Histels, river valleys-----	D	Apr	Rare	Brief	None	---	---	0- 4	Wet	
		May	Rare	Brief	None	---	---	4-60	Wet, frozen	
									6- 8	Wet
		Jun	Rare	Brief	None	---	---	8-60	Wet, frozen	
									0- 4	Moist
									4-12	Wet
		Jul-Sep	Rare	Brief	None	---	---	12-60	Wet, frozen	
							12-16	Moist		
							16-18	Wet		
							18-60	Wet, frozen		
Typic Haploturbels, river valleys -----	D	Apr	None	---	None	---	---	0- 2	Wet	
								2-15	Wet, frozen	
		May	None	---	None	---	---	15-60	Moist, frozen	
									0- 6	Wet
									6-15	Wet, frozen
		Jun	None	---	None	---	---	15-60	Moist, frozen	
							0-12	Wet		
							12-60	Moist, frozen		
							0-15	Moist		
							15-60	Moist, frozen		
679: Typic Cryofluvents, river valleys -----	A	Apr-Sep	Occasional	Brief	None	---	---	0-60	Moist	
Typic Dystrocryepts, river valleys-----	B	Apr-Sep	Rare	---	None	---	---	0-60	Moist	
680: Typic Cryofluvents, river valleys -----	A	Apr-Sep	Occasional	Brief	None	---	---	0-60	Moist	
Typic Dystrocryepts, river valleys-----	B	Apr-Sep	Rare	---	None	---	---	0-60	Moist	
Typic Histoturbels, river valleys -----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	---	0- 8	Wet, frozen	
									8-60	Wet
		Jun	None	---	None	---	---	0-10	Wet	
									10-60	Wet, frozen
							0-10	Moist		
							10-15	Wet		
							15-60	Wet, frozen		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
681: Typic Dystricrypts, ridges -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
Ruptic-Histic Aquiturbels, ridges -----	D	Apr	None	---	None	---	---	0-2 2-4	Dry to moist Dry to moist, frozen
		May	None	---	None	---	---	4-60 0-4 4-6	Wet, frozen Dry to moist Dry to moist, frozen
		Jun	None	---	None	---	---	6-60 0-8 8-12	Wet, frozen Dry to moist Wet
		Jul-Sep	None	---	None	---	---	12-60 0-10 10-21 21-60	Wet, frozen Dry to moist Wet Wet, frozen
682: Typic Dystricrypts, high moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
Turbels, high moraines -----	D	Apr	None	---	None	---	---	0-4 4-60	Wet Wet, frozen
		May	None	---	None	---	---	0-6 6-60	Wet Wet, frozen
		Jun	None	---	None	---	---	0-8 8-60	Wet Wet, frozen
		Jul	None	---	None	---	---	0-8 8-12 12-60	Moist Wet Wet, frozen
		Aug-Sep	None	---	None	---	---	0-12 12-60	Moist Wet, frozen
683: Typic Dystricrypts, moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
Turbels, moraines -----	D	Apr	None	---	None	---	---	0-4 4-60	Wet Wet, frozen
		May	None	---	None	---	---	0-4 4-10 10-60	Moist Wet Moist, frozen
		Jun	None	---	None	---	---	0-10 10-60	Moist Moist, frozen
		Jul-Sep	None	---	None	---	---	0-19 19-60	Moist Moist, frozen
684: Typic Dystricrypts, outwash plains -----	B	Apr	None	---	None	---	---	0-6 6-60	Moist Moist, frozen
		May	None	---	None	---	---	0-20 20-60	Moist Moist, frozen
		Jun-Sep	None	---	None	---	---	0-60	Moist

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status				
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status			
684: Typic Aquiturbels, outwash plains-----	D	Apr	None	---	None	---	---	In.	In.	0- 4	Wet	
										4-22	Wet, frozen	
										22-60	Moist, frozen	
										0-10	Wet	
		May	None	---	None	---	None	---	---	---	10-22	Wet, frozen
											22-60	Moist, frozen
											0-14	Wet
											14-22	Wet, frozen
		Jun	None	---	None	---	None	---	---	---	22-60	Moist, frozen
											0-22	Moist
											22-60	Moist, frozen
											22-60	Moist, frozen
Jul-Sep	None	---	None	---	None	---	---	---	0-22	Moist		
									22-60	Moist, frozen		
									22-60	Moist, frozen		
									22-60	Moist, frozen		
Typic Haplothels, outwash plains-----	D	Apr	None	---	None	---	---	---	---	0- 4	Wet	
										4-60	Wet, frozen	
										0- 6	Wet	
										6-60	Wet, frozen	
		May	None	---	None	---	None	---	---	---	0- 6	Moist
											6-18	Wet
											18-60	Wet, frozen
											0-28	Moist
		Jun	None	---	None	---	None	---	---	---	28-60	Moist, frozen
											28-60	Moist, frozen
											28-60	Moist, frozen
											28-60	Moist, frozen
Jul-Sep	None	---	None	---	None	---	---	---	0-28	Moist		
									28-60	Moist, frozen		
									28-60	Moist, frozen		
									28-60	Moist, frozen		
685: Typic Dystrocryepts, high moraines-----	B	Apr-Sep	None	---	None	---	---	---	---	0-60	Moist	
										0-60	Moist	
										0-60	Moist	
Typic Cryaquepts, high moraines-----	D	Apr	Occasional	Brief	Occasional	Long	6-2	0- 6	6-60	Wet		
										6-60	Wet, frozen	
										0-18	Wet	
										18-60	Wet, frozen	
		May	Occasional	Brief	Occasional	Long	6-2	0-33	Wet	33-60	Wet, frozen	
											0-16	Moist
											16-60	Wet
											16-60	Wet
		Jun	Occasional	Brief	Occasional	Long	4-0	0-16	Moist	16-60	Wet	
											0-16	Moist
											16-60	Wet
											16-60	Wet
Jul-Sep	Occasional	Brief	---	---	---	---	---	---	0-16	Moist		
									16-60	Wet		
									16-60	Wet		
									16-60	Wet		
Aquic Dystrocryepts, high moraines-----	B	Apr	None	---	None	---	---	---	---	0- 4	Dry to moist	
										4-20	Wet	
										20-24	Wet, frozen	
										24-60	Dry to moist, frozen	
		May-Jun	None	---	None	---	None	---	---	---	0- 8	Dry to moist
											8-20	Wet
											20-60	Dry to moist
											20-60	Dry to moist
		Jul-Sep	None	---	None	---	None	---	---	---	0-60	Dry to moist
											0-60	Dry to moist
											0-60	Dry to moist
											0-60	Dry to moist
Ruptic Histoturbels, high moraines-----	D	Apr	None	---	None	---	---	---	---	0- 4	Wet	
										4-60	Wet, frozen	
										0- 6	Wet	
										6-60	Wet, frozen	
		May	None	---	None	---	None	---	---	---	0- 6	Wet
											6-60	Wet, frozen
											0- 8	Moist
											8-10	Moist, frozen
		Jun-Sep	None	---	None	---	None	---	---	---	10-60	Wet, frozen
											10-60	Wet, frozen
											10-60	Wet, frozen
											10-60	Wet, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
686: Typic Dystricrypts, moraines---	B	Apr-Sep	None	---	None	---	---	In. 0-60	Moist	
Typic Cryaquepts, moraines-----	D	Apr	None	---	Occasional	Long	2-0	0- 2	Wet	
		May	None	---	Occasional	Long	2-0	2-60 0-10	Wet, frozen Wet	
		Jun	None	---	Occasional	Long	1-0	10-60 0-60	Wet, frozen Wet	
		Jul-Sep	None	---	Occasional	Long	1-0	0-12 12-60	Moist Wet	
Typic Histoturbels, moraines ----	D	Apr	None	---	Occasional	Long	4-0	0- 4	Wet	
		May	None	---	Occasional	Long	2-0	4-60 0- 6	Wet, frozen Wet	
		Jun	None	---	---	---	---	6-60	Wet, frozen	
								0- 6	Moist	
		Jul-Sep	None	---	---	---	---	6-12 12-60 0- 6	Wet Wet, frozen Moist	
687: Typic Dystricrypts, ridges-----	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
		Apr-Sep	None	---	None	---	---	0-60	Dry to moist	
		Apr	None	---	None	---	---	0- 2	Dry to moist	
Typic Histoturbels, ridges -----	D	May	None	---	None	---	---	2- 4	Dry to moist, frozen	
								4-60	Wet, frozen	
		Jun	None	---	None	---	---	---	0- 4	Dry to moist
									4- 6	Dry to moist, frozen
		Jul-Sep	None	---	None	---	---	6-60 0- 8 8-60	Wet, frozen Dry to moist Wet, frozen	
688: Typic Dystricrypts, moraines---	B	Apr-Sep	None	---	None	---	---	0-10 10-13 13-60	Dry to moist Wet Wet, frozen	
		Apr-Sep	None	---	None	---	---	0-60	Moist	
		Apr	None	---	None	---	---	0- 4	Wet	
Typic Haploturbels, moraines ----	D	May	None	---	None	---	---	4-60	Moist, frozen	
								0- 8	Wet	
		Jun-Sep	None	---	None	---	---	---	8-60	Moist, frozen
									0-11 11-60	Moist Moist, frozen
Typic Aquiturbels, moraines -----	D	Apr	None	---	None	---	---	0- 2	Wet	
		May	None	---	None	---	---	2-60	Wet, frozen	
								0- 4	Moist	
		Jun	None	---	None	---	---	---	4-10	Wet
									10-60	Moist, frozen
Jul-Sep	None	---	None	---	---	---	0-12 12-60 0-19 19-60	Moist Moist, frozen Moist Moist, frozen		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
689: Typic Dystrocryepts, moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
Typic Histoturbels, moraines -----	D	Apr	None	---	Occasional	Long	4-0	0- 4	Wet	
		May	None	---	Occasional	Long	2-0	0- 6	Wet	
		Jun	None	---	---	---	---	0- 6	Moist	
		Jul-Sep	None	---	---	---	---	6-12	Wet	
									12-60	Wet, frozen
									0- 6	Moist
							6-19	Wet		
							19-60	Wet, frozen		
690: Typic Dystrocryepts, ridges -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
Typic Histoturbels, ridges -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2- 4	Dry to moist, frozen	
		May	None	---	None	---	---	4-60	Wet, frozen	
								0- 4	Dry to moist	
								4- 6	Dry to moist, frozen	
		Jun	None	---	None	---	---	6-60	Wet, frozen	
								0- 8	Dry to moist	
Jul-Sep	None	---	None	---	---	8-60	Wet, frozen			
							0-10	Dry to moist		
							10-13	Wet		
							13-60	Wet, frozen		
691: Typic Dystrocryepts, high moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
Typic Histoturbels, high moraines -----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	---	0- 8	Wet	
								8-60	Wet, frozen	
		Jun	None	---	None	---	---	0-12	Wet	
								12-60	Wet, frozen	
Jul-Sep	None	---	None	---	---	0-12	Moist			
							12-15	Wet		
							15-60	Wet, frozen		
Folists, high moraines -----	B	Apr	None	---	None	---	---	0- 4	Wet	
		May	None	---	None	---	---	4-60	Wet, frozen	
		Jun-Sep	None	---	None	---	---	0-10	Wet	
							10-60	Wet, frozen		
							0-60	Moist		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
692: Typic Dystrocryepts, ridges--	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
Typic Histoturbels, ridges ----	D	Apr	None	---	None	---	---	0-2	Dry to moist	
								2-4	Dry to moist, frozen	
		May	None	---	None	---	---	---	4-60	Wet, frozen
									0-4	Dry to moist
									4-6	Dry to moist, frozen
		Jun	None	---	None	---	---	---	6-60	Wet, frozen
									0-8	Dry to moist
Jul-Sep	None	---	None	---	---	---	8-60	Wet, frozen		
							0-10	Dry to moist		
							10-13	Wet		
							13-60	Wet, frozen		
Typic Aquiturbels, ridges ----	D	Apr	None	---	None	---	---	0-2	Dry to moist	
								2-60	Wet, frozen	
		May	None	---	None	---	---	---	0-4	Dry to moist
									4-60	Wet, frozen
		Jun	None	---	None	---	---	---	0-6	Dry to moist
									6-8	Wet
		Jul-Sep	None	---	None	---	---	---	8-60	Wet, frozen
0-8	Dry to moist									
8-8	Wet									
							8-60	Wet, frozen		
693: Typic Dystrocryepts, ridges--	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
Typic Histoturbels, ridges ----	D	Apr	None	---	None	---	---	0-2	Dry to moist	
								2-4	Dry to moist, frozen	
		May	None	---	None	---	---	---	4-60	Wet, frozen
									0-4	Dry to moist
									4-6	Dry to moist, frozen
		Jun	None	---	None	---	---	---	6-60	Wet, frozen
									0-8	Dry to moist
Jul-Sep	None	---	None	---	---	---	8-60	Wet, frozen		
							0-10	Dry to moist		
							10-13	Wet		
							13-60	Wet, frozen		
Typic Cryofluvents, ridges----	B	Apr-Sep	None	---	None	---	---	0-60	Moist	

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
694: Typic Dystrogelepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist
Aquic Dystrocryepts, mountains-----	B	Apr	None	---	None	---	---	6- 8 8-18 18-60	Dry to moist Wet Dry to moist, frozen
		May	None	---	None	---	---	0-12 12-20 20-60	Dry to moist Wet Dry to moist
		Jun	None	---	None	---	---	0-26 26-35 35-60	Dry to moist Wet Dry to moist
		Jul-Sep	None	---	None	---	---	0-60	Dry to moist
Orthels, mountains-----	D	Apr	None	---	None	---	---	0- 2 2-60	Wet Wet, frozen
		May	None	---	None	---	---	0- 4 4-60	Wet Wet, frozen
		Jun	None	---	None	---	---	0- 8 8-60	Wet Wet, frozen
		Jul	None	---	None	---	---	0-12 12-15 15-60	Moist Moist, frozen Wet, frozen
		Aug-Sep	None	---	None	---	---	0-10 10-12 12-60	Moist Wet Wet, frozen
695: Typic Dystrogelepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist
Aquic Dystrocryepts, mountains-----	B	Apr	None	---	None	---	---	6- 8 8-18 18-60	Dry to moist Wet Dry to moist, frozen
		May	None	---	None	---	---	0-12 12-20 20-60	Dry to moist Wet Dry to moist
		Jun	None	---	None	---	---	0-26 26-35 35-60	Dry to moist Wet Dry to moist
		Jul-Sep	None	---	None	---	---	0-60	Dry to moist
Typic Haploorthels, mountains-----	D	Apr	None	---	None	---	---	0-60	Wet, frozen
		May	None	---	None	---	---	0- 4 4-60	Wet Wet, frozen
		Jun	None	---	None	---	---	0-10 10-16 16-60	Moist Moist, frozen Wet, frozen
		Jul	None	---	None	---	---	0-15 15-39 39-60	Moist Moist, frozen Wet, frozen
		Aug-Sep	None	---	None	---	---	0-15 15-60	Moist Moist, frozen

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
695: Ruptic Histoturbels, mountains-----	D	Apr	None	---	None	---	---	0- 2	Wet	
								2-60	Wet, frozen	
		May	None	---	None	---	---	---	0- 4	Moist
									4- 6	Wet
									6-60	Wet, frozen
		Jun	None	---	None	---	---	---	0- 7	Moist
									7-10	Wet
		Jul	None	---	None	---	---	---	10-60	Wet, frozen
									0-10	Moist
		Aug-Sep	None	---	None	---	---	---	10-17	Wet
17-60	Wet, frozen									
0-12	Moist									
							12-17	Wet		
							17-60	Wet, frozen		
696: Typic Dystrogelepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist	
Lithic Cryofolists, mountains-----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Moist, frozen	
		May	None	---	None	---	---	---	0- 8	Wet
									8-60	Moist, frozen
		Jun	None	---	None	---	---	---	0-10	Moist
Jul-Sep	None	---	None	---	---	---	10-60	Moist, frozen		
							0-60	Moist		
697: Typic Dystrogelepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist	
Typic Cryaquepts, mountains-----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2-60	Wet	
		May	None	---	None	---	---	---	0- 4	Dry to moist
									4-60	Wet
		Jun	None	---	None	---	---	---	0- 5	Dry to moist
									5-60	Wet
		Jul	None	---	None	---	---	---	0-20	Dry to moist
									20-60	Wet
		Aug-Sep	None	---	None	---	---	---	0-30	Dry to moist
									30-60	Wet
Humic Dystrocryepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist	
698: Typic Haplorthels, high moraines-----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
		May	None	---	None	---	---	---	0- 8	Wet
									8-60	Wet, frozen
		Jun-Sep	None	---	None	---	---	---	0- 6	Moist
									6-10	Wet
							10-60	Wet, frozen		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
698: Typic Aquiturbels, high moraines-----	D	Apr	Rare	Brief	None	---	---	0- 4	Wet	
			May	Rare	Brief	None	---	---	4-60	Wet, frozen
									0-12	Wet
			Jun	---	---	None	---	---	12-60	Wet, frozen
									0- 8	Moist
									8-16	Wet
									16-60	Wet, frozen
		Jul	---	---	None	---	---	0-14	Moist	
								14-22	Wet	
		Aug-Sep	---	---	None	---	---	22-60	Wet, frozen	
								0-22	Moist	
								22-60	Wet, frozen	
Ruptic Histoturbels, high moraines-----	D	Apr	None	---	None	---	---	0- 4	Wet	
			May	None	---	None	---	---	4-60	Wet, frozen
									0- 6	Wet
			Jun-Sep	None	---	None	---	---	6-60	Wet, frozen
									0- 8	Moist
							8-10	Moist, frozen		
							10-60	Wet, frozen		
699: Typic Haploturbels, mountains-----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2- 8	Dry to moist, frozen	
									8-60	Wet, frozen
			May	None	---	None	---	---	0- 4	Dry to moist
									4-12	Dry to moist, frozen
									12-60	Wet, frozen
			Jun	None	---	None	---	---	0-12	Dry to moist
									12-18	Dry to moist, frozen
									18-60	Wet, frozen
			Jul-Sep	None	---	None	---	---	0-19	Dry to moist
							19-26	Dry to moist, frozen		
							26-60	Wet, frozen		
Typic Cryaquepts, mountains-----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2-60	Wet	
			May	None	---	None	---	---	0- 4	Dry to moist
									4-60	Wet
			Jun	None	---	None	---	---	0- 5	Dry to moist
									5-60	Wet
			Jul	None	---	None	---	---	0-20	Dry to moist
							20-60	Wet		
		Aug-Sep	None	---	None	---	---	0-30	Dry to moist	
							30-60	Wet		
Typic Dystrogelepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist	
700: Typic Haploturbels, outwash plains-----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Wet, frozen	
			May-Jun	None	---	None	---	---	0- 6	Moist
									6-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0-20	Moist	
							20-60	Moist, frozen		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
700: Typic Histoturbels, outwash plains-----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	None	---	---	0- 8	Wet
		Jul-Sep	None	---	None	---	---	8-60	Wet, frozen
			None	---	None	---	---	0-12	Wet
Histels, outwash plains-----	D	Apr	None	---	None	---	---	12-60	Wet, frozen
		May	None	---	None	---	---	0-18	Moist
		Jun	None	---	None	---	---	18-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 6	Wet
			None	---	None	---	---	6-60	Wet, frozen
701: Typic Historthels, outwash plains-----	D	Apr	None	---	None	---	---	0-12	Wet
		May	None	---	None	---	---	12-60	Wet, frozen
		Jun	None	---	None	---	---	0- 8	Wet
		Jul-Sep	None	---	None	---	---	8-60	Wet, frozen
			None	---	None	---	---	0-12	Wet
Typic Histoturbels, outwash plains-----	D	Apr	None	---	None	---	---	12-60	Wet, frozen
		May	None	---	None	---	---	0-14	Moist
		Jun	None	---	None	---	---	14-14	Wet
		Jul-Sep	None	---	None	---	---	14-60	Wet, frozen
			None	---	None	---	---	0- 4	Wet
Terric Fibristels, outwash plains-----	D	Apr	None	---	None	---	---	4-60	Wet, frozen
		May	None	---	None	---	---	0- 8	Wet
		Jun	None	---	None	---	---	8-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0-12	Wet
			None	---	None	---	---	12-60	Wet, frozen
702: Typic Histoturbels, river valleys -----	D	Apr	None	---	None	---	---	0-18	Moist
		May	None	---	None	---	---	18-60	Wet, frozen
		Jun	None	---	None	---	---	0- 6	Wet
		Jul-Sep	None	---	None	---	---	6-60	Wet, frozen
			None	---	None	---	---	0-12	Wet

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
703: Typic Histoturbels, high moraines-----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	None	---	---	0- 8	Wet
		Jul-Sep	None	---	None	---	---	8-60	Wet, frozen
			None	---	None	---	---	0-12	Wet
Glacic Aquiturbels, high moraines-----	D	Apr	None	---	None	---	---	12-60	Wet, frozen
		May	None	---	None	---	---	0-12	Moist
		Jun	None	---	None	---	---	12-15	Wet
		Jul	None	---	None	---	---	15-60	Wet, frozen
		Aug-Sep	None	---	None	---	---	0- 4	Wet
Histels, high moraines-----	D	Apr	None	---	None	---	---	4-60	Wet, frozen
		May	None	---	None	---	---	0- 6	Wet
		Jun	None	---	None	---	---	6-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 8	Wet
			None	---	None	---	---	8-60	Wet, frozen
704: Typic Histoturbels, mountains-----	D	Apr	None	---	None	---	---	0- 8	Moist
		May	None	---	None	---	---	8-12	Wet
		Jun	None	---	None	---	---	12-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0-14	Moist
			None	---	None	---	---	14-60	Wet, frozen
Histels, mountains-----	D	Apr	None	---	None	---	---	0- 8	Wet
		May	None	---	None	---	---	8-60	Wet, frozen
		Jun	None	---	None	---	---	0-16	Wet
		Jul-Sep	None	---	None	---	---	16-60	Wet, frozen
			None	---	None	---	---	0-22	Moist
Typic Dystroglepts, mountains-----	B	Apr	None	---	None	---	---	22-28	Wet, frozen
		May	None	---	None	---	---	28-60	Wet, frozen
		Jun	None	---	None	---	---	0- 2	Dry to moist
		Jul-Sep	None	---	None	---	---	2- 4	Dry to moist, frozen
			None	---	None	---	---	4-60	Wet, frozen
Typic Dystroglepts, mountains-----	B	Apr	None	---	None	---	---	0- 4	Dry to moist
		May	None	---	None	---	---	4- 6	Dry to moist, frozen
		Jun	None	---	None	---	---	6-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 8	Dry to moist
			None	---	None	---	---	8-60	Wet, frozen
Typic Dystroglepts, mountains-----	B	Apr	None	---	None	---	---	0-10	Dry to moist
		May	None	---	None	---	---	10-18	Wet
		Jun	None	---	None	---	---	18-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	0- 2	Wet
			None	---	None	---	---	2-60	Wet, frozen
Typic Dystroglepts, mountains-----	B	Apr	None	---	None	---	---	0- 6	Wet
		May	None	---	None	---	---	6-60	Wet, frozen
		Jun	None	---	None	---	---	0-10	Wet
		Jul-Sep	None	---	None	---	---	10-60	Wet, frozen
			None	---	None	---	---	0-15	Moist
Typic Dystroglepts, mountains-----	B	Apr	None	---	None	---	---	15-22	Moist, frozen
		May	None	---	None	---	---	22-60	Wet, frozen
		Jun	None	---	None	---	---	0-15	Moist
		Jul-Sep	None	---	None	---	---	15-20	Moist, frozen
			None	---	None	---	---	20-60	Wet, frozen
Typic Dystroglepts, mountains-----	B	Apr	None	---	None	---	---	0-60	Dry to moist
		May	None	---	None	---	---		
		Jun	None	---	None	---	---		
		Jul-Sep	None	---	None	---	---		
			None	---	None	---	---		

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status			
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status		
							In.	In.			
705: Typic Histoturbels, ridges -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist		
								2- 4	Dry to moist, frozen		
		May	None	---	None	---	---	---	4-60	Wet, frozen	
									0- 4	Dry to moist	
		Jun	None	---	None	---	---	---	4- 6	Dry to moist, frozen	
									6-60	Wet, frozen	
		Jul-Sep	None	---	None	---	---	---	0- 8	Dry to moist	
									8-60	Wet, frozen	
		Jul-Sep	None	---	None	---	---	---	0-10	Dry to moist	
									10-13	Wet	
		Jul-Sep	None	---	None	---	---	---	13-60	Wet, frozen	
Typic Aquiturbels, ridges -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist		
								2-60	Wet, frozen		
		May	None	---	None	---	---	---	0- 4	Dry to moist	
									4-60	Wet, frozen	
		Jun	None	---	None	---	---	---	0- 6	Dry to moist	
									6- 8	Wet	
		Jul-Sep	None	---	None	---	---	---	8-60	Wet, frozen	
									0- 8	Dry to moist	
		Jul-Sep	None	---	None	---	---	---	8- 8	Wet	
									8-60	Wet, frozen	
		Terric Fibristels, ridges -----	B	Apr	None	---	None	---	---	0- 2	Dry to moist
										2-60	Wet, frozen
May	None			---	None	---	---	---	0- 4	Dry to moist	
									4- 6	Dry to moist, frozen	
Jun	None			---	None	---	---	---	6-60	Wet, frozen	
									0- 8	Dry to moist	
Jul-Sep	None			---	None	---	---	---	8-10	Dry to moist, frozen	
									10-60	Wet, frozen	
Jul-Sep	None			---	None	---	---	---	0-12	Dry to moist	
									12-15	Dry to moist, frozen	
Jul-Sep	None			---	None	---	---	---	15-60	Wet, frozen	
706: Typic Histoturbels, river valleys -----	D	Apr	None	---	None	---	---	0- 4	Wet		
								4-60	Wet, frozen		
		May	None	---	None	---	---	---	0- 8	Wet, frozen	
									8-60	Wet	
		Jun	None	---	None	---	---	---	0-10	Wet	
									10-60	Wet, frozen	
		Jul-Sep	None	---	None	---	---	---	0-10	Moist	
									10-15	Wet	
		Jul-Sep	None	---	None	---	---	---	15-60	Wet, frozen	
		Typic Dystrocryepts, river valleys -----	B	Apr-Sep	Rare	---	None	---	---	0-60	Moist

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
707: Typic Histoturbels, hills -----	D	Apr	None	---	None	---	---	0- 4	Wet	
								4-60	Moist, frozen	
		May	None	---	None	---	---	0-10	Wet	
								10-60	Moist, frozen	
		Jun-Sep	None	---	None	---	---	0-16	Moist	
16-60	Moist, frozen									
Typic Dystrocryepts, hills -----	B	Apr	None	---	None	---	---	0- 4	Moist	
								4-60	Moist, frozen	
		May	None	---	None	---	---	0-12	Moist	
								12-60	Moist, frozen	
		Jun-Sep	None	---	None	---	---	0-60	Moist	
708: Typic Histoturbels, ridges -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2- 4	Dry to moist, frozen	
		May	None	---	None	---	---	---	4-60	Wet, frozen
									0- 4	Dry to moist
									4- 6	Dry to moist, frozen
									6-60	Wet, frozen
		Jun	None	---	None	---	---	---	0- 8	Dry to moist
									8-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	---	0-10	Dry to moist
									10-13	Wet
13-60	Wet, frozen									
Typic Dystrocryepts, ridges--	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
709: Typic Histoturbels, ridges -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2- 4	Dry to moist, frozen	
		May	None	---	None	---	---	---	4-60	Wet, frozen
									0- 4	Dry to moist
									4- 6	Dry to moist, frozen
									6-60	Wet, frozen
		Jun	None	---	None	---	---	---	0- 8	Dry to moist
									8-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	---	0-10	Dry to moist
									10-13	Wet
13-60	Wet, frozen									
Typic Dystrocryepts, ridges--	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
Terric Fibristels, ridges-----	B	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2-60	Wet, frozen	
		May	None	---	None	---	---	---	0- 4	Dry to moist
									4- 6	Dry to moist, frozen
									6-60	Wet, frozen
									0- 8	Dry to moist
		Jun	None	---	None	---	---	---	8-10	Dry to moist, frozen
									10-60	Wet, frozen
		Jul-Sep	None	---	None	---	---	---	0-12	Dry to moist
									12-15	Dry to moist, frozen
15-60	Wet, frozen									

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
							In.	In.		
710: Typic Histoturbels, ridges -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2- 4	Dry to moist, frozen	
		May	None	---	None	---	---	4-60	Wet, frozen	
								0- 4	Dry to moist	
		Jun	None	---	None	---	---	4- 6	Dry to moist, frozen	
								6-60	Wet, frozen	
		Jul-Sep	None	---	None	---	---	0- 8	Dry to moist	
								8-60	Wet, frozen	
									0-10	Dry to moist
									10-13	Wet
							13-60	Wet, frozen		
Typic Dystrocryepts, ridges --	B	Apr-Sep	None	---	None	---	---	0-60	Moist	
Typic Historthels, ridges -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2- 4	Dry to moist, frozen	
		May	None	---	None	---	---	4-60	Wet, frozen	
								0- 4	Dry to moist	
		Jun	None	---	None	---	---	4- 6	Dry to moist, frozen	
								6-60	Wet, frozen	
		Jul-Sep	None	---	None	---	---	0- 8	Dry to moist	
								8-10	Wet	
									10-60	Wet, frozen
									0-10	Dry to moist
							10-15	Wet		
							15-60	Wet, frozen		
711: Typic Histoturbels, mountains -----	D	Apr	None	---	None	---	---	0- 2	Dry to moist	
								2- 4	Dry to moist, frozen	
		May	None	---	None	---	---	4-60	Wet, frozen	
								0- 4	Dry to moist	
		Jun	None	---	None	---	---	4- 6	Dry to moist, frozen	
								6-60	Wet, frozen	
		Jul-Sep	None	---	None	---	---	0- 8	Dry to moist	
								8-60	Wet, frozen	
									0-10	Dry to moist
									10-18	Wet
							18-60	Wet, frozen		
Typic Dystrogelepts, mountains -----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist	

Table 9. Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Flooding		Ponding			Soil Moisture Status	
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status
							In.	In.	
712: Typic Histoturbels, moraines -----	D	Apr	None	---	Occasional	Long	4-0	0- 4	Wet
		May	None	---	Occasional	Long	2-0	4-60	Wet, frozen
		Jun	None	---	---	---	---	0- 6	Wet
								6-60	Wet, frozen
		Jul-Sep	None	---	---	---	---	0- 6	Moist
6-12	Wet								
							12-60	Wet, frozen	
							0- 6	Moist	
							6-19	Wet	
							19-60	Wet, frozen	
Typic Dystrocryepts, moraines -----	B	Apr-Sep	None	---	None	---	---	0-60	Moist
713: Typic Histoturbels, outwash plains-----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	---	None	---	0- 8	Wet
								8-60	Wet, frozen
		Jul-Sep	None	---	---	None	---	0-12	Wet
12-60	Wet, frozen								
							0-18	Moist	
							18-60	Wet, frozen	
Typic Haplothels, outwash plains-----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	---	None	---	0- 6	Wet
								6-60	Wet, frozen
		Jul-Sep	None	---	---	None	---	0- 6	Moist
6-18	Wet								
							18-60	Wet, frozen	
							0-28	Moist	
							28-60	Moist, frozen	
Terric Hemistels, outwash plains-----	D	Apr	None	---	None	---	---	0- 4	Wet
		May	None	---	None	---	---	4-60	Wet, frozen
		Jun	None	---	---	None	---	0-12	Wet
								12-60	Wet, frozen
		Jul-Sep	None	---	---	None	---	0-16	Wet
16-60	Wet, frozen								
							0- 8	Moist	
							8-24	Wet	
							24-60	Wet, frozen	
714: Typic Histoturbels, mountains-----	D	Apr	None	---	None	---	---	0- 2	Dry to moist
								2- 4	Dry to moist, frozen
		May	None	---	None	---	---	4-60	Wet, frozen
								0- 4	Dry to moist
		Jun	None	---	---	None	---	4- 6	Dry to moist, frozen
6-60	Wet, frozen								
Jul-Sep	None	---	---	None	---	0- 8	Dry to moist		
						8-60	Wet, frozen		
							0-10	Dry to moist	
							10-18	Wet	
							18-60	Wet, frozen	

Table 9. Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Flooding		Ponding			Soil Moisture Status		
			Frequency	Duration	Frequency	Duration	Depth	Depth	Status	
714: Typic Haploturbels, mountains-----	D	Apr	None	---	None	---	---	In.	In.	
								0- 2	Dry to moist	
		May	None	---	None	---	None	---	2- 8	Dry to moist, frozen
									8-60	Wet, frozen
									0- 4	Dry to moist
									4-12	Dry to moist, frozen
									12-60	Wet, frozen
Jun	None	---	None	---	None	---	0-12	Dry to moist		
							12-18	Dry to moist, frozen		
Jul-Sep	None	---	None	---	None	---	18-60	Wet, frozen		
							0-19	Dry to moist		
							19-26	Dry to moist, frozen		
26-60	Wet, frozen									
Typic Dystrogelepts, mountains-----	B	Apr-Sep	None	---	None	---	---	0-60	Dry to moist	
715: Volkmar -----	B	Apr	None	---	Frequent	Long	6-0	0- 2	Wet	
								2-60	Wet, frozen	
		May	None	---	Frequent	Long	6-0	0-10	Wet	
Jun-Sep	None	---	---	---	---	---	10-60	Wet, frozen		
							0-60	Moist		
716: Volkmar -----	B	Apr	None	---	Frequent	Long	6-0	0- 2	Wet	
								2-60	Wet, frozen	
		May	None	---	Frequent	Long	6-0	0-10	Wet	
Jun-Sep	None	---	---	---	---	---	10-60	Wet, frozen		
							0-60	Moist		
Nenana-----	B	Apr	None	---	Occasional	Long	4-0	0-72	Dry to moist	
		May-Sep	None	---	---	---	---	0-72	Dry to moist	

Table 10. Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
601: Aquic Dystrocryepts, high moraines -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Dystrocryepts, high moraines -----	none	---	---	0	0	Moderate	Moderate	Moderate
Histels, high moraines-----	Permafrost	16-31	Indurated	14-22	15-24	High	High	High
602: Audrey-----	none	---	---	0	0	Moderate	Moderate	Moderate
Butchlake, gently sloping-----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
603: Audrey-----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
604: Babel-----	Permafrost	14-47	Indurated	0	0	High	Moderate	Moderate
605: Babel-----	Permafrost	14-47	Indurated	0	0	High	Moderate	Moderate
Butchlake -----	none	---	---	0	0	Moderate	Moderate	Moderate
606: Babel-----	Permafrost	14-47	Indurated	0	0	High	Moderate	Moderate
Butchlake -----	none	---	---	0	0	Moderate	Moderate	Moderate
607: Butchlake -----	none	---	---	0	0	Moderate	Moderate	Moderate
608: Butchlake -----	none	---	---	0	0	Moderate	Moderate	Moderate
609: Butchlake, moderately steep -----	none	---	---	0	0	Moderate	Moderate	Moderate
Nomercy Lake-----	none	---	---	0	0	Moderate	Moderate	Moderate
Butchlake, very steep -----	none	---	---	0	0	Moderate	Moderate	Moderate
610: Butchlake, gently sloping-----	none	---	---	0	0	Moderate	Moderate	Moderate
Southpaw -----	none	---	---	0	0	Moderate	High	Moderate
611: Butchlake -----	none	---	---	0	0	Moderate	Moderate	Moderate
Southpaw -----	none	---	---	0	0	Moderate	High	Moderate

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
612: Butchlake, strongly sloping -----	none	---	---	0	0	Moderate	Moderate	Moderate
Southpaw -----	none	---	---	0	0	Moderate	High	Moderate
613: Chena -----	none	---	---	0	0	Low	Moderate	Moderate
614: Chena -----	none	---	---	0	0	Low	Moderate	Moderate
615: Chetlake -----	Permafrost	20-35	Very strongly cemented	0-1	0-2	High	High	Moderate
616: Donnelly -----	none	---	---	0	0	Moderate	Moderate	Moderate
617: Donnelly, very steep -----	none	---	---	0	0	Moderate	Moderate	Moderate
618: Donnelly -----	none	---	---	0	0	Moderate	Moderate	Moderate
Nenana -----	none	---	---	0	0	High	Moderate	Moderate
619: Gerstle -----	none	---	---	0	0	Moderate	Moderate	Moderate
Moosehead -----	none	---	---	0	0	Moderate	Moderate	Moderate
620: Gerstle -----	none	---	---	0	0	Moderate	Moderate	Moderate
Tanana -----	Permafrost	16-47	Strongly cemented	1-3	3-6	High	High	Moderate
621: Pits, gravel -----	none	---	---	---	---	---	---	---
622: Histels, outwash plains -----	Permafrost	12-28	Indurated	11-22	16-31	High	High	High
623: Histels, outwash plains -----	Permafrost	12-28	Indurated	11-22	16-31	High	High	High
Orthels, outwash plains -----	Permafrost	8-16	Indurated	16-33	24-47	High	High	High
Turbels, outwash plains -----	Permafrost	10-24	Indurated	24-41	35-59	High	High	High
624: Histels, mountains -----	Permafrost	10-20	Indurated	11-28	16-39	High	High	High
Orthels, mountains -----	Permafrost	9-31	Indurated	16-33	24-47	High	High	Moderate
Typic Dystrogelepts, mountains -----	none	---	---	0	0	Moderate	High	Moderate
625: Histels, high moraines -----	Permafrost	16-31	Indurated	14-22	15-24	High	High	High
Turbels, high moraines -----	Permafrost	8-16	Indurated	3-7	3-10	High	High	Moderate

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
626: Histels, high moraines-----	Permafrost	16-31	Indurated	14-22	15-24	High	High	High
Typic Cryaquepts, high moraines ---	none	---	---	0	0	High	High	Moderate
Typic Dystrocryepts, high moraines -----	none	---	---	0	0	Moderate	Moderate	Moderate
627: Histels, river valleys-----	Permafrost	16-24	Indurated	11-17	12-18	High	High	High
Typic Histoturbels, river valleys -----	Permafrost	10-18	Indurated	28-55	39-79	High	Moderate	Moderate
Typic Historthels, river valleys -----	Permafrost	8-17	Indurated	16-33	24-47	High	High	Moderate
Typic Aquiturbels, river valleys -----	Permafrost	6-18	Indurated	24-41	35-59	High	High	Moderate
628: Humic Dystrocryepts, high moraines -----	none	---	---	0	0	Low	Moderate	Moderate
Aquic Umbrorthels, high moraines -----	Permafrost	20-28	Indurated	0	2-4	High	High	High
629: Jarvis -----	none	---	---	0	0	Moderate	Moderate	Moderate
630: Jarvis -----	none	---	---	0	0	Moderate	Moderate	Moderate
631: Jarvis -----	none	---	---	0	0	Moderate	Moderate	Moderate
Chena -----	none	---	---	0	0	Low	Moderate	Moderate
632: Chena -----	none	---	---	0	0	Low	Moderate	Moderate
Jarvis -----	none	---	---	0	0	Moderate	Moderate	Moderate
633: Jarvis -----	none	---	---	0	0	Moderate	Moderate	Moderate
Salchaket -----	none	---	---	0	0	Moderate	Moderate	Moderate
634: Lithic Cryofolists, mountains-----	Bedrock (lithic)	4-14	Indurated	0	0	Moderate	High	High
Typic Cryorthents, mountains-----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Dystrogelepts, mountains-----	none	---	---	0	0	Moderate	High	Moderate
Typic Histoturbels, mountains-----	Permafrost	8-20	Indurated	24-41	35-59	High	Moderate	High
635: McKinley, moderately steep-----	Bedrock (paralithic)	20-40	Strongly cemented	0	0	Moderate	Moderate	Moderate

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
636: McKinley, very steep -----	Bedrock (paralithic)	20-40	Strongly cemented	0	0	Moderate	Moderate	Moderate
637: Moosehead-----	none	---	---	0	0	Moderate	Moderate	Moderate
638: Mosquito -----	Permafrost	14-31	Strongly cemented	1-6	10-12	High	Moderate	Moderate
639: Nenana -----	none	---	---	0	0	High	Moderate	Moderate
640: Nenana-----	none	---	---	0	0	High	Moderate	Moderate
Donnelly-----	none	---	---	0	0	Moderate	Moderate	Moderate
641: Nenana-----	none	---	---	0	0	High	Moderate	Moderate
Donnelly-----	none	---	---	0	0	Moderate	Moderate	Moderate
642: Nenana-----	none	---	---	0	0	High	Moderate	Moderate
Urban land-----	none	---	---	---	---	---	---	---
643: Ninchuun-----	Permafrost	16-33	Very strongly cemented	24-41	35-59	High	High	Low
644: Ninchuun-----	Permafrost	16-33	Very strongly cemented	24-41	35-59	High	High	Low
Audrey-----	none	---	---	0	0	Moderate	Moderate	Moderate
645: Ninchuun-----	Permafrost	16-33	Very strongly cemented	24-41	35-59	High	High	Low
Audrey-----	none	---	---	0	0	Moderate	Moderate	Moderate
646: Nomercy Lake-----	none	---	---	0	0	Moderate	Moderate	Moderate
Butchlake-----	none	---	---	0	0	Moderate	Moderate	Moderate
Water-----	none	---	---	---	---	---	---	---
647: Riverwash-----	none	---	---	---	---	---	---	---
648: Salchaket-----	none	---	---	0	0	Moderate	Moderate	Moderate
649: Salchaket-----	none	---	---	0	0	Moderate	Moderate	Moderate

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
650: Tanacross -----	Permafrost	10-28	Strongly cemented	16-33	24-47	High	High	High
651: Tanana -----	Permafrost	16-47	Strongly cemented	1-3	3-6	High	High	Moderate
652: Terric Fibristels, river valleys -----	Permafrost	16-24	Indurated	11-17	12-18	High	High	High
Ruptic-Histic Aquiturbels, river valleys -----	Permafrost	6-18	Indurated	24-41	35-59	High	High	Moderate
Typic Aquiturbels, river valleys -----	Permafrost	6-18	Indurated	24-41	35-59	High	High	Moderate
Typic Histoturbels, river valleys -----	Permafrost	10-18	Indurated	28-55	39-79	High	Moderate	Moderate
653: Terric Fibristels, moraines -----	Permafrost	16-31	Indurated	14-18	20-26	High	High	High
Typic Histoturbels, moraines -----	Permafrost	8-22	Indurated	16-33	24-47	High	High	Moderate
654: Terric Hemistels -----	Permafrost	14-30	Indurated	24-41	35-59	High	High	Moderate
655: Terric Hemistels -----	Permafrost	14-30	Indurated	24-41	35-59	High	High	Moderate
Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
656: Tetlin, moderately steep -----	Permafrost	16-39	Indurated	24-41	35-59	High	High	Low
657: Tetlin -----	Permafrost	16-39	Indurated	24-41	35-59	High	High	Low
658: Tetlin -----	Permafrost	16-39	Indurated	24-41	35-59	High	High	Low
659: Glacier -----	none	---	---	---	---	---	---	---
660: Turbels -----	Permafrost	12-30	Very strongly cemented	24-41	35-59	High	Moderate	Low
Tetlin -----	Permafrost	16-39	Indurated	24-41	35-59	High	High	Low
661: Turbels, moderately steep -----	Permafrost	12-30	Very strongly cemented	24-41	35-59	High	Moderate	Low
662: Turbels, steep -----	Permafrost	12-30	Very strongly cemented	24-41	35-59	High	Moderate	Low
663: Turbels, very steep -----	Permafrost	12-30	Very strongly cemented	24-41	35-59	High	Moderate	Low

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
664: Turbels, mountains-----	Permafrost	6-30	Indurated	4-16	4-24	High	High	Moderate
Aquic Dystrocryepts, mountains-----	none	---	---	0	0	Moderate	Moderate	Moderate
Water -----	none	---	---	---	---	---	---	---
665: Turbels, mountains-----	Permafrost	6-30	Indurated	4-16	4-24	High	High	Moderate
Typic Dystrogelepts, mountains-----	none	---	---	0	0	Moderate	High	Moderate
Ruptic-Histic Aquiturbels, mountains-----	Permafrost	11-30	Indurated	24-41	35-59	High	Moderate	Moderate
666: Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
667: Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
668: Typic Aquiturbels, gently sloping----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
669: Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
Butchlake -----	none	---	---	0	0	Moderate	Moderate	Moderate
Southpaw -----	none	---	---	0	0	Moderate	High	Moderate
670: Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
Terric Hemistels-----	Permafrost	14-30	Indurated	24-41	35-59	High	High	Moderate
671: Typic Aquiturbels -----	Permafrost	14-31	Indurated	0-6	2-8	High	Moderate	Low
Terric Hemistels-----	Permafrost	14-30	Indurated	24-41	35-59	High	High	Moderate
672: Typic Aquiturbels, ridges -----	Permafrost	8-31	Indurated	24-41	35-59	High	High	High
Typic Dystrocryepts, ridges-----	none	---	---	0	0	Moderate	Moderate	Moderate
673: Typic Aquiturbels, moraines-----	Permafrost	12-26	Indurated	0	0	High	Moderate	Moderate
Typic Dystrocryepts, moraines-----	none	---	---	0	0	Moderate	High	Moderate
Typic Haploturbels, moraines	Permafrost	10-20	Indurated	0	0	Moderate	High	High
674: Typic Aquiturbels, river valleys-----	Permafrost	6-18	Indurated	24-41	35-59	High	High	Moderate
Typic Histoturbels, river valleys-----	Permafrost	10-18	Indurated	28-55	39-79	High	Moderate	Moderate

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
675: Typic Aquorthels, mountains -----	Permafrost	9-23	Indurated	16-33	24-47	High	Moderate	Moderate
Typic Histoturbels, mountains-----	Permafrost	8-20	Indurated	24-41	35-59	High	Moderate	High
676: Typic Cryaquepts-----	none	---	---	0	0	High	Moderate	Low
677: Typic Cryofluvents, river valleys----	none	---	---	0	0	Low	Moderate	Moderate
678: Typic Cryofluvents, river valleys----	none	---	---	0	0	Low	Moderate	Moderate
Histels, river valleys-----	Permafrost	16-24	Indurated	11-17	12-18	High	High	High
Typic Haploturbels, river valleys----	Permafrost	10-16	Indurated	24-41	35-59	High	Moderate	Moderate
679: Typic Cryofluvents, river valleys----	none	---	---	0	0	Low	Moderate	Moderate
Typic Dystrocryepts, river valleys---	none	---	---	0	0	Moderate	Moderate	Moderate
680: Typic Cryofluvents, river valleys----	none	---	---	0	0	Low	Moderate	Moderate
Typic Dystrocryepts, river valleys---	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Histoturbels, river valleys -----	Permafrost	10-18	Indurated	28-55	39-79	High	Moderate	Moderate
681: Typic Dystrocryepts, ridges -----	none	---	---	0	0	Moderate	Moderate	Moderate
Ruptic-Histic Aquiturbels, ridges ----	Permafrost	12-24	Indurated	24-41	35-59	High	High	High
682: Typic Dystrocryepts, high moraines -----	none	---	---	0	0	Moderate	Moderate	Moderate
Turbels, high moraines-----	Permafrost	8-16	Indurated	3-7	3-10	High	High	Moderate
Water -----	none	---	---	---	---	---	---	---
683: Typic Dystrocryepts, moraines-----	none	---	---	0	0	Moderate	High	Moderate
Turbels, moraines -----	Permafrost	10-24	Indurated	0	0-7	High	High	High
Water -----	none	---	---	---	---	---	---	---
684: Typic Dystrocryepts, outwash plains -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Aquiturbels, outwash plains ---	Permafrost	12-28	Indurated	24-41	35-59	High	High	High
Typic Haplothels, outwash plains ---	Permafrost	20-31	Indurated	2-4	3-6	High	Moderate	Moderate

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
685: Typic Dystrocryepts, high moraines -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Cryaquepts, high moraines ---	none	---	---	0	0	High	High	Moderate
Aquic Dystrocryepts, high moraines -----	none	---	---	0	0	Moderate	Moderate	Moderate
Ruptic Histoturbels, high moraines -----	Permafrost	8-20	Indurated	4-8	6-12	High	Moderate	Moderate
686: Typic Dystrocryepts, moraines-----	none	---	---	0	0	Moderate	High	Moderate
Typic Cryaquepts, moraines-----	none	---	---	0	0	High	High	High
Typic Histoturbels, moraines -----	Permafrost	8-22	Indurated	16-33	24-47	High	High	Moderate
687: Typic Dystrocryepts, ridges -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Haplocryands, ridges-----	none	---	---	0	0	High	Moderate	Moderate
Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
688: Typic Dystrocryepts, moraines-----	none	---	---	0	0	Moderate	High	Moderate
Typic Haploturbels, moraines -----	Permafrost	10-20	Indurated	0	0	Moderate	High	High
Typic Aquiturbels, moraines -----	Permafrost	12-26	Indurated	0	0	High	Moderate	Moderate
689: Typic Dystrocryepts, moraines-----	none	---	---	0	0	Moderate	High	Moderate
Typic Histoturbels, moraines -----	Permafrost	8-22	Indurated	16-33	24-47	High	High	Moderate
690: Typic Dystrocryepts, ridges -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
691: Typic Dystrocryepts, high moraines -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Histoturbels, high moraines---	Permafrost	12-20	Indurated	16-33	24-47	High	High	Moderate
Folists, high moraines -----	none	---	---	8-14	12-20	Low	High	High
692: Typic Dystrocryepts, ridges -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
Typic Aquiturbels, ridges -----	Permafrost	8-31	Indurated	24-41	35-59	High	High	High

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
693: Typic Dystrocryepts, ridges -----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
Typic Cryofluvents, ridges -----	none	---	---	0	0	High	High	Moderate
694: Typic Dystrogelepts, mountains ----	none	---	---	0	0	Moderate	High	Moderate
Aquic Dystrocryepts, mountains ----	none	---	---	0	0	Moderate	Moderate	Moderate
Orthels, mountains -----	Permafrost	9-31	Indurated	16-33	24-47	High	High	Moderate
695: Typic Dystrogelepts, mountains ----	none	---	---	0	0	Moderate	High	Moderate
Aquic Dystrocryepts, mountains ----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Haplothels, mountains -----	Permafrost	8-16	Indurated	0	0	High	High	High
Ruptic Histoturbels, mountains ----	Permafrost	11-24	Indurated	24-41	35-59	High	High	High
696: Typic Dystrogelepts, mountains ----	none	---	---	0	0	Moderate	High	Moderate
Lithic Cryofolists, mountains -----	Bedrock (lithic)	4-14	Indurated	0	0	Moderate	High	High
697: Typic Dystrogelepts, mountains ----	none	---	---	0	0	Moderate	High	Moderate
Typic Cryaquepts, mountains -----	none	---	---	0	0	High	High	Moderate
Humic Dystrocryepts, mountains ----	none	---	---	0	0	Moderate	Moderate	Moderate
698: Typic Haplothels, high moraines ---	Permafrost	8-20	Indurated	3-9	4-12	High	High	Moderate
Typic Aquiturbels, high moraines ----	Permafrost	16-31	Indurated	2-4	3-6	High	High	High
Ruptic Histoturbels, high moraines -----	Permafrost	8-20	Indurated	4-8	6-12	High	Moderate	Moderate
699: Typic Haploturbels, mountains -----	Permafrost	8-20	Indurated	24-41	35-59	High	Moderate	Moderate
Typic Cryaquepts, mountains -----	none	---	---	0	0	High	High	Moderate
Typic Dystrogelepts, mountains ----	none	---	---	0	0	Moderate	High	Moderate
700: Typic Haploturbels, outwash plains -----	Permafrost	12-28	Indurated	16-33	24-47	High	High	High
Typic Histoturbels, outwash plains -----	Permafrost	12-24	Indurated	24-41	35-59	High	High	High
Histels, outwash plains -----	Permafrost	12-28	Indurated	11-22	16-31	High	High	High

Table 10. Soil Features—Continued

Map symbol and soil name	Restrictive layer		Subsidence			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In.		In.	In.			
701: Typic Historthels, outwash plains ---	Permafrost	10-16	Indurated	6-10	8-12	High	High	Moderate
Typic Histoturbels, outwash plains--	Permafrost	12-24	Indurated	24-41	35-59	High	High	High
Terric Fibristels, outwash plains-----	Permafrost	12-28	Indurated	11-22	16-31	High	High	High
702: Typic Histoturbels, river valleys-----	Permafrost	10-18	Indurated	28-55	39-79	High	Moderate	Moderate
703: Typic Histoturbels, high moraines---	Permafrost	12-20	Indurated	16-33	24-47	High	High	Moderate
Glacic Aquiturbels, high moraines --	Permafrost	10-16	Indurated	28-55	39-60	High	High	Moderate
Histels, high moraines-----	Permafrost	16-31	Indurated	14-22	15-24	High	High	High
704: Typic Histoturbels, mountains-----	Permafrost	8-20	Indurated	24-41	35-59	High	Moderate	High
Histels, mountains -----	Permafrost	10-20	Indurated	11-28	16-39	High	High	High
Typic Dystrogelepts, mountains ----	none	---	---	0	0	Moderate	High	Moderate
705: Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
Typic Aquiturbels, ridges -----	Permafrost	8-31	Indurated	24-41	35-59	High	High	High
Terric Fibristels, ridges-----	Permafrost	12-20	Indurated	24-41	35-59	High	High	Moderate
706: Typic Histoturbels, river valleys-----	Permafrost	10-18	Indurated	28-55	39-79	High	Moderate	Moderate
Typic Dystrocryepts, river valleys ---	none	---	---	0	0	Moderate	Moderate	Moderate
707: Typic Histoturbels, hills -----	Permafrost	14-24	Indurated	4-8	6-12	High	High	High
Typic Dystrocryepts, hills-----	Bedrock (lithic)	16-60	Indurated	0	0-4	Moderate	Moderate	Moderate
708: Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
Typic Dystrocryepts, ridges -----	none	---	---	0	0	Moderate	Moderate	Moderate
709: Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
Typic Dystrocryepts, ridges -----	none	---	---	0	0	Moderate	Moderate	Moderate
Terric Fibristels, ridges-----	Permafrost	12-20	Indurated	24-41	35-59	High	High	Moderate
710: Typic Histoturbels, ridges -----	Permafrost	10-20	Indurated	24-41	35-59	High	High	High
Typic Dystrocryepts, ridges-----	none	---	---	0	0	Moderate	Moderate	Moderate
Typic Historthels, ridges -----	Permafrost	10-18	Indurated	24-41	35-59	High	High	High

Table 11. Building Site Development: Structures

(This table gives soil limitation ratings and the primary limiting factors associated with the ratings. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
601: Aquic Dystricrypts, high moraines-----	40	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Slope	1.00 1.00
Typic Dystricrypts, high moraines-----	30	Very limited: Slope	1.00	Very limited: Slope	1.00
Histels, high moraines-----	20	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98
602: Audrey-----	35	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone	1.00
Butchlake, gently sloping-----	30	Not limited		Not limited	
Typic Aquiturbels -----	30	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
603: Audrey-----	80	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone	1.00
Typic Aquiturbels -----	15	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
604: Babel-----	85	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.84	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.84
605: Babel-----	85	Very limited: Ponding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.84	Very limited: Ponding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.84
Butchlake -----	15	Very limited: Slope	1.00	Very limited: Slope	1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
606: Babel-----	80	Very limited: Slope Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.84	Very limited: Slope Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.84
Butchlake -----	15	Very limited: Slope	1.00	Very limited: Slope	1.00
607: Butchlake -----	90	Very limited: Slope	1.00	Very limited: Slope	1.00
608: Butchlake -----	90	Very limited: Slope	1.00	Very limited: Slope	1.00
609: Butchlake, moderately steep -----	50	Very limited: Slope	1.00	Very limited: Slope	1.00
Nomercy Lake -----	35	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
Butchlake, very steep -----	5	Very limited: Slope	1.00	Very limited: Slope	1.00
610: Butchlake, gently sloping -----	50	Not limited		Not limited	
Southpaw -----	40	Not limited		Not limited	
611: Butchlake -----	60	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
Southpaw -----	35	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
612: Butchlake, strongly sloping -----	80	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
Southpaw -----	20	Not limited		Not limited	
613: Chena -----	95	Very limited: Flooding	1.00	Very limited: Flooding	1.00
614: Chena -----	87	Very limited: Flooding	1.00	Very limited: Flooding	1.00
615: Chetlake -----	80	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.39	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.39

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
616: Donnelly-----	95	Not limited		Not limited	
617: Donnelly, very steep-----	85	Very limited: Slope	1.00	Very limited: Slope	1.00
618: Donnelly-----	65	Not limited		Not limited	
Nenana-----	35	Very limited: Ponding	1.00	Very limited: Ponding	1.00
619: Gerstle-----	65	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone	1.00 1.00
Moosehead-----	30	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone	1.00 1.00
620: Gerstle-----	85	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone	1.00 1.00
Tanana-----	15	Very limited: Ponding Flooding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.86	Very limited: Ponding Flooding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.86
621: Pits, gravel-----	100	Not rated		Not rated	
622: Histels, outwash plains-----	100	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.88
623: Histels, outwash plains-----	45	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.88
Orthels, outwash plains-----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Turbels, outwash plains-----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624: Histels, mountains-----	50	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00
Orthels, mountains-----	20	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
Typic Dystrogelepts, mountains---	20	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Content of large stones	1.00 0.29
625: Histels, high moraines-----	45	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98
Turbels, high moraines-----	45	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter	1.00 1.00 1.00
626: Histels, high moraines-----	60	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98
Typic Cryaquepts, high moraines-----	15	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
Typic Dystrocryepts, high moraines-----	15	Very limited: Slope	1.00	Very limited: Slope	1.00
627: Histels, river valleys-----	30	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
627: Typic Histoturbels, river valleys----	30	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Typic Historthels, river valleys ----	20	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00
Typic Aquiturbels, river valleys ----	10	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00
628: Humic Dystrocryepts, high moraines-----	50	Very limited: Slope	1.00	Very limited: Slope	1.00
Aquic Umbrorthels, high moraines-----	40	Very limited: Slope Depth to saturated zone Depth to permafrost	1.00 1.00 0.68	Very limited: Slope Depth to saturated zone Depth to permafrost	1.00 1.00 0.68
629: Jarvis -----	85	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
630: Jarvis -----	85	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
631: Jarvis -----	55	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
Chena -----	40	Very limited: Flooding	1.00	Very limited: Flooding	1.00
632: Chena -----	50	Very limited: Flooding	1.00	Very limited: Flooding	1.00
Jarvis -----	45	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
633: Jarvis -----	55	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
Salchaket -----	35	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
634: Lithic Cryofolists, mountains-----	25	Very limited: Depth to saturated zone Depth to hard bedrock Slope Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Depth to hard bedrock Slope	1.00 1.00 1.00
Typic Cryorthents, mountains-----	25	Very limited: Slope	1.00	Very limited: Slope	1.00
Typic Dystrogelepts, mountains---	20	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Content of large stones	1.00 0.29
Typic Histoturbels, mountains-----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00
635: McKinley, moderately steep-----	90	Very limited: Slope Content of large stones	1.00 0.99	Very limited: Slope Content of large stones Depth to soft bedrock	1.00 0.99 0.46
636: McKinley, very steep-----	85	Very limited: Slope Content of large stones	1.00 0.99	Very limited: Slope Content of large stones Depth to soft bedrock	1.00 0.99 0.46
637: Moosehead-----	90	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone	1.00 1.00
638: Mosquito-----	80	Very limited: Ponding Flooding Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Flooding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.92

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
639: Nenana-----	85	Very limited: Ponding	1.00	Very limited: Ponding	1.00
640: Nenana-----	65	Very limited: Ponding Slope	1.00 0.16	Very limited: Ponding Slope	1.00 0.16
Donnelly-----	15	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
641: Nenana-----	75	Very limited: Ponding	1.00	Very limited: Ponding	1.00
Donnelly-----	15	Not limited		Not limited	
642: Nenana-----	60	Very limited: Ponding	1.00	Very limited: Ponding	1.00
Urban land-----	30	Not rated		Not rated	
643: Ninchuun-----	80	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
644: Ninchuun-----	50	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
Audrey-----	40	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone	1.00
645: Ninchuun-----	75	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00 0.16
Audrey-----	15	Very limited: Depth to saturated zone Slope	1.00 0.16	Very limited: Depth to saturated zone Slope	1.00 0.16

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
646: Nomercy Lake -----	35	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
Butchlake -----	25	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
Water -----	20	Not rated		Not rated	
647: Riverwash -----	100	Not rated		Not rated	
648: Salchaket -----	90	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
649: Salchaket -----	90	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
650: Tanacross -----	85	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00
651: Tanana -----	85	Very limited: Ponding Flooding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.86	Very limited: Ponding Flooding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.86
652: Terric Fibristels, river valleys -----	43	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00
Ruptic-Histic Aquiturbels, river valleys -----	42	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
652: Typic Aquiturbels, river valleys ----	15	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00
Typic Histoturbels, river valleys----	0	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
653: Terric Fibristels, moraines-----	65	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.74	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.74
Typic Histoturbels, moraines -----	25	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
654: Terric Hemistels-----	95	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92
655: Terric Hemistels-----	55	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92
Typic Aquiturbels -----	20	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
656: Tetlin, moderately steep -----	95	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
657: Tetlin -----	100	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.92 0.16	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.92 0.16
658: Tetlin -----	100	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92
659: Glacier -----	100	Not rated		Not rated	
660: Turbels -----	85	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.46 0.04	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.46 0.04
Tetlin -----	15	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.92 0.04	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.92 0.04
661: Turbels, moderately steep -----	80	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.46
662: Turbels, steep -----	85	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46
663: Turbels, very steep -----	85	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
664: Turbels, mountains-----	70	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Aquic Dystrocryepts, mountains---	15	Very limited: Depth to saturated zone Slope	1.00 0.63	Very limited: Depth to saturated zone Slope	1.00 0.63
Water-----	10	Not rated		Not rated	
665: Turbels, mountains-----	55	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 0.37	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.37
Typic Dystrogelepts, mountains---	20	Somewhat limited: Content of large stones	0.29	Somewhat limited: Content of large stones	0.29
Ruptic-Histic Aquiturbels, mountains-----	15	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.46
666: Typic Aquiturbels-----	90	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
667: Typic Aquiturbels-----	90	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16
668: Typic Aquiturbels, gently sloping--	95	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
669: Typic Aquiturbels-----	40	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16
Butchlake-----	35	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
Southpaw-----	20	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
670:					
Typic Aquiturbels -----	80	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
Terric Hemistels-----	20	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92
671:					
Typic Aquiturbels -----	80	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16
Terric Hemistels-----	15	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92
672:					
Typic Aquiturbels, ridges -----	80	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Typic Dystrocryepts, ridges-----	15	Somewhat limited: Slope	0.16	Somewhat limited: Slope	0.16
673:					
Typic Aquiturbels, moraines -----	45	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, moraines-----	30	Not limited		Not limited	
Typic Haploturbels, moraines -----	15	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
674:					
Typic Aquiturbels, river valleys ----	50	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00
Typic Histoturbels, river valleys----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
675: Typic Aquorthels, mountains -----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00
Typic Histoturbels, mountains-----	35	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
676: Typic Cryaquepts-----	75	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.22
677: Typic Cryofluvents, river valleys---	100	Very limited: Flooding	1.00	Very limited: Flooding	1.00
678: Typic Cryofluvents, river valleys---	40	Very limited: Flooding	1.00	Very limited: Flooding	1.00
Histels, river valleys-----	30	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00
Typic Haploturbels, river valleys---	30	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00
679: Typic Cryofluvents, river valleys---	45	Very limited: Flooding	1.00	Very limited: Flooding	1.00
Typic Dystrocryepts, river valleys -	45	Very limited: Flooding	1.00	Very limited: Flooding	1.00
680: Typic Cryofluvents, river valleys---	45	Very limited: Flooding	1.00	Very limited: Flooding	1.00
Typic Dystrocryepts, river valleys -	45	Very limited: Flooding	1.00	Very limited: Flooding	1.00
Typic Histoturbels, river valleys----	10	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
681: Typic Dystrocryepts, ridges -----	55	Very limited: Slope	1.00	Very limited: Slope	1.00
Ruptic-Histic Aquiturbels, ridges -----	35	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.99 0.16	Very limited: Subsidence Depth to saturated zone Depth to permafrost Slope	1.00 1.00 0.99 0.16
682: Typic Dystrocryepts, high moraines-----	45	Very limited: Slope	1.00	Very limited: Slope	1.00
Turbels, high moraines-----	25	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 0.16
Water-----	20	Not rated		Not rated	
683: Typic Dystrocryepts, moraines-----	55	Very limited: Slope	1.00	Very limited: Slope	1.00
Turbels, moraines -----	20	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16
Water-----	15	Not rated		Not rated	
684: Typic Dystrocryepts, outwash plains-----	70	Not limited		Not limited	
Typic Aquiturbels, outwash plains-----	15	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.98	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.98
Typic Haplothels, outwash plains-----	15	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68
685: Typic Dystrocryepts, high moraines-----	30	Not limited		Not limited	
Typic Cryaquepts, high moraines -----	25	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
685: Aquic Dystricrypts, high moraines-----	15	Very limited: Depth to saturated zone Slope	1.00 0.16	Very limited: Depth to saturated zone Slope	1.00 0.16
Ruptic Histoturbels, high moraines-----	15	Very limited: Depth to permafrost Slope Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
686: Typic Dystricrypts, moraines----	35	Not limited		Not limited	
Typic Cryaquepts, moraines-----	30	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone	1.00 1.00
Typic Histoturbels, moraines -----	25	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
687: Typic Dystricrypts, ridges -----	45	Very limited: Slope	1.00	Very limited: Slope	1.00
Typic Haplocryands, ridges -----	40	Very limited: Slope	1.00	Very limited: Slope	1.00
Typic Histoturbels, ridges -----	15	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.16
688: Typic Dystricrypts, moraines----	40	Not limited		Not limited	
Typic Haploturbels, moraines -----	30	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Aquiturbels, moraines -----	15	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
689: Typic Dystrocryepts, moraines-----	45	Not limited		Not limited	
Typic Histoturbels, moraines -----	45	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
690: Typic Dystrocryepts, ridges-----	65	Very limited: Slope	1.00	Very limited: Slope	1.00
Typic Histoturbels, ridges -----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00
691: Typic Dystrocryepts, high moraines-----	35	Not limited		Not limited	
Typic Histoturbels, high moraines-----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.16
Folists, high moraines -----	15	Very limited: Depth to saturated zone Content of large stones Slope Subsidence	1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Content of large stones Slope Subsidence	1.00 1.00 1.00 1.00
692: Typic Dystrocryepts, ridges-----	60	Somewhat limited: Slope	0.63	Somewhat limited: Slope	0.63
Typic Histoturbels, ridges -----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
Typic Aquiturbels, ridges -----	15	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
693:					
Typic Dystrocryepts, ridges -----	65	Very limited: Slope	1.00	Very limited: Slope	1.00
Typic Histoturbels, ridges -----	20	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00
Typic Cryofluvents, ridges-----	15	Very limited: Slope	1.00	Very limited: Slope	1.00
694:					
Typic Dystrogelepts, mountains ---	55	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Content of large stones	1.00 0.29
Aquic Dystrocryepts, mountains---	20	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Slope	1.00 1.00
Orthels, mountains -----	15	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
695:					
Typic Dystrogelepts, mountains ---	30	Somewhat limited: Content of large stones	0.29	Somewhat limited: Content of large stones	0.29
Aquic Dystrocryepts, mountains---	25	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Slope	1.00 1.00
Typic Haplothels, mountains -----	25	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00
Ruptic Histoturbels, mountains ----	20	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00
696:					
Typic Dystrogelepts, mountains ---	85	Somewhat limited: Content of large stones Slope	0.29 0.16	Somewhat limited: Content of large stones Slope	0.29 0.16
Lithic Cryofolists, mountains-----	15	Very limited: Depth to saturated zone Depth to hard bedrock Slope Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Depth to hard bedrock Slope	1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
697:					
Typic Dystroglepts, mountains ---	40	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Content of large stones	1.00 0.29
Typic Cryaquepts, mountains -----	30	Very limited: Depth to saturated zone Slope	1.00 0.16	Very limited: Depth to saturated zone Slope	1.00 0.16
Humic Dystrocryepts, mountains--	20	Not limited		Not limited	
698:					
Typic Haplothels, high moraines-----	40	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 0.16
Typic Aquiturbels, high moraines-----	30	Very limited: Flooding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.97	Very limited: Flooding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.97
Ruptic Histoturbels, high moraines-----	20	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00
699:					
Typic Haploturbels, mountains----	35	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
Typic Cryaquepts, mountains -----	25	Very limited: Slope Depth to saturated zone	1.00 1.00	Very limited: Slope Depth to saturated zone	1.00 1.00
Typic Dystroglepts, mountains ---	25	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Content of large stones	1.00 0.29
700:					
Typic Haploturbels, outwash plains-----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
700: Typic Histoturbels, outwash plains-----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Histels, outwash plains-----	25	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.88
701: Typic Historthels, outwash plains-----	40	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter	1.00 1.00 1.00
Typic Histoturbels, outwash plains-----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Terric Fibristels, outwash plains-----	15	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.88
702: Typic Histoturbels, river valleys-----	75	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
703: Typic Histoturbels, high moraines-----	65	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
Glacic Aquiturbels, high moraines-----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Histels, high moraines-----	15	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
704:					
Typic Histoturbels, mountains-----	50	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Histels, mountains-----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00
Typic Dystroglepts, mountains ---	25	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Content of large stones	1.00 0.29
705:					
Typic Histoturbels, ridges -----	50	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
Typic Aquiturbels, ridges -----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Terric Fibristels, ridges-----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
706:					
Typic Histoturbels, river valleys----	80	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Typic Dystrocryepts, river valleys -	20	Very limited: Flooding	1.00	Very limited: Flooding	1.00
707:					
Typic Histoturbels, hills -----	65	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, hills-----	25	Very limited: Slope Depth to hard bedrock	1.00 0.68	Very limited: Slope Depth to hard bedrock	1.00 1.00

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
708: Typic Histoturbels, ridges -----	80	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
Typic Dystrocryepts, ridges -----	20	Not limited		Not limited	
709: Typic Histoturbels, ridges -----	60	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
Typic Dystrocryepts, ridges -----	25	Very limited: Slope	1.00	Very limited: Slope	1.00
Terric Fibristels, ridges -----	15	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00
710: Typic Histoturbels, ridges -----	50	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.16	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.16
Typic Dystrocryepts, ridges -----	20	Very limited: Slope	1.00	Very limited: Slope	1.00
Typic Historthels, ridges -----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
711: Typic Histoturbels, mountains -----	60	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Typic Dystrogelepts, mountains ---	20	Somewhat limited: Slope Content of large stones	0.84 0.29	Somewhat limited: Slope Content of large stones	0.84 0.29
712: Typic Histoturbels, moraines -----	50	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00
Typic Dystrocryepts, moraines -----	30	Not limited		Not limited	

Table 11. Building Site Development: Structures—Continued

Map symbol and soil name	Percent of map unit	Dwellings without basements (Standard criteria)		Dwellings with basements (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
712: Water-----	15	Not rated		Not rated	
713: Typic Histoturbels, outwash plains-----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Typic Haplothels, outwash plains-----	35	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68
Terric Hemistels, outwash plains--	25	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.88
714: Typic Histoturbels, mountains-----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00
Typic Haploturbels, mountains-----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00
Typic Dystrogelepts, mountains ---	15	Somewhat limited: Content of large stones	0.29	Somewhat limited: Content of large stones	0.29
715: Volkmar-----	90	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone	1.00 1.00
716: Volkmar-----	80	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone	1.00 1.00
Nenana-----	15	Very limited: Ponding	1.00	Very limited: Ponding	1.00
717: Water-----	100	Not rated		Not rated	

Table 12. Building Site Development: Site Improvements

(This table gives soil limitation ratings and the primary limiting factors associated with the ratings. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
601: Aquic Dystricrypts, high moraines-----	40	Very limited: Slope Depth to saturated zone	1.00 1.00	Very limited: Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00
Typic Dystricrypts, high moraines -----	30	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 1.00
Histels, high moraines-----	20	Very limited: Subsidence Depth to saturated zone Content of organic matter Slope Depth to permafrost	1.00 1.00 1.00 1.00 0.98	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.98 0.10
602: Audrey-----	35	Very limited: Depth to saturated zone Slope	1.00 0.88	Very limited: Depth to saturated zone Cutbanks cave	1.00 1.00
Butchlake, gently sloping-----	30	Somewhat limited: Slope	0.88	Somewhat limited: Cutbanks cave	0.10
Typic Aquiturbels -----	30	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
603: Audrey-----	80	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone Cutbanks cave	1.00 1.00
Typic Aquiturbels -----	15	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
604: Babel-----	85	Very limited: Ponding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 0.88 0.84	Very limited: Ponding Depth to saturated zone Cutbanks cave Depth to permafrost	1.00 1.00 1.00 0.84

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
605: Babel-----	85	Very limited: Slope Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.84	Very limited: Ponding Depth to saturated zone Cutbanks cave Slope Depth to permafrost	1.00 1.00 1.00 1.00 0.84
Butchlake-----	15	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave Depth to permafrost	1.00 0.10 0.84
606: Babel-----	80	Very limited: Slope Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.84	Very limited: Ponding Slope Depth to saturated zone Cutbanks cave Depth to permafrost	1.00 1.00 1.00 1.00 0.84
Butchlake-----	15	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 0.10
607: Butchlake-----	90	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 0.10
608: Butchlake-----	90	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 0.10
609: Butchlake, moderately steep-----	50	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 0.10
Nomercy Lake-----	35	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 0.16
Butchlake, very steep-----	5	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 0.10
610: Butchlake, gently sloping-----	50	Somewhat limited: Slope	0.12	Somewhat limited: Cutbanks cave	0.10
Southpaw-----	40	Somewhat limited: Slope	0.50	Very limited: Cutbanks cave	1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
611: Butchlake -----	60	Very limited: Slope	1.00	Somewhat limited: Slope Cutbanks cave	0.16 0.10
Southpaw -----	35	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 0.16
612: Butchlake, strongly sloping -----	80	Very limited: Slope	1.00	Somewhat limited: Slope Cutbanks cave	0.16 0.10
Southpaw -----	20	Somewhat limited: Slope	0.50	Very limited: Cutbanks cave	1.00
613: Chena -----	95	Very limited: Flooding	1.00	Very limited: Cutbanks cave	1.00
614: Chena -----	87	Very limited: Flooding	1.00	Very limited: Cutbanks cave	1.00
615: Chetlake -----	80	Very limited: Ponding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 0.88 0.39	Very limited: Ponding Depth to saturated zone Cutbanks cave Depth to permafrost	1.00 1.00 1.00 0.39
616: Donnelly -----	95	Not limited		Very limited: Cutbanks cave	1.00
617: Donnelly, very steep -----	85	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
618: Donnelly -----	65	Not limited		Very limited: Cutbanks cave	1.00
Nenana -----	35	Very limited: Ponding	1.00	Very limited: Ponding Cutbanks cave	1.00 1.00
619: Gerstle -----	65	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Moosehead -----	30	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
620: Gerstle-----	85	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Tanana -----	15	Very limited: Ponding Flooding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.86	Very limited: Ponding Depth to saturated zone Depth to permafrost Cutbanks cave	1.00 1.00 0.86 0.10
621: Pits, gravel -----	100	Not rated		Not rated	
622: Histels, outwash plains-----	100	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.88 0.10
623: Histels, outwash plains-----	45	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.88 0.10
Orthels, outwash plains-----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Turbels, outwash plains-----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
624: Histels, mountains-----	50	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00
Orthels, mountains -----	20	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
Typic Dystroglepts, mountains -----	20	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Cutbanks cave Content of large stones	1.00 1.00 0.29

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
625: Histels, high moraines-----	45	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.98 0.10
Turbels, high moraines-----	45	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
626: Histels, high moraines-----	60	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.98 0.10
Typic Cryaquepts, high moraines -----	15	Very limited: Ponding Flooding Depth to saturated zone Slope	1.00 1.00 1.00 0.12	Very limited: Ponding Depth to saturated zone Cutbanks cave Flooding	1.00 1.00 1.00 0.60
Typic Dystrocryepts, high moraines -----	15	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 1.00
627: Histels, river valleys-----	30	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Histoturbels, river valleys-----	30	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Historthels, river valleys -----	20	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
Typic Aquiturbels, river valleys -----	10	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
628: Humic Dystrocryepts, high moraines----	50	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
Aquic Umbrorthels, high moraines-----	40	Very limited: Slope Depth to saturated zone Depth to permafrost	1.00 1.00 0.68	Very limited: Slope Depth to saturated zone Cutbanks cave Depth to permafrost	1.00 1.00 1.00 0.68
629: Jarvis -----	85	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
630: Jarvis -----	85	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
631: Jarvis -----	55	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Chena -----	40	Very limited: Flooding	1.00	Very limited: Cutbanks cave	1.00
632: Chena -----	50	Very limited: Flooding	1.00	Very limited: Cutbanks cave	1.00
Jarvis -----	45	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
633: Jarvis -----	55	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Salchaket -----	35	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
634: Lithic Cryofolists, mountains-----	25	Very limited: Slope Depth to saturated zone Depth to hard bedrock Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to hard bedrock Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10
Typic Cryorthents, mountains-----	25	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
Typic Dystroglepts, mountains-----	20	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Cutbanks cave Slope Content of large stones	1.00 1.00 0.29
Typic Histoturbels, mountains-----	20	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00
635: McKinley, moderately steep-----	90	Very limited: Slope Content of large stones	1.00 0.99	Very limited: Slope Content of large stones Depth to soft bedrock Cutbanks cave	1.00 0.99 0.46 0.10
636: McKinley, very steep-----	85	Very limited: Slope Content of large stones	1.00 0.99	Very limited: Slope Content of large stones Depth to soft bedrock Cutbanks cave	1.00 0.99 0.46 0.10
637: Moosehead-----	90	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
638: Mosquito-----	80	Very limited: Ponding Flooding Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Depth to saturated zone Depth to permafrost Cutbanks cave	1.00 1.00 0.92 0.10
639: Nenana-----	85	Very limited: Ponding	1.00	Very limited: Ponding Cutbanks cave	1.00 1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
640: Nenana-----	65	Very limited: Ponding Slope	1.00 1.00	Very limited: Ponding Cutbanks cave Slope	1.00 1.00 0.16
Donnelly-----	15	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 0.16
641: Nenana-----	75	Very limited: Ponding Slope	1.00 0.88	Very limited: Ponding Cutbanks cave	1.00 1.00
Donnelly-----	15	Somewhat limited: Slope	0.88	Very limited: Cutbanks cave	1.00
642: Nenana-----	60	Very limited: Ponding	1.00	Very limited: Ponding Cutbanks cave	1.00 1.00
Urban land-----	30	Not rated		Not rated	
643: Ninchuun-----	80	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00 0.88	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
644: Ninchuun-----	50	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
Audrey-----	40	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone Cutbanks cave	1.00 1.00
645: Ninchuun-----	75	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00 0.16
Audrey-----	15	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Cutbanks cave Slope	1.00 1.00 0.16

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
646: Nomercy Lake -----	35	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 0.16
Butchlake -----	25	Very limited: Slope	1.00	Somewhat limited: Slope Cutbanks cave	0.16 0.10
Water -----	20	Not rated		Not rated	
647: Riverwash -----	100	Not rated		Not rated	
648: Salchaket -----	90	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
649: Salchaket -----	90	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
650: Tanacross -----	85	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
651: Tanana -----	85	Very limited: Ponding Flooding Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.86	Very limited: Ponding Depth to saturated zone Depth to permafrost Cutbanks cave	1.00 1.00 0.86 0.10
652: Terric Fibristels, river valleys -----	43	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Ruptic-Histic Aquiturbels, river valleys--	42	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
652: Typic Aquiturbels, river valleys -----	15	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
Typic Histoturbels, river valleys-----	0	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
653: Terric Fibristels, moraines-----	65	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.74	Very limited: Ponding Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 1.00 0.74 0.10
Typic Histoturbels, moraines -----	25	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
654: Terric Hemistels-----	95	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 1.00 0.92 0.10
655: Terric Hemistels-----	55	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 1.00 0.92 0.10
Typic Aquiturbels -----	20	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
656: Tetlin, moderately steep -----	95	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.92	Very limited: Depth to saturated zone Slope Depth to permafrost Cutbanks cave	1.00 1.00 0.92 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
657: Tetlin -----	100	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92	Very limited: Depth to saturated zone Depth to permafrost Slope Cutbanks cave	1.00 0.92 0.16 0.10
658: Tetlin -----	100	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92	Very limited: Depth to saturated zone Slope Depth to permafrost Cutbanks cave	1.00 1.00 0.92 0.10
659: Glacier -----	100	Not rated		Not rated	
660: Turbels -----	85	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Depth to saturated zone Cutbanks cave Depth to permafrost Slope	1.00 1.00 0.46 0.04
Tetlin -----	15	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92	Very limited: Depth to saturated zone Depth to permafrost Cutbanks cave Slope	1.00 0.92 0.10 0.04
661: Turbels, moderately steep -----	80	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Depth to saturated zone Cutbanks cave Slope Depth to permafrost	1.00 1.00 1.00 0.46
662: Turbels, steep -----	85	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Slope Depth to saturated zone Cutbanks cave Depth to permafrost	1.00 1.00 1.00 0.46
663: Turbels, very steep -----	85	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Slope Depth to saturated zone Cutbanks cave Depth to permafrost	1.00 1.00 1.00 0.46

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
664: Turbels, mountains-----	70	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Aquic Dystrocryepts, mountains-----	15	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Cutbanks cave Slope	1.00 1.00 0.63
Water -----	10	Not rated		Not rated	
665: Turbels, mountains-----	55	Very limited: Depth to permafrost Depth to saturated zone Slope Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 0.37
Typic Dystrogelepts, mountains-----	20	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Cutbanks cave Content of large stones	1.00 0.29
Ruptic-Histic Aquiturbels, mountains----	15	Very limited: Slope Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.46	Very limited: Depth to saturated zone Cutbanks cave Slope Depth to permafrost	1.00 1.00 1.00 0.46
666: Typic Aquiturbels -----	90	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
667: Typic Aquiturbels -----	90	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00 0.16
668: Typic Aquiturbels, gently sloping-----	95	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
669: Typic Aquiturbels -----	40	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00 0.16
Butchlake -----	35	Very limited: Slope	1.00	Somewhat limited: Slope Cutbanks cave	0.16 0.10
Southpaw -----	20	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 0.16
670: Typic Aquiturbels -----	80	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
Terric Hemistels-----	20	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 1.00 0.92 0.10
671: Typic Aquiturbels -----	80	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00 0.16
Terric Hemistels-----	15	Very limited: Ponding Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 1.00 0.92 0.10
672: Typic Aquiturbels, ridges -----	80	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Dystrocryepts, ridges-----	15	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 0.16

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
673: Typic Aquiturbels, moraines-----	45	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Dystrocryepts, moraines-----	30	Somewhat limited: Slope	0.12	Very limited: Cutbanks cave	1.00
Typic Haploturbels, moraines-----	15	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
674: Typic Aquiturbels, river valleys-----	50	Very limited: Depth to permafrost Ponding Subsidence Flooding Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
Typic Histoturbels, river valleys-----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
675: Typic Aquorthels, mountains-----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10
Typic Histoturbels, mountains-----	35	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
676: Typic Cryaquepts-----	75	Very limited: Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
677: Typic Cryofluvents, river valleys-----	100	Very limited: Flooding	1.00	Very limited: Cutbanks cave Flooding	1.00 0.60

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
678: Typic Cryofluvents, river valleys-----	40	Very limited: Flooding	1.00	Very limited: Cutbanks cave Flooding	1.00 0.60
Histels, river valleys-----	30	Very limited: Depth to permafrost Flooding Depth to saturated zone Content of organic matter Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Haploturbels, river valleys-----	30	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10
679: Typic Cryofluvents, river valleys-----	45	Very limited: Flooding	1.00	Very limited: Cutbanks cave Flooding	1.00 0.60
Typic Dystrocryepts, river valleys -----	45	Very limited: Flooding	1.00	Very limited: Cutbanks cave	1.00
680: Typic Cryofluvents, river valleys-----	45	Very limited: Flooding	1.00	Very limited: Cutbanks cave Flooding	1.00 0.60
Typic Dystrocryepts, river valleys -----	45	Very limited: Flooding	1.00	Very limited: Cutbanks cave	1.00
Typic Histoturbels, river valleys-----	10	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
681: Typic Dystrocryepts, ridges-----	55	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
Ruptic-Histic Aquiturbels, ridges -----	35	Very limited: Subsidence Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.99	Very limited: Depth to saturated zone Depth to permafrost Slope Cutbanks cave	1.00 0.99 0.16 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
682: Typic Dystrocryepts, high moraines -----	45	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 1.00
Turbels, high moraines-----	25	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 0.16 0.10
Water -----	20	Not rated		Not rated	
683: Typic Dystrocryepts, moraines-----	55	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 1.00
Turbels, moraines -----	20	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 0.16 0.10
Water -----	15	Not rated		Not rated	
684: Typic Dystrocryepts, outwash plains ----	70	Not limited		Very limited: Cutbanks cave	1.00
Typic Aquiturbels, outwash plains -----	15	Very limited: Subsidence Depth to saturated zone Depth to permafrost	1.00 1.00 0.98	Very limited: Depth to saturated zone Cutbanks cave Depth to permafrost	1.00 1.00 0.98
Typic Haplothels, outwash plains -----	15	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68	Very limited: Depth to saturated zone Depth to permafrost Cutbanks cave	1.00 0.68 0.10
685: Typic Dystrocryepts, high moraines -----	30	Not limited		Very limited: Cutbanks cave	1.00
Typic Cryaquepts, high moraines -----	25	Very limited: Ponding Flooding Depth to saturated zone Slope	1.00 1.00 1.00 0.12	Very limited: Ponding Depth to saturated zone Cutbanks cave Flooding	1.00 1.00 1.00 0.60
Aquic Dystrocryepts, high moraines-----	15	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Cutbanks cave Slope	1.00 1.00 0.16
Ruptic Histoturbels, high moraines -----	15	Very limited: Depth to permafrost Slope Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
686: Typic Dystrocryepts, moraines-----	35	Very limited: Slope	1.00	Very limited: Cutbanks cave	1.00
Typic Cryaquepts, moraines-----	30	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Histoturbels, moraines -----	25	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
687: Typic Dystrocryepts, ridges -----	45	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 1.00
Typic Haplocryands, ridges -----	40	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
Typic Histoturbels, ridges -----	15	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 0.16 0.10
688: Typic Dystrocryepts, moraines-----	40	Very limited: Slope	1.00	Very limited: Cutbanks cave	1.00
Typic Haploturbels, moraines -----	30	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Aquiturbels, moraines -----	15	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
689: Typic Dystrocryepts, moraines-----	45	Not limited		Very limited: Cutbanks cave	1.00
Typic Histoturbels, moraines -----	45	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
690: Typic Dystrocryepts, ridges -----	65	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
Typic Histoturbels, ridges -----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10
691: Typic Dystrocryepts, high moraines ----	35	Somewhat limited: Slope	0.88	Very limited: Cutbanks cave	1.00
Typic Histoturbels, high moraines-----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 0.16 0.10
Folists, high moraines -----	15	Very limited: Depth to saturated zone Content of large stones Slope Subsidence	1.00 1.00 1.00 1.00	Very limited: Content of large stones Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10
692: Typic Dystrocryepts, ridges -----	60	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 0.63
Typic Histoturbels, ridges -----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.88	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Aquiturbels, ridges -----	15	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10
693: Typic Dystrocryepts, ridges -----	65	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
Typic Histoturbels, ridges -----	20	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
693: Typic Cryofluvents, ridges-----	15	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 0.10
694: Typic Dystrogelepts, mountains -----	55	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Cutbanks cave Content of large stones	1.00 1.00 0.29
Aquic Dystrocryepts, mountains-----	20	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00
Orthels, mountains -----	15	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
695: Typic Dystrogelepts, mountains -----	30	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Cutbanks cave Content of large stones	1.00 0.29
Aquic Dystrocryepts, mountains-----	25	Very limited: Slope Depth to saturated zone	1.00 1.00	Very limited: Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00
Typic Haplorthels, mountains -----	25	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 1.00
Ruptic Histoturbels, mountains -----	20	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
696: Typic Dystrogelepts, mountains -----	85	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Cutbanks cave Content of large stones Slope	1.00 0.29 0.16
Lithic Cryofolists, mountains-----	15	Very limited: Slope Depth to saturated zone Depth to hard bedrock Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to hard bedrock Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
697: Typic Dystrogelepts, mountains -----	40	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Cutbanks cave Content of large stones	1.00 1.00 0.29
Typic Cryaquepts, mountains -----	30	Very limited: Depth to saturated zone Slope	1.00 1.00	Very limited: Depth to saturated zone Cutbanks cave Slope	1.00 1.00 0.16
Humic Dystrocryepts, mountains -----	20	Not limited		Very limited: Cutbanks cave	1.00
698: Typic Haplothels, high moraines -----	40	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 0.16
Typic Aquiturbels, high moraines -----	30	Very limited: Flooding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.97	Very limited: Depth to saturated zone Cutbanks cave Slope Depth to permafrost	1.00 1.00 1.00 0.97
Ruptic Histoturbels, high moraines -----	20	Very limited: Depth to permafrost Slope Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00
699: Typic Haploturbels, mountains -----	35	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
Typic Cryaquepts, mountains -----	25	Very limited: Slope Depth to saturated zone	1.00 1.00	Very limited: Slope Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Typic Dystrogelepts, mountains -----	25	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Cutbanks cave Slope Content of large stones	1.00 1.00 0.29

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
700: Typic Haploturbels, outwash plains-----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Histoturbels, outwash plains-----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Histels, outwash plains-----	25	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.88 0.10
701: Typic Historthels, outwash plains -----	40	Very limited: Depth to permafrost Depth to saturated zone Content of organic matter	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Histoturbels, outwash plains-----	35	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Terric Fibristels, outwash plains -----	15	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.88 0.10
702: Typic Histoturbels, river valleys-----	75	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
703: Typic Histoturbels, high moraines-----	65	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Glacic Aquiturbels, high moraines -----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Histels, high moraines -----	15	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.98	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.98 0.10

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
704: Typic Histoturbels, mountains-----	50	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Histels, mountains-----	25	Very limited: Depth to permafrost Slope Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave Slope	1.00 1.00 1.00 1.00
Typic Dystroglepts, mountains -----	25	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Slope Cutbanks cave Content of large stones	1.00 1.00 0.29
705: Typic Histoturbels, ridges -----	50	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Aquiturbels, ridges -----	25	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Terric Fibristels, ridges-----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
706: Typic Histoturbels, river valleys-----	80	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Dystrocryepts, river valleys -----	20	Very limited: Flooding	1.00	Very limited: Cutbanks cave	1.00
707: Typic Histoturbels, hills -----	65	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Dystrocryepts, hills-----	25	Very limited: Slope Depth to hard bedrock	1.00 0.68	Very limited: Depth to hard bedrock Slope Cutbanks cave	1.00 1.00 1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
708: Typic Histoturbels, ridges -----	80	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Dystrocryepts, ridges -----	20	Not limited		Very limited: Cutbanks cave	1.00
709: Typic Histoturbels, ridges -----	60	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Dystrocryepts, ridges -----	25	Very limited: Slope	1.00	Very limited: Cutbanks cave Slope	1.00 1.00
Terric Fibristels, ridges -----	15	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
710: Typic Histoturbels, ridges -----	50	Very limited: Depth to permafrost Subsidence Depth to saturated zone Content of organic matter Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 0.16 0.10
Typic Dystrocryepts, ridges -----	20	Very limited: Slope	1.00	Very limited: Slope Cutbanks cave	1.00 1.00
Typic Historthels, ridges -----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
711: Typic Histoturbels, mountains -----	60	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Typic Dystrogelepts, mountains -----	20	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Cutbanks cave Slope Content of large stones	1.00 0.84 0.29

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
712: Typic Histoturbels, moraines -----	50	Very limited: Depth to permafrost Ponding Subsidence Depth to saturated zone Content of organic matter	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00 0.10
Typic Dystrocryepts, moraines-----	30	Somewhat limited: Slope	0.88	Very limited: Cutbanks cave	1.00
Water -----	15	Not rated		Not rated	
713: Typic Histoturbels, outwash plains-----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 0.10
Typic Haplothels, outwash plains -----	35	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68	Very limited: Depth to saturated zone Depth to permafrost Cutbanks cave	1.00 0.68 0.10
Terric Hemistels, outwash plains-----	25	Very limited: Subsidence Depth to saturated zone Content of organic matter Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Content of organic matter Depth to permafrost Cutbanks cave	1.00 1.00 0.88 0.10
714: Typic Histoturbels, mountains-----	40	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 0.12	Very limited: Depth to permafrost Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Typic Haploturbels, mountains-----	20	Very limited: Depth to permafrost Subsidence Depth to saturated zone Slope	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Cutbanks cave	1.00 1.00 1.00 0.10
Typic Dystrogelepts, mountains -----	15	Very limited: Slope Content of large stones	1.00 0.29	Very limited: Cutbanks cave Content of large stones	1.00 0.29
715: Volkmar -----	90	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00

Table 12. Building Site Development: Site Improvements--Continued

Map symbol and soil name	Percent of map unit	Small commercial buildings (Standard criteria)		Shallow excavations (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
716: Volkmar -----	80	Very limited: Ponding Depth to saturated zone	1.00 1.00	Very limited: Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
Nenana -----	15	Very limited: Ponding	1.00	Very limited: Ponding Cutbanks cave	1.00 1.00
717: Water -----	100	Not rated		Not rated	

Table 13. Sanitary Facilities

(This table gives soil limitation ratings and the primary limiting factors associated with the ratings. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
601: Aquic Dystrocryepts, high moraines-----	40	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	0.50		
		Depth to cemented pan	1.00				
Restricted permeability	0.31						
Typic Dystrocryepts, high moraines-----	30	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00				
		Depth to saturated zone	1.00				
Histels, high moraines-----	20	Very limited:		Very limited:		Very limited:	
		Restricted permeability	1.00	Excess surface organic matter	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to permafrost	0.98
		Depth to bedrock	1.00	Slope	1.00		
		Depth to cemented pan	1.00	Depth to permafrost	0.98		
Depth to permafrost	0.98	Seepage	0.50				
602: Audrey-----	35	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	1.00		
Butchlake, gently sloping-----	30	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	1.00		
		Depth to saturated zone	1.00				
Typic Aquiturbels ----	30	Very limited:		Very limited:		Very limited:	
		Depth to permafrost	1.00	Depth to permafrost	1.00	Depth to permafrost	1.00
		Restricted permeability	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.50		
		Depth to bedrock	1.00	Slope	0.08		

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
603: Audrey-----	80	Very limited: Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 0.08	Very limited: Depth to saturated zone Seepage	1.00 1.00
Typic Aquiturbels-----	15	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
604: Babel-----	85	Very limited: Restricted permeability Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Slope Depth to permafrost Seepage	1.00 1.00 1.00 0.84 0.50	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.84
605: Babel-----	85	Very limited: Restricted permeability Ponding Depth to saturated zone Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Slope Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 1.00 0.84 0.50	Very limited: Ponding Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.84
606: Babel-----	80	Very limited: Restricted permeability Ponding Depth to saturated zone Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Slope Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 1.00 0.84 0.50	Very limited: Ponding Slope Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 0.84
Butchlake-----	15	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
607: Butchlake-----	90	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
608: Butchlake-----	90	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
609: Butchlake, moderately steep ----	50	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Seepage	1.00	Slope	1.00
		Depth to bedrock	1.00	Slope	1.00	Seepage	1.00
		Depth to cemented pan	1.00				
Nomercy Lake -----	35	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	1.00	Slope	0.16
		Depth to saturated zone	1.00				
Butchlake, very steep -----	5	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00				
610: Butchlake, gently sloping -----	50	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	0.68		
		Depth to saturated zone	1.00				
Southpaw -----	40	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	0.92		
		Depth to saturated zone	1.00				
611: Butchlake -----	60	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	1.00	Slope	0.16
		Depth to saturated zone	1.00				
Southpaw -----	35	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	1.00	Slope	0.16
		Depth to saturated zone	1.00				
612: Butchlake, strongly sloping -----	80	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	1.00	Slope	0.16
		Depth to saturated zone	1.00				
Southpaw -----	20	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	0.92		
		Depth to saturated zone	1.00				
		Filtering capacity	0.50				

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
613: Chena -----	95	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity Flooding	1.00 1.00 1.00 0.50 0.40	Very limited: Seepage	1.00	Very limited: Seepage Flooding	1.00 0.40
614: Chena -----	87	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity Flooding	1.00 1.00 1.00 0.50 0.40	Very limited: Seepage	1.00	Very limited: Seepage Flooding	1.00 0.40
615: Chetlake -----	80	Very limited: Restricted permeability Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage Slope Depth to permafrost	1.00 1.00 1.00 1.00 0.39	Very limited: Ponding Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.39
616: Donnelly-----	95	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 0.50	Very limited: Seepage	1.00	Very limited: Seepage	1.00
617: Donnelly, very steep -	85	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
618: Donnelly-----	65	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 0.50	Very limited: Seepage	1.00	Very limited: Seepage	1.00
Nenana-----	35	Very limited: Ponding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage	1.00 1.00	Very limited: Ponding Seepage	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
619: Gerstle-----	65	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Restricted permeability	1.00 1.00 1.00 1.00 0.29	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 0.53	Very limited: Ponding Depth to saturated zone	1.00 1.00
Moosehead-----	30	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
620: Gerstle-----	85	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Restricted permeability	1.00 1.00 1.00 1.00 0.29	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 0.53	Very limited: Ponding Depth to saturated zone	1.00 1.00
Tanana-----	15	Very limited: Restricted permeability Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 0.86 0.53	Very limited: Ponding Depth to saturated zone Depth to permafrost Flooding	1.00 1.00 0.86 0.40
621: Pits, gravel-----	100	Not rated		Not rated		Not rated	
622: Histels, outwash plains-----	100	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 0.88	Very limited: Excess surface organic matter Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.88
623: Histels, outwash plains-----	45	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 0.88	Very limited: Excess surface organic matter Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.88

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
623: Orthels, outwash plains-----	25	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Seepage Slope	1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Turbels, outwash plains-----	25	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Seepage	1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
624: Histels, mountains---	50	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Slope Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
Orthels, mountains---	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00
Typic Dystroglepts, mountains-----	20	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones	1.00 1.00 1.00 1.00 0.29	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
625: Histels, high Moraines -----	45	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 0.98	Very limited: Excess surface organic matter Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 0.98 0.50	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.98
Turbels, high Moraines -----	45	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.68	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
626: Histels, high Moraines -----	60	Very limited: Restricted permeability	1.00	Very limited: Excess surface organic matter	1.00	Very limited: Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to permafrost	0.98
		Depth to bedrock	1.00	Depth to permafrost	0.98		
		Depth to cemented pan	1.00	Seepage	0.50		
		Depth to permafrost	0.98				
Typic Cryaquepts, high moraines-----	15	Very limited: Flooding	1.00	Very limited: Ponding	1.00	Very limited: Flooding	1.00
		Ponding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	0.68		
Typic Dystrocryepts, high moraines-----	15	Very limited: Slope	1.00	Very limited: Slope	1.00	Very limited: Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00				
		Depth to saturated zone	1.00				
627: Histels, river valleys--	30	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00
		Restricted permeability	1.00	Excess surface organic matter	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	0.40
		Depth to bedrock	1.00	Seepage	1.00		
		Depth to cemented pan	1.00	Slope	0.08		
Typic Histoturbels, river valleys-----	30	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00
		Restricted permeability	1.00	Excess surface organic matter	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Seepage	0.50		
		Depth to bedrock	1.00				
Typic Historthels, river valleys-----	20	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00
		Restricted permeability	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Excess surface organic matter	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	0.40
		Subsidence	1.00				
Typic Aquiturbels, river valleys-----	10	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00	Very limited: Depth to permafrost	1.00
		Restricted permeability	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00			Flooding	0.40
		Subsidence	1.00				

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
628: Humic Dystrocryepts, high moraines-----	50	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Aquic Umbrorthels, high moraines-----	40	Very limited: Restricted permeability Depth to saturated zone Slope Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.68	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.68
629: Jarvis -----	85	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage Flooding	1.00 1.00 1.00 0.40
630: Jarvis -----	85	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage Flooding	1.00 1.00 1.00 0.40
631: Jarvis -----	55	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage Flooding	1.00 1.00 1.00 0.40
Chena -----	40	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity Flooding	1.00 1.00 1.00 0.50 0.40	Very limited: Seepage	1.00	Very limited: Seepage Flooding	1.00 0.40

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
632: Chena- -----	50	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity Flooding	1.00 1.00 1.00 0.50 0.40	Very limited: Seepage	1.00	Very limited: Seepage Flooding	1.00 0.40
Jarvis -----	45	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage Flooding	1.00 1.00 1.00 0.40
633: Jarvis -----	55	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage Flooding	1.00 1.00 1.00 0.40
Salchaket -----	35	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Flooding	1.00 1.00 0.40
634: Lithic Cryofolists, mountains-----	25	Very limited: Restricted permeability Depth to bedrock Depth to saturated zone Slope Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to hard bedrock Excess surface organic matter Slope Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Depth to bedrock Slope	1.00 1.00 1.00
Typic Cryorthents, mountains-----	25	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Typic Dystroglepts, mountains-----	20	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones	1.00 1.00 1.00 1.00 0.29	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
634: Typic Histoturbels, mountains-----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Slope Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
635: McKinley, moderately steep-----	90	Very limited: Restricted permeability Depth to bedrock Slope Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to soft bedrock Slope Seepage Content of large stones	1.00 1.00 1.00 1.00	Very limited: Seepage Depth to bedrock Slope	1.00 1.00 1.00
636: McKinley, very steep--	85	Very limited: Restricted permeability Depth to bedrock Slope Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to soft bedrock Slope Seepage Content of large stones	1.00 1.00 1.00 1.00	Very limited: Slope Seepage Depth to bedrock	1.00 1.00 1.00
637: Moosehead-----	90	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
638: Mosquito-----	80	Very limited: Restricted permeability Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Excess surface organic matter Seepage Depth to saturated zone Depth to permafrost	1.00 1.00 1.00 1.00 0.92	Very limited: Ponding Depth to saturated zone Depth to permafrost Flooding	1.00 1.00 0.92 0.40
639: Nenana-----	85	Very limited: Ponding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage	1.00 1.00	Very limited: Ponding Seepage	1.00 1.00
640: Nenana-----	65	Very limited: Ponding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Slope	1.00 1.00 1.00	Very limited: Ponding Seepage Slope	1.00 1.00 0.16

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
640: Donnelly-----	15	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity Slope	1.00 1.00 1.00 0.50 0.16	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.16
641: Nenana-----	75	Very limited: Ponding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Slope	1.00 1.00 1.00	Very limited: Ponding Seepage	1.00 1.00
Donnelly-----	15	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 0.50	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage	1.00
642: Nenana-----	60	Very limited: Ponding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage	1.00 1.00	Very limited: Ponding Seepage	1.00 1.00
Urban land-----	30	Not rated		Not rated		Not rated	
643: Ninchuun-----	80	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
644: Ninchuun-----	50	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Ponding Depth to saturated	1.00 1.00 1.00
Audrey-----	40	Very limited: Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 0.08	Very limited: Depth to saturated zone Seepage	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
645: Ninchuun-----	75	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16
Audrey-----	15	Very limited: Depth to saturated zone Depth to bedrock Depth to cemented pan Slope	1.00 1.00 1.00 0.16	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 1.00	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 0.16
646: Nomeracy Lake-----	35	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Slope	1.00 1.00 1.00 0.16	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.16
Butchlake-----	25	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Slope	1.00 1.00 1.00 0.16	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.16
Water-----	20	Not rated		Not rated		Not rated	
647: Riverwash-----	100	Not rated		Not rated		Not rated	
648: Salchaket-----	90	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Flooding	1.00 1.00 0.40
649: Salchaket-----	90	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Flooding	1.00 1.00 0.40
650: Tanacross-----	85	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.53	Very limited: Depth to permafrost Ponding Depth to saturated zone Flooding	1.00 1.00 1.00 0.40

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
651: Tanana -----	85	Very limited: Restricted permeability Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 0.86 0.53	Very limited: Ponding Depth to saturated zone Depth to permafrost Flooding	1.00 1.00 0.86 0.40
652: Terric Fibristels, river valleys-----	43	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Flooding	1.00 1.00 0.40
Ruptic-Histic Aquiturbels, river valleys -----	42	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Excess surface organic matter Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Flooding	1.00 1.00 1.00 0.40
Typic Aquiturbels, river valleys-----	15	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.32	Very limited: Depth to permafrost Ponding Depth to saturated zone Flooding	1.00 1.00 1.00 0.40
Typic Histoturbels, river valleys-----	0	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
653: Terric Fibristels, moraines -----	65	Very limited: Restricted permeability Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Excess surface organic matter Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 1.00 0.74	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.74

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
653: Typic Histoturbels, moraines -----	25	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
654: Terric Hemistels-----	95	Very limited: Restricted permeability Ponding Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Excess surface organic matter Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 1.00 1.00 0.92 0.50	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.92
655: Terric Hemistels-----	55	Very limited: Restricted permeability Ponding Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Excess surface organic matter Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 1.00 1.00 0.92 0.50	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.92
Typic Aquiturbels ----	20	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
656: Tetlin, moderately steep -----	95	Very limited: Restricted permeability Depth to saturated zone Subsidence Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 0.92 0.53	Very limited: Depth to saturated Slope Depth to permafrost	1.00 1.00 0.92
657: Tetlin -----	100	Very limited: Restricted permeability Depth to saturated zone Subsidence Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Slope Depth to permafrost Seepage	1.00 1.00 0.92 0.53	Very limited: Depth to saturated zone Depth to permafrost Slope	1.00 0.92 0.16
658: Tetlin -----	100	Very limited: Restricted permeability Depth to saturated zone Subsidence Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Slope Depth to permafrost Seepage	1.00 1.00 0.92 0.53	Very limited: Depth to saturated zone Slope Depth to permafrost	1.00 1.00 0.92

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
659: Glacier-----	100	Not rated		Not rated		Not rated	
660: Turbels-----	85	Very limited: Restricted permeability Depth to saturated zone Subsidence Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost Content of large stones	1.00 1.00 1.00 0.46 0.01	Very limited: Depth to saturated zone Seepage Depth to permafrost Slope	1.00 1.00 0.46 0.04
Tetlin-----	15	Very limited: Restricted permeability Depth to saturated zone Subsidence Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 0.92 0.53	Very limited: Depth to saturated zone Depth to permafrost Slope	1.00 0.92 0.04
661: Turbels, moderately steep-----	80	Very limited: Restricted permeability Depth to saturated zone Subsidence Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost Content of large stones	1.00 1.00 1.00 0.46 0.01	Very limited: Depth to saturated zone Slope Seepage Depth to permafrost	1.00 1.00 1.00 0.46
662: Turbels, steep-----	85	Very limited: Restricted permeability Depth to saturated zone Slope Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost Content of large stones	1.00 1.00 1.00 0.46 0.01	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.46
663: Turbels, very steep---	85	Very limited: Restricted permeability Depth to saturated zone Slope Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost Content of large stones	1.00 1.00 1.00 0.46 0.01	Very limited: Slope Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.46
664: Turbels, mountains---	70	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Aquic Dystrocryepts, mountains-----	15	Very limited: Depth to saturated zone Depth to bedrock Depth to cemented pan Slope	1.00 1.00 1.00 0.63	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 1.00	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 0.63
Water-----	10	Not rated		Not rated		Not rated	

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
665: Turbels, mountains----	55	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.37
Typic Dystrogelepts, mountains-----	20	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones	1.00 1.00 1.00 0.29	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage	1.00
Ruptic-Histic Aquiturbels, mountains-----	15	Very limited: Restricted permeability Depth to saturated zone Subsidence Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00 1.00	Very limited: Excess surface organic matter Slope Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 1.00 0.46	Very limited: Depth to saturated zone Slope Seepage Depth to permafrost	1.00 1.00 1.00 0.46
666: Typic Aquiturbels ----	90	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
667: Typic Aquiturbels ----	90	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16
668: Typic Aquiturbels, gently sloping -----	95	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
669: Typic Aquiturbels -----	40	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16
Butchlake -----	35	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Slope	1.00 1.00 1.00 0.16	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.16
Southpaw -----	20	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity Slope	1.00 1.00 1.00 0.50 0.16	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.16
670: Typic Aquiturbels -----	80	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
Terric Hemistels-----	20	Very limited: Restricted permeability Ponding Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Excess surface organic matter Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 1.00 0.92 0.50	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.92
671: Typic Aquiturbels -----	80	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone Slope	1.00 1.00 1.00 0.16
Terric Hemistels-----	15	Very limited: Restricted permeability Ponding Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Excess surface organic matter Depth to saturated zone Slope Depth to permafrost	1.00 1.00 1.00 0.92 0.92	Very limited: Ponding Depth to saturated zone Depth to permafrost	1.00 1.00 0.92

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
672: Typic Aquiturbels, ridges -----	80	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, ridges -----	15	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Slope	1.00 1.00 1.00 0.16	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.16
673: Typic Aquiturbels, moraines -----	45	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Seepage	1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, moraines -----	30	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage Slope	1.00 0.68	Very limited: Seepage	1.00
Typic Haploturbels, moraines -----	15	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
674: Typic Aquiturbels, river valleys-----	50	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Depth to saturated zone Flooding	1.00 1.00 1.00 0.40
Typic Histoturbels, river valleys-----	40	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.68 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675: Typic Aquorthels, mountains-----	35	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
Typic Histoturbels, mountains-----	35	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00
676: Typic Cryaquepts-----	75	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Flooding	1.00 1.00 1.00 1.00 0.40	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage Flooding	1.00 1.00 1.00 0.40
677: Typic Cryofluvents, river valleys-----	100	Very limited: Flooding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Flooding Seepage	1.00 1.00	Very limited: Flooding Seepage	1.00 1.00
678: Typic Cryofluvents, river valleys-----	40	Very limited: Flooding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Flooding Seepage Slope	1.00 1.00 0.08	Very limited: Flooding Seepage	1.00 1.00
Histels, river valleys--	30	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Flooding	1.00 1.00 0.40
Typic Haploturbels, river valleys-----	30	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
679: Typic Cryofluvents, river valleys-----	45	Very limited: Flooding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Flooding Seepage	1.00 1.00	Very limited: Flooding Seepage	1.00 1.00
Typic Dystrocryepts, river valleys-----	45	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Flooding	1.00 1.00 1.00 0.40	Very limited: Seepage	1.00	Very limited: Seepage Flooding	1.00 0.40
680: Typic Cryofluvents, river valleys-----	45	Very limited: Flooding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Flooding Seepage	1.00 1.00	Very limited: Flooding Seepage	1.00 1.00
Typic Dystrocryepts, river valleys-----	45	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Flooding	1.00 1.00 1.00 0.40	Very limited: Seepage	1.00	Very limited: Seepage Flooding	1.00 0.40
Typic Histoturbels, river valleys-----	10	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
681: Typic Dystrocryepts, ridges -----	55	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Ruptic-Histic Aquiturbels, ridges --	35	Very limited: Restricted permeability Depth to saturated zone Subsidence Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00 1.00	Very limited: Excess surface organic matter Depth to saturated zone Slope Depth to permafrost Seepage	1.00 1.00 1.00 0.99 0.50	Very limited: Depth to saturated zone Depth to permafrost Slope	1.00 0.99 0.16

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
682: Typic Dystrocryepts, high moraines-----	45	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Seepage Slope	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Turbels, high Moraines -----	25	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16
Water- -----	20	Not rated		Not rated		Not rated	
683: Typic Dystrocryepts, moraines -----	55	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Turbels, moraines ----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16
Water- -----	15	Not rated		Not rated		Not rated	
684: Typic Dystrocryepts, outwash plains-----	70	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage	1.00	Very limited: Seepage	1.00
Typic Aquiturbels, outwash plains-----	15	Very limited: Restricted permeability Depth to saturated zone Subsidence Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Depth to permafrost Seepage Slope	1.00 0.98 0.50 0.08	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.98
Typic Haplothels, outwash plains-----	15	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 0.68	Very limited: Depth to saturated zone Depth to permafrost Seepage	1.00 0.68 0.50	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
685: Typic Dystrocryepts, high moraines-----	30	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage Slope	1.00 0.32	Very limited: Seepage	1.00
Typic Cryaquepts, high moraines-----	25	Very limited: Flooding Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Ponding Flooding Depth to saturated zone Seepage Slope	1.00 1.00 1.00 1.00 0.68	Very limited: Flooding Ponding Depth to saturated zone Seepage	1.00 1.00 1.00 1.00
Aquic Dystrocryepts, high moraines-----	15	Very limited: Depth to saturated zone Depth to bedrock Depth to cemented pan Restricted permeability Slope	1.00 1.00 1.00 0.31 0.16	Very limited: Depth to saturated zone Slope Seepage	1.00 1.00 0.50	Very limited: Depth to saturated zone Slope	1.00 0.16
Ruptic Histoturbels, high moraines-----	15	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Slope Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00
686: Typic Dystrocryepts, moraines-----	35	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage	1.00
Typic Cryaquepts, moraines-----	30	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Restricted permeability	1.00 1.00 1.00 1.00 0.31	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 0.50	Very limited: Ponding Depth to saturated zone	1.00 1.00
Typic Histoturbels, moraines-----	25	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
687: Typic Dystrocryepts, ridges -----	45	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Seepage Slope	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Typic Haplocryands, ridges -----	40	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Typic Histoturbels, ridges -----	15	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16
688: Typic Dystrocryepts, moraines -----	40	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage	1.00
Typic Haploturbels, moraines -----	30	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.68	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Aquiturbels, moraines -----	15	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Seepage Slope	1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
689: Typic Dystrocryepts, moraines -----	45	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage	1.00	Very limited: Seepage	1.00
Typic Histoturbels, moraines -----	45	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
690: Typic Dystrocryepts, ridges -----	65	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Typic Histoturbels, ridges -----	35	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
691: Typic Dystrocryepts, high moraines-----	35	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage	1.00
Typic Histoturbels, high moraines-----	35	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16
Folists, high Moraines -----	15	Very limited: Depth to saturated zone Content of large stones Slope Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00 1.00	Very limited: Excess surface organic matter Seepage Depth to saturated zone Slope Content of large stones	1.00 1.00 1.00 1.00 1.00 0.78	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
692: Typic Dystrocryepts, ridges -----	60	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Slope	1.00 1.00 1.00 0.63	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.63
Typic Histoturbels, ridges -----	25	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Aquiturbels, ridges -----	15	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
693: Typic Dystrocryepts, ridges -----	65	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Typic Histoturbels, ridges -----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Slope Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00
Typic Cryofluvents, ridges -----	15	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
694: Typic Dystrogelepts, mountains-----	55	Very limited:		Very limited:		Very limited:	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00				
		Depth to saturated zone	1.00				
		Content of large stones	0.29				
Aquic Dystrocryepts, mountains-----	20	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	1.00	Seepage	1.00	Slope	1.00
		Depth to bedrock	1.00	Slope	1.00	Seepage	1.00
		Depth to cemented pan	1.00				
Orthels, mountains---	15	Very limited:		Very limited:		Very limited:	
		Depth to permafrost	1.00	Depth to permafrost	1.00	Depth to permafrost	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.68		
		Subsidence	1.00				
		Depth to bedrock	1.00				
695: Typic Dystrogelepts, mountains-----	30	Very limited:		Very limited:		Very limited:	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00	Slope	1.00		
		Depth to saturated zone	1.00				
		Content of large stones	0.29				
Aquic Dystrocryepts, mountains-----	25	Very limited:		Very limited:		Very limited:	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Depth to cemented pan	1.00				
Typic Haploorthels, mountains-----	25	Very limited:		Very limited:		Very limited:	
		Depth to permafrost	1.00	Depth to permafrost	1.00	Depth to permafrost	1.00
		Restricted permeability	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	1.00	Seepage	1.00		
		Depth to bedrock	1.00				
Ruptic Histoturbels, mountains-----	20	Very limited:		Very limited:		Very limited:	
		Depth to permafrost	1.00	Depth to permafrost	1.00	Depth to permafrost	1.00
		Restricted permeability	1.00	Excess surface organic matter	1.00	Slope	1.00
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Seepage	1.00		

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
696: Typic Dystrogelepts, mountains-----	85	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones Slope	1.00 1.00 1.00 0.29 0.16	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage Slope	1.00 0.16
Lithic Cryofolists, mountains-----	15	Very limited: Restricted permeability Depth to bedrock Depth to saturated zone Slope Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to hard bedrock Excess surface organic matter Slope Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Depth to bedrock Slope	1.00 1.00 1.00
697: Typic Dystrogelepts, mountains-----	40	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones	1.00 1.00 1.00 1.00 0.29	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Typic Cryaquepts, mountains-----	30	Very limited: Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity Slope	1.00 1.00 1.00 0.50 0.16	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 1.00	Very limited: Depth to saturated zone Seepage Slope	1.00 1.00 0.16
Humic Dystrocryepts, mountains-----	20	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage	1.00	Very limited: Seepage	1.00
698: Typic Haplorthels, high moraines-----	40	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16
Typic Aquiturbels, high moraines-----	30	Very limited: Restricted permeability Depth to saturated zone Slope Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to saturated zone Slope Depth to permafrost Seepage	1.00 1.00 0.97 0.50	Very limited: Depth to saturated zone Slope Depth to permafrost Flooding	1.00 1.00 0.97 0.40

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
698: Ruptic Histoturbels, high moraines-----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Slope Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
699: Typic Haploturbels, mountains-----	35	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Slope Depth to saturated zone	1.00 1.00 1.00
Typic Cryaquepts, mountains-----	25	Very limited: Depth to saturated zone Slope Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Slope Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited: Slope Depth to saturated zone Seepage	1.00 1.00 1.00
Typic Dystrogelepts, mountains-----	25	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones	1.00 1.00 1.00 1.00 0.29	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
700: Typic Haploturbels, outwash plains-----	40	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Seepage	1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Histoturbels, outwash plains-----	35	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
700: Histels, outwash plains-----	25	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 0.88	Very limited: Excess surface organic matter Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.88
701: Typic Historthels, outwash plains-----	40	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Histoturbels, outwash plains-----	35	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Terric Fibristels, outwash plains-----	15	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 1.00 0.88	Very limited: Excess surface organic matter Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.88
702: Typic Histoturbels, river valleys-----	75	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
703: Typic Histoturbels, high moraines-----	65	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
703: Glacic Aquiturbels, high moraines-----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone Seepage Slope	1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Histels, high Moraines-----	15	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 1.00 0.98	Very limited: Excess surface organic matter Depth to saturated zone Depth to permafrost Seepage	1.00 1.00 0.98 0.50	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.98
704: Typic Histoturbels, mountains-----	50	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Histels, mountains----	25	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Slope Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
Typic Dystrogelepts, mountains-----	25	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones	1.00 1.00 1.00 1.00 0.29	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
705: Typic Histoturbels, ridges-----	50	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
705: Typic Aquiturbels, ridges -----	25	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Terric Fibristels, ridges -----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
706: Typic Histoturbels, river valleys-----	80	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage Slope	1.00 1.00 1.00 0.50 0.08	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, river valleys-----	20	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Flooding	1.00 1.00 1.00 0.40	Very limited: Seepage Slope	1.00 0.08	Very limited: Seepage Flooding	1.00 0.40
707: Typic Histoturbels, hills -----	65	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.68 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, hills -----	25	Very limited: Restricted permeability Depth to bedrock Slope Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to hard bedrock Slope Seepage	1.00 1.00 1.00	Very limited: Slope Depth to bedrock Seepage	1.00 1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
708: Typic Histoturbels, ridges -----	80	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.68 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, ridges -----	20	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage	1.00	Very limited: Seepage	1.00
709: Typic Histoturbels, ridges -----	60	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.68 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystrocryepts, ridges -----	25	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Seepage Slope	1.00 1.00	Very limited: Slope Seepage	1.00 1.00
Terric Fibristels, ridges -----	15	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone	1.00 1.00 1.00	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
710: Typic Histoturbels, ridges -----	50	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 0.16
Typic Dystrocryepts, ridges -----	20	Very limited: Slope Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00 1.00	Very limited: Slope Seepage	1.00 1.00	Very limited: Slope Seepage	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
710: Typic Historthels, ridges -----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.68 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
711: Typic Histoturbels, mountains-----	60	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Dystroglepts, mountains-----	20	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Slope Content of large stones	1.00 1.00 1.00 0.84 0.29	Very limited: Slope Seepage	1.00 1.00	Very limited: Seepage Slope	1.00 0.84
712: Typic Histoturbels, moraines -----	50	Very limited: Depth to permafrost Restricted permeability Ponding Depth to saturated zone Subsidence	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Ponding Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Ponding Depth to saturated zone	1.00 1.00 1.00
Typic Dystrocryepts, moraines -----	30	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone	1.00 1.00 1.00	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage	1.00
Water -----	15	Not rated		Not rated		Not rated	
713: Typic Histoturbels, outwash plains-----	40	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
713: Typic Haplothels, outwash plains-----	35	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 0.68	Very limited: Depth to saturated zone Depth to permafrost Seepage	1.00 0.68 0.50	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.68
Terric Hemistels, outwash plains-----	25	Very limited: Restricted permeability Depth to saturated zone Depth to bedrock Depth to cemented pan Depth to permafrost	1.00 1.00 1.00 1.00 0.88	Very limited: Excess surface organic matter Depth to saturated zone Seepage Depth to permafrost	1.00 1.00 1.00 0.88	Very limited: Depth to saturated zone Depth to permafrost	1.00 0.88
714: Typic Histoturbels, mountains-----	40	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Depth to bedrock	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Excess surface organic matter Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.68 0.50	Very limited: Depth to permafrost Depth to saturated zone	1.00 1.00
Typic Haploturbels, mountains-----	20	Very limited: Depth to permafrost Restricted permeability Depth to saturated zone Subsidence Slope	1.00 1.00 1.00 1.00 1.00	Very limited: Depth to permafrost Slope Depth to saturated zone Seepage	1.00 1.00 1.00 0.50	Very limited: Depth to permafrost Depth to saturated zone Slope	1.00 1.00 1.00
Typic Dystroglepts, mountains-----	15	Very limited: Depth to bedrock Depth to cemented pan Depth to saturated zone Content of large stones	1.00 1.00 1.00 0.29	Very limited: Seepage Slope	1.00 1.00	Very limited: Seepage	1.00
715: Volkmar -----	90	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone Slope	1.00 1.00 1.00 0.08	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 1.00

Table 13. Sanitary Facilities—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields (Alaska criteria)		Sewage lagoons (Alaska criteria)		Sanitary landfill (area) (Standard criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
716: Volkmar -----	80	Very limited: Ponding Depth to saturated zone Depth to bedrock Depth to cemented pan Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage Depth to saturated zone	1.00 1.00 1.00	Very limited: Ponding Depth to saturated zone Seepage	1.00 1.00 1.00
Nenana-----	15	Very limited: Ponding Depth to bedrock Depth to cemented pan Depth to saturated zone Filtering capacity	1.00 1.00 1.00 1.00 0.50	Very limited: Ponding Seepage	1.00 1.00	Very limited: Ponding Seepage	1.00 1.00
717: Water -----	100	Not rated		Not rated		Not rated	

Table 14. Construction Materials: Sand and Gravel

(This table gives soil suitability ratings and the primary limiting factors associated with the ratings. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the potential limitation. Information in this table indicates the dominant soil condition but does not eliminate the need for on-site investigation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
601: Aquic Dystricrypts, high moraines-----	40	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Dystricrypts, high moraines-----	30	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Histels, high moraines-----	20	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02
602: Audrey-----	35	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Butchlake, gently sloping-----	30	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Aquiturbels-----	30	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
603: Audrey-----	80	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Aquiturbels-----	15	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
604: Babel-----	85	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.16	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.16
605: Babel-----	85	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.16	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.16
Butchlake-----	15	Improbable: Bottom layer not a source Large rock fragments	0.00 .29	Improbable: Bottom layer a poor source Large rock fragments	0.00 0.29
606: Babel-----	80	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.16	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.16
Butchlake-----	15	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
607: Butchlake -----	90	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
608: Butchlake -----	90	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
609: Butchlake, moderately steep -	50	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Nomercy Lake -----	35	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Butchlake, very steep -----	5	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
610: Butchlake, gently sloping -----	50	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Southpaw -----	40	Gravel source		Improbable: Bottom layer not a source	0.00
611: Butchlake -----	60	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Southpaw -----	35	Gravel source		Improbable: Bottom layer not a source	0.00
612: Butchlake, strongly sloping -----	80	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Southpaw -----	20	Gravel source		Improbable: Bottom layer not a source	0.00
613: Chena -----	95	Improbable: Bottom layer not a source	0.00	Sand source	
614: Chena -----	87	Improbable: Bottom layer not a source	0.00	Sand source	
615: Chetlake -----	80	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.62	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.62
616: Donnelly -----	95	Gravel source		Improbable: Bottom layer not a source	0.00
617: Donnelly, very steep -----	85	Gravel source		Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
618: Donnelly-----	65	Gravel source		Improbable: Bottom layer not a source	0.00
Nenana-----	35	Gravel source		Improbable: Bottom layer not a source	0.00
619: Gerstle-----	65	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Moosehead-----	30	Gravel source		Improbable: Bottom layer not a source	0.00
620: Gerstle-----	85	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Tanana-----	15	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.14	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.14
621: Pits, gravel-----	100	Not rated		Not rated	
622: Histels, outwash plains-----	100	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12
623: Histels, outwash plains-----	45	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12
Orthels, outwash plains-----	25	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Turbels, outwash plains-----	25	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
624: Histels, mountains-----	50	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00
Orthels, mountains-----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624: Typic Dystrogelepts, mountains-----	20	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
625: Histels, high moraines-----	45	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02
Turbels, high moraines-----	45	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
626: Histels, high moraines-----	60	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02
Typic Cryaquepts, high moraines-----	15	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Dystrocryepts, high moraines-----	15	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
627: Histels, river valleys-----	30	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00
Typic Histoturbels, river valleys-----	30	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Historthels, river valleys-----	20	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Aquiturbels, river valleys-----	10	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
628: Humic Dystrocryepts, high moraines-----	50	Gravel source		Improbable: Bottom layer not a source	0.00
Aquic Umbrorthels, high moraines-----	40	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.32	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.32

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
629: Jarvis -----	85	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.29
630: Jarvis -----	85	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.29
631: Jarvis -----	55	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.29
Chena -----	40	Improbable: Bottom layer not a source	0.00	Sand source	
632: Chena -----	50	Improbable: Bottom layer not a source	0.00	Sand source	
Jarvis -----	45	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.29
633: Jarvis -----	55	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.29
Salchaket -----	35	Gravel source		Improbable: Bottom layer not a source	0.00
634: Lithic Cryofolists, mountains-----	25	Improbable: Organic soil Hard bedrock within 4 feet Bottom layer not a source	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Hard bedrock within 4 feet	0.00 0.00 0.00
Typic Cryorthents, mountains-----	25	Gravel source		Improbable: Bottom layer not a source	0.00
Typic Dystrogelepts, mountains-----	20	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Histoturbels, mountains-----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
635: McKinley, moderately steep -----	90	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
636: McKinley, very steep -----	85	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
637: Moosehead-----	90	Gravel source		Improbable: Bottom layer not a source	0.00
638: Mosquito-----	80	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08
639: Nenana-----	85	Gravel source		Improbable: Bottom layer not a source	0.00
640: Nenana-----	65	Gravel source		Improbable: Bottom layer not a source	0.00
Donnelly-----	15	Gravel source		Improbable: Bottom layer not a source	0.00
641: Nenana-----	75	Gravel source		Improbable: Bottom layer not a source	0.00
Donnelly-----	15	Gravel source		Improbable: Bottom layer not a source	0.00
642: Nenana-----	60	Gravel source		Improbable: Bottom layer not a source	0.00
Urban land-----	30	Not rated		Not rated	
643: Ninchuun-----	80	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00
644: Ninchuun-----	50	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00
Audrey-----	40	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
645: Ninchuun-----	75	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00
Audrey-----	15	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
646: Nomercy Lake -----	35	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Butchlake -----	25	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Water -----	20	Not rated		Not rated	
647: Riverwash -----	100	Not rated		Not rated	
648: Salchaket -----	90	Gravel source		Improbable: Bottom layer not a source	0.00
649: Salchaket -----	90	Gravel source		Improbable: Bottom layer not a source	0.00
650: Tanacross -----	85	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
651: Tanana -----	85	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.14	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.14
652: Terric Fibristels, river valleys-----	43	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00
Ruptic-Histic Aquiturbels, river valleys -----	42	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Aquiturbels, river valleys-----	15	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Histoturbels, river valleys-----	0	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
653: Terric Fibristels, moraines----	65	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.26	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.26

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
653: Typic Histoturbels, moraines -----	25	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
654: Terric Hemistels-----	95	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08
655: Terric Hemistels-----	55	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08
Typic Aquiturbels -----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
656: Tetlin, moderately steep -----	95	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08
657: Tetlin -----	100	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08
658: Tetlin -----	100	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08
659: Glacier-----	100	Not rated		Not rated	
660: Turbels -----	85	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54
Tetlin -----	15	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.08
661: Turbels, moderately steep ----	80	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54
662: Turbels, steep -----	85	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
663: Turbels, very steep-----	85	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54
664: Turbels, mountains-----	70	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Aquic Dystricryepts, mountains-----	15	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Water -----	10	Not rated		Not rated	
665: Turbels, mountains-----	55	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystricryepts, mountains-----	20	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Ruptic-Histic Aquiturbels, mountains-----	15	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.54
666: Typic Aquiturbels -----	90	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
667: Typic Aquiturbels -----	90	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
668: Typic Aquiturbels, gently sloping -----	95	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
669: Typic Aquiturbels -----	40	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Butchlake -----	35	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Southpaw -----	20	Gravel source		Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
670: Typic Aquiturbels -----	80	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Terric Hemistels-----	20	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08
671: Typic Aquiturbels -----	80	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Terric Hemistels-----	15	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.08
672: Typic Aquiturbels, ridges ----	80	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, ridges---	15	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
673: Typic Aquiturbels, moraines -----	45	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, moraines -----	30	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Haploturbels, moraines -----	15	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
674: Typic Aquiturbels, river valleys-----	50	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Histoturbels, river valleys-----	40	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
675: Typic Aquorthels, mountains-----	35	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Histoturbels, mountains-----	35	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
676: Typic Cryaquepts-----	75	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
677: Typic Cryofluvents, river valleys-----	100	Gravel source		Improbable: Bottom layer not a source	0.00
678: Typic Cryofluvents, river valleys-----	40	Gravel source		Improbable: Bottom layer not a source	0.00
Histels, river valleys-----	30	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00
Typic Haploturbels, river valleys-----	30	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
679: Typic Cryofluvents, river valleys-----	45	Gravel source		Improbable: Bottom layer not a source	0.00
Typic Dystrocryepts, river valleys-----	45	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.80
680: Typic Cryofluvents, river valleys-----	45	Gravel source		Improbable: Bottom layer not a source	0.00
Typic Dystrocryepts, river valleys-----	45	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.80
Typic Histoturbels, river valleys-----	10	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
681: Typic Dystricrypts, ridges -----	55	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
Ruptic-Histic Aquiturbels, ridges -----	35	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.01	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.01
682: Typic Dystricrypts, high moraines -----	45	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Turbels, high moraines -----	25	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Water -----	20	Not rated		Not rated	
683: Typic Dystricrypts, moraines -----	55	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Turbels, moraines -----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Water -----	15	Not rated		Not rated	
684: Typic Dystricrypts, outwash plains -----	70	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Aquiturbels, outwash plains -----	15	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.02	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.02
Typic Haplothels, outwash plains -----	15	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.32	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.32
685: Typic Dystricrypts, high moraines -----	30	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Cryaquepts, high moraines -----	25	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Aquic Dystricrypts, high moraines -----	15	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
685: Ruptic Histoturbels, high moraines-----	15	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
686: Typic Dystrocryepts, moraines-----	35	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Cryaquepts, moraines-----	30	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Histoturbels, moraines-----	25	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
687: Typic Dystrocryepts, ridges-----	45	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
Typic Haplocryands, ridges-----	40	Gravel source		Improbable: Bottom layer not a source	0.00
Typic Histoturbels, ridges-----	15	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
688: Typic Dystrocryepts, moraines-----	40	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Haploturbels, moraines-----	30	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Aquiturbels, moraines-----	15	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
689: Typic Dystrocryepts, moraines-----	45	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Histoturbels, moraines-----	45	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
690: Typic Dystricrypts, ridges -----	65	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
Typic Histoturbels, ridges -----	35	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
691: Typic Dystricrypts, high moraines -----	35	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Histoturbels, high moraines -----	35	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Folists, high moraines -----	15	Improbable: Organic soil	0.00	Improbable: Organic soil Bottom layer not a source	0.00 0.00
692: Typic Dystricrypts, ridges -----	60	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
Typic Histoturbels, ridges -----	25	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Aquiturbels, ridges -----	15	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
693: Typic Dystricrypts, ridges -----	65	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
Typic Histoturbels, ridges -----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Cryofluents, ridges -----	15	Improbable: Bottom layer not a source	0.00	Sand source	

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
694: Typic Dystrogelepts, mountains-----	55	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Aquic Dystrocryepts, mountains-----	20	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Orthels, mountains-----	15	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
695: Typic Dystrogelepts, mountains-----	30	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Aquic Dystrocryepts, mountains-----	25	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Haplorthels, mountains-----	25	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00
Ruptic Histoturbels, mountains-----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
696: Typic Dystrogelepts, mountains-----	85	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Lithic Cryofolists, mountains-----	15	Improbable: Organic soil Hard bedrock within 4 feet Bottom layer not a source	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Hard bedrock within 4 feet	0.00 0.00 0.00
697: Typic Dystrogelepts, mountains-----	40	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Typic Cryaquepts, mountains-----	30	Gravel source		Improbable: Bottom layer not a source	0.00
Humic Dystrocryepts, mountains-----	20	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
698: Typic Haplothels, high moraines-----	40	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Aquiturbels, high moraines-----	30	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.03	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.03
Ruptic Histoturbels, high moraines-----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
699: Typic Haploturbels, mountains-----	35	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Cryaquepts, mountains-----	25	Gravel source		Improbable: Bottom layer not a source	0.00
Typic Dystroglepts, mountains-----	25	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
700: Typic Haploturbels, outwash plains-----	40	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.00
Typic Histoturbels, outwash plains-----	35	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Histels, outwash plains-----	25	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
701: Typic Historthels, outwash plains-----	40	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Histoturbels, outwash plains-----	35	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Terric Fibristels, outwash plains-----	15	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12
702: Typic Histoturbels, river valleys-----	75	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
703: Typic Histoturbels, high moraines-----	65	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Glacic Aquiturbels, high moraines-----	20	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Histels, high moraines-----	15	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.02
704: Typic Histoturbels, mountains-----	50	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Histels, mountains-----	25	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00
Typic Dystrogelepts, mountains-----	25	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
705: Typic Histoturbels, ridges -----	50	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Aquiturbels, ridges -----	25	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Terric Fibristels, ridges -----	20	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00
706: Typic Histoturbels, river valleys-----	80	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, river valleys-----	20	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.80
707: Typic Histoturbels, hills -----	65	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, hills-----	25	Improbable: Hard bedrock within 4 feet Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Hard bedrock within 4 feet	0.00 0.00
708: Typic Histoturbels, ridges ----	80	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, ridges---	20	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
709: Typic Histoturbels, ridges ----	60	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, ridges---	25	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
Terric Fibristels, ridges-----	15	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00	Improbable: Organic soil Bottom layer not a source Depth to permafrost	0.00 0.00 0.00

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
710: Typic Histoturbels, ridges -----	50	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, ridges -----	20	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.86
Typic Historthels, ridges -----	20	Improbable: Depth to permafrost Bottom layer not a source	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
711: Typic Histoturbels, mountains-----	60	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrogelepts, mountains-----	20	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
712: Typic Histoturbels, moraines -----	50	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrocryepts, moraines -----	30	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
Water -----	15	Not rated		Not rated	
713: Typic Histoturbels, outwash plains-----	40	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Haplothels, outwash plains-----	35	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.32	Improbable: Bottom layer not a source No permafrost depth limitation	0.00 0.32
Terric Hemistels, outwash plains-----	25	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12	Improbable: Organic soil Bottom layer not a source No permafrost depth limitation	0.00 0.00 0.12

Table 14. Construction Materials: Sand and Gravel

Map symbol and soil name	Percent of map unit	Potential source of gravel (Alaska criteria)		Potential source of sand (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
714: Typic Histoturbels, mountains-----	40	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Haploturbels, mountains-----	20	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00	Improbable: Bottom layer not a source Depth to permafrost	0.00 0.00
Typic Dystrogelepts, mountains-----	15	Improbable: Bottom layer not a source	0.00	Improbable: Bottom layer not a source	0.00
715: Volkmar -----	90	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.83
716: Volkmar -----	80	Improbable: Bottom layer not a source	0.00	Probable: Bottom layer	0.83
Nenana-----	15	Gravel source		Improbable: Bottom layer not a source	0.00
717: Water -----	100	Not rated		Not rated	

Table 15. Construction Materials: Topsoil and Roadfill

(This table gives soil suitability ratings and the primary limiting factors associated with the ratings. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the potential limitation. Information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
601: Aquic Dystricrypts, high moraines-----	40	Poor: Depth to saturated zone Rock fragment content Slope Hard to reclaim	0.00 0.00 0.00 0.98	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Typic Dystricrypts, high moraines-----	30	Poor: Rock fragment content Slope Hard to reclaim	0.00 0.00 0.95	Fair: Moderate frost action (check lower layers)	0.50
Histels, high moraines----	20	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.02 0.99	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.02
602: Audrey-----	35	Poor: Depth to saturated zone Rock fragment content Hard to reclaim	0.00 0.00 0.50	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Butchlake, gently sloping-----	30	Poor: Rock fragment content Hard to reclaim	0.00 0.00	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.74
Typic Aquiturbels -----	30	Poor: Depth to saturated zone Depth to permafrost	0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
603: Audrey-----	80	Poor: Depth to saturated zone Rock fragment content Hard to reclaim	0.00 0.00 0.50	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Typic Aquiturbels -----	15	Poor: Depth to saturated zone Depth to permafrost	0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
604: Babel-----	85	Poor: Depth to saturated zone Rock fragment content No permafrost depth limitation	0.00 0.00 0.16	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation Stone content	0.00 0.00 0.16 0.99

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
605: Babel-----	85	Poor: Depth to saturated zone Rock fragment content Slope No permafrost depth limitation	0.00 0.00 0.00 0.16	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation Stone content	0.00 0.00 0.16 0.99
Butchlake -----	15	Poor: Rock fragment content Slope Hard to reclaim	0.00 0.00 0.00	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.74
606: Babel-----	80	Poor: Slope Depth to saturated zone Rock fragment content No permafrost depth limitation	0.00 0.00 0.00 0.16	Poor: Depth to saturated zone High frost action (check lower layers) Slope No permafrost depth limitation Stone content	0.00 0.00 0.00 0.16 0.99
Butchlake -----	15	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers) Cobble content	0.00 0.50 0.74
607: Butchlake -----	90	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers) Cobble content	0.00 0.50 0.74
608: Butchlake -----	90	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers) Cobble content	0.00 0.50 0.74
609: Butchlake, moderately steep -----	50	Poor: Rock fragment content Slope Hard to reclaim	0.00 0.00 0.00	Fair: Moderate frost action (check lower layers) Slope Cobble content	0.50 0.50 0.74
Nomercy Lake -----	35	Poor: Rock fragment content Hard to reclaim Slope	0.00 0.12 0.84	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.99
Butchlake, very steep ----	5	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers) Cobble content	0.00 0.50 0.74
610: Butchlake, gently sloping -----	50	Poor: Rock fragment content Hard to reclaim	0.00 0.00	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.74
Southpaw -----	40	Poor: Rock fragment content	0.00	Fair: Moderate frost action (check lower layers)	0.50

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
611: Butchlake -----	60	Poor: Rock fragment content Hard to reclaim Slope	0.00 0.00 0.84	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.74
Southpaw -----	35	Poor: Rock fragment content Slope	0.00 0.84	Fair: Moderate frost action (check lower layers)	0.50
612: Butchlake, strongly sloping -----	80	Poor: Rock fragment content Hard to reclaim Slope	0.00 0.00 0.84	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.74
Southpaw -----	20	Poor: Rock fragment content	0.00	Fair: Moderate frost action (check lower layers)	0.50
613: Chena -----	95	Poor: Rock fragment content Too sandy	0.00 0.00	Good source	
614: Chena -----	87	Poor: Rock fragment content Too sandy	0.00 0.00	Good source	
615: Chetlake -----	80	Poor: Depth to saturated zone No permafrost depth limitation Rock fragment content Too acid	0.00 0.62 0.95 0.99	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.62
616: Donnelly -----	95	Poor: Rock fragment content Hard to reclaim	0.00 0.88	Fair: Moderate frost action (check lower layers)	0.50
617: Donnelly, very steep -----	85	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.88	Poor: Slope Moderate frost action (check lower layers)	0.00 0.50
618: Donnelly -----	65	Poor: Rock fragment content Hard to reclaim	0.00 0.88	Fair: Moderate frost action (check lower layers)	0.50
Nenana -----	35	Poor: Rock fragment content	0.00	Poor: High frost action (check lower layers)	0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
619: Gerstle-----	65	Poor: Depth to saturated zone	0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Moosehead-----	30	Poor: Depth to saturated zone Rock fragment content	0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
620: Gerstle-----	85	Poor: Depth to saturated zone	0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Tanana-----	15	Poor: Depth to saturated zone No permafrost depth limitation	0.00 0.14	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.14
621: Pits, gravel-----	100	Not rated		Not rated	
622: Histels, outwash plains-----	100	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.12 0.76	Poor: Depth to saturated zone High frost action(check lower layers) No permafrost depth limitation	0.00 0.00 0.12
623: Histels, outwash plains-----	45	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.12 0.76	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.12
Orthels, outwash plains-----	25	Poor: Depth to permafrost Depth to saturated zone Too acid Content of organic matter	0.00 0.00 0.50 0.92	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Turbels, outwash plains-----	25	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624: Histels, mountains-----	50	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Slope Too acid	0.00 0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.50
Orthels, mountains-----	20	Poor: Slope Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Slope Depth to permafrost	0.00 0.00 0.00 0.00
Typic Dystrogelepts, mountains-----	20	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.00	Poor: Slope Stone content Moderate frost action (check lower layers) Cobble content	0.00 0.17 0.50 0.73
625: Histels, high moraines-----	45	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.02 0.99	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.02
Turbels, high moraines-----	45	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
626: Histels, high moraines-----	60	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.02 0.99	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.02
Typic Cryaquepts, high moraines-----	15	Poor: Depth to saturated zone Rock fragment content	0.00 0.02	Poor: Depth to saturated zone High frost action (check lower layers)	0.00 0.00
Typic Dystrocryepts, high moraines-----	15	Poor: Rock fragment content Slope Hard to reclaim	0.00 0.00 0.95	Fair: Moderate frost action (check lower layers)	0.50

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
627: Histels, river valleys-----	30	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Histoturbels, river valleys-----	30	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Typic Historthels, river valleys-----	20	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Typic Aquiturbels, river valleys-----	10	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
628: Humic Dystrocryepts, high moraines-----	50	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.95	Poor: Slope	0.00
Aquic Umbrorthels, high moraines-----	40	Poor: Slope Depth to saturated zone Rock fragment content No permafrost depth limitation Too acid	0.00 0.00 0.00 0.32 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Slope No permafrost depth limitation	0.00 0.00 0.00 0.32
629: Jarvis -----	85	Poor: Depth to saturated zone Hard to reclaim	0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
630: Jarvis -----	85	Poor: Depth to saturated zone Hard to reclaim	0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
631: Jarvis -----	55	Poor: Depth to saturated zone Hard to reclaim	0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Chena -----	40	Poor: Rock fragment content Too sandy	0.00 0.00	Good source	

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
632: Chena -----	50	Poor: Rock fragment content Too sandy	0.00 0.00	Good source	
Jarvis -----	45	Poor: Depth to saturated zone Hard to reclaim	0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
633: Jarvis -----	55	Poor: Depth to saturated zone Hard to reclaim	0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Salchaket -----	35	Poor: Depth to saturated zone	0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
634: Lithic Cryofolists, mountains-----	25	Poor: Depth to saturated zone Content of organic matter Depth to bedrock Slope Too acid	0.00 0.00 0.00 0.00 0.76	Poor: Depth to bedrock Depth to saturated zone Slope Moderate frost action (check lower layers)	0.00 0.00 0.00 0.50
Typic Cryorthents, mountains-----	25	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.76	Poor: Slope Moderate frost action (check lower layers)	0.00 0.50
Typic Dystrogelepts, mountains-----	20	Poor: Rock fragment content Slope Hard to reclaim	0.00 0.00 0.00	Fair: Stone content Moderate frost action (check lower layers) Cobble content	0.17 0.50 0.73
Typic Histoturbels, mountains-----	20	Poor: Depth to saturated zone Depth to permafrost Slope Content of organic matter Too acid	0.00 0.00 0.00 0.92 0.95	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.50
635: McKinley, moderately steep -----	90	Poor: Rock fragment content Slope Depth to bedrock	0.00 0.00 0.52	Poor: Depth to bedrock Stone content Moderate frost action (check lower layers) Cobble content Slope	0.00 0.00 0.50 0.94 0.98

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
636: McKinley, very steep -----	85	Poor: Slope Rock fragment content Depth to bedrock	 0.00 0.00 0.52	Poor: Depth to bedrock Slope Stone content Moderate frost action (check lower layers) Cobble content	 0.00 0.00 0.00 0.50 0.94
637: Moosehead-----	90	Poor: Depth to saturated zone Rock fragment content	 0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	 0.00 0.50
638: Mosquito -----	80	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation	 0.00 0.00 0.08	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	 0.00 0.00 0.08
639: Nenana-----	85	Poor: Rock fragment content	 0.00	Poor: High frost action (check lower layers)	 0.00
640: Nenana-----	65	Poor: Rock fragment content Slope	 0.00 0.84	Poor: High frost action (check lower layers)	 0.00
Donnelly-----	15	Poor: Rock fragment content Slope Hard to reclaim	 0.00 0.84 0.88	Fair: Moderate frost action (check lower layers)	 0.50
641: Nenana-----	75	Poor: Rock fragment content	 0.00	Poor: High frost action (check lower layers)	 0.00
Donnelly-----	15	Poor: Rock fragment content Hard to reclaim	 0.00 0.88	Fair: Moderate frost action (check lower layers)	 0.50
642: Nenana-----	60	Poor: Rock fragment content	 0.00	Poor: High frost action (check lower layers)	 0.00
Urban land-----	30	Not rated		Not rated	
643: Ninchuun-----	80	Poor: Depth to saturated zone No permafrost depth limitation	 0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	 0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
644: Ninchuun-----	50	Poor: Depth to saturated zone Rock fragment content	0.00 0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers) No permafrost depth limitation	0.00 0.50 0.00
Audrey-----	40	Poor: Depth to saturated zone Rock fragment content Hard to reclaim	0.00 0.00 0.50	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
645: Ninchuun-----	75	Poor: Depth to saturated zone Rock fragment content Slope	0.00 0.00 0.84	Poor: Depth to saturated zone Moderate frost action (check lower layers) No permafrost depth limitation	0.00 0.50 0.00
Audrey-----	15	Poor: Depth to saturated zone Rock fragment content Hard to reclaim Slope	0.00 0.00 0.50 0.84	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
646: Nomeracy Lake-----	35	Poor: Rock fragment content Hard to reclaim Slope	0.00 0.12 0.84	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.99
Butchlake-----	25	Poor: Rock fragment content Hard to reclaim Slope	0.00 0.00 0.84	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.74
Water-----	20	Not rated		Not rated	
647: Riverwash-----	100	Not rated		Not rated	
648: Salchaket-----	90	Poor: Depth to saturated zone	0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
649: Salchaket-----	90	Poor: Depth to saturated zone	0.00	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
650: Tanacross-----	85	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.32	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
651: Tanana -----	85	Poor: Depth to saturated zone No permafrost depth limitation	0.00 0.14	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.14
652: Terric Fibristels, river valleys-----	43	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Ruptic-Histic Aquiturbels, river valleys -----	42	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Typic Aquiturbels, river valleys-----	15	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Typic Histoturbels, river valleys-----	0	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
653: Terric Fibristels, moraines -----	65	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.26 0.59	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.26
Typic Histoturbels, moraines -----	25	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
654: Terric Hemistels-----	95	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation	0.00 0.00 0.08	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.08

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
655: Terric Hemistels-----	55	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation	0.00 0.00 0.08	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.08
Typic Aquiturbels-----	20	Poor: Depth to saturated zone Depth to permafrost	0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
656: Tetlin, moderately steep-----	95	Poor: Depth to saturated zone Slope No permafrost depth limitation	0.00 0.00 0.08	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation Slope	0.00 0.00 0.08 0.98
657: Tetlin-----	100	Poor: Depth to saturated zone No permafrost depth limitation Slope	0.00 0.08 0.84	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.08
658: Tetlin-----	100	Poor: Depth to saturated zone Slope No permafrost depth limitation	0.00 0.00 0.08	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation Slope	0.00 0.00 0.08 0.50
659: Glacier-----	100	Not rated		Not rated	
660: Turbels-----	85	Poor: Depth to saturated zone Rock fragment content No permafrost depth limitation Slope	0.00 0.00 0.54 0.96	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.54
Tetlin-----	15	Poor: Depth to saturated zone No permafrost depth limitation Slope	0.00 0.08 0.96	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.08
661: Turbels, moderately steep-----	80	Poor: Depth to saturated zone Slope Rock fragment content No permafrost depth limitation	0.00 0.00 0.00 0.54	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation Slope	0.00 0.00 0.54 0.98

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
662: Turbels, steep -----	85	Poor: Slope Depth to saturated zone Rock fragment content No permafrost depth limitation	 0.00 0.00 0.00 0.54	Poor: Depth to saturated zone High frost action (check lower layers) Slope No permafrost depth limitation	 0.00 0.00 0.00 0.54
663: Turbels, very steep-----	85	Poor: Slope Depth to saturated zone Rock fragment content No permafrost depth limitation	 0.00 0.00 0.00 0.54	Poor: Depth to saturated zone Slope High frost action (check lower layers) No permafrost depth limitation	 0.00 0.00 0.00 0.54
664: Turbels, mountains-----	70	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	 0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	 0.00 0.00 0.00
Aquic Dystrocryepts, mountains-----	15	Poor: Depth to saturated zone Rock fragment content Slope	 0.00 0.00 0.37	Poor: Depth to saturated zone Moderate frost action (check lower layers)	 0.00 0.50
Water -----	10	Not rated		Not rated	
665: Turbels, mountains-----	55	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid Slope	 0.00 0.00 0.00 0.59 0.63	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	 0.00 0.00 0.00
Typic Dystrogelepts, mountains-----	20	Poor: Rock fragment content Hard to reclaim	 0.00 0.00	Fair: Stone content Moderate frost action (check lower layers) Cobble content	 0.17 0.50 0.73
Ruptic-Histic Aquiturbels, mountains-----	15	Poor: Depth to saturated zone Rock fragment content Slope No permafrost depth limitation Too acid	 0.00 0.00 0.00 0.54 0.99	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	 0.00 0.00 0.54
666: Typic Aquiturbels -----	90	Poor: Depth to saturated zone Depth to permafrost	 0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	 0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
667: Typic Aquiturbels -----	90	Poor: Depth to saturated zone Depth to permafrost Slope	0.00 0.00 0.84	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
668: Typic Aquiturbels, gently sloping -----	95	Poor: Depth to saturated zone Depth to permafrost	0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
669: Typic Aquiturbels -----	40	Poor: Depth to saturated zone Depth to permafrost Slope	0.00 0.00 0.84	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Butchlake -----	35	Poor: Rock fragment content Hard to reclaim Slope	0.00 0.00 0.84	Fair: Moderate frost action (check lower layers) Cobble content	0.50 0.74
Southpaw -----	20	Poor: Rock fragment content Slope	0.00 0.84	Fair: Moderate frost action (check lower layers)	0.50
670: Typic Aquiturbels -----	80	Poor: Depth to saturated zone Depth to permafrost	0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Terric Hemistels -----	20	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation	0.00 0.00 0.08	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.08
671: Typic Aquiturbels	80	Poor: Depth to saturated zone Depth to permafrost Slope	0.00 0.00 0.84	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Terric Hemistels -----	15	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation	0.00 0.00 0.08	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.08

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
672: Typic Aquiturbels, ridges -----	80	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystrocryepts, ridges -----	15	Poor: Rock fragment content Too sandy Slope	0.00 0.00 0.84	Fair: Moderate frost action (check lower layers)	0.50
673: Typic Aquiturbels, moraines -----	45	Poor: Depth to saturated zone Depth to permafrost	0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystrocryepts, moraines -----	30	Poor: Rock fragment content	0.00	Fair: Moderate frost action (check lower layers)	0.50
Typic Haploturbels, moraines -----	15	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone Depth to permafrost Moderate frost action (check lower layers)	0.00 0.00 0.50
674: Typic Aquiturbels, river valleys-----	50	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Typic Histoturbels, river valleys-----	40	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
675: Typic Aquorthels, mountains-----	35	Poor: Depth to saturated zone Depth to permafrost Slope	0.00 0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.50
Typic Histoturbels, mountains-----	35	Poor: Slope Depth to saturated zone Depth to permafrost Content of organic matter Too acid	0.00 0.00 0.00 0.92 0.95	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.00
676: Typic Cryaquepts-----	75	Poor: Depth to saturated zone Rock fragment content	0.00 0.00	Poor: Depth to saturated zone Low strength High frost action (check lower layers)	0.00 0.00 0.00
677: Typic Cryofluvents, river valleys-----	100	Poor: Rock fragment content	0.00	Good source	
678: Typic Cryofluvents, river valleys-----	40	Poor: Rock fragment content	0.00	Good source	
Histels, river valleys-----	30	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Haploturbels, river valleys-----	30	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Slope Too acid	0.00 0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
679: Typic Cryofluvents, river valleys-----	45	Poor: Rock fragment content	0.00	Good source	
Typic Dystrocryepts, river valleys-----	45	Poor: Rock fragment content Too sandy Hard to reclaim	0.00 0.00 0.98	Fair: Moderate frost action (check lower layers)	0.50

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
680: Typic Cryofluvents, river valleys-----	45	Poor: Rock fragment content	0.00	Good source	
Typic Dystrocryepts, river valleys-----	45	Poor: Rock fragment content Too sandy Hard to reclaim	0.00 0.00 0.98	Fair: Moderate frost action (check lower layers)	0.50
Typic Histoturbels, river valleys-----	10	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
681: Typic Dystrocryepts, ridges-----	55	Poor: Slope Rock fragment content Too sandy	0.00 0.00 0.00	Fair: Moderate frost action (check lower layers) Slope	0.50 0.50
Ruptic-Histic Aquiturbels, ridges-----	35	Poor: Depth to saturated zone No permafrost depth limitation Slope	0.00 0.01 0.84	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.01
682: Typic Dystrocryepts, high moraines-----	45	Poor: Rock fragment content Slope Hard to reclaim	0.00 0.00 0.95	Fair: Moderate frost action (check lower layers)	0.50
Turbels, high moraines----	25	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid Slope	0.00 0.00 0.00 0.59 0.84	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Water-----	20	Not rated		Not rated	
683: Typic Dystrocryepts, moraines-----	55	Poor: Rock fragment content Slope	0.00 0.00	Fair: Moderate frost action (check lower layers) Slope	0.50 0.50
Turbels, moraines-----	20	Poor: Depth to saturated zone Depth to permafrost Slope	0.00 0.00 0.84	Poor: Depth to saturated zone High frost action(check lower layers) Depth to permafrost	0.00 0.00 0.00
Water-----	15	Not rated		Not rated	

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
684: Typic Dystricrypts, outwash plains-----	70	Good source		Fair: Moderate frost action (check lower layers)	0.50
Typic Aquiturbels, outwash plains-----	15	Poor: Depth to saturated zone No permafrost depth limitation Too acid	0.00 0.02 0.98	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.02
Typic Haplothels, outwash plains-----	15	Poor: Depth to saturated zone No permafrost depth limitation Too acid	0.00 0.32 0.92	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.32
685: Typic Dystricrypts, high moraines-----	30	Poor: Rock fragment content Hard to reclaim	0.00 0.95	Fair: Moderate frost action (check lower layers)	0.50
Typic Cryaquepts, high moraines-----	25	Poor: Depth to saturated zone Rock fragment content	0.00 0.02	Poor: Depth to saturated zone High frost action (check lower layers)	0.00 0.00
Aquic Dystricrypts, high moraines-----	15	Poor: Depth to saturated zone Rock fragment content Slope Hard to reclaim	0.00 0.00 0.84 0.98	Poor: Depth to saturated zone Moderate frost action (check lower layers)	0.00 0.50
Ruptic Histoturbels, high moraines-----	15	Poor: Slope Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.00
686: Typic Dystricrypts, moraines-----	35	Poor: Rock fragment content	0.00	Fair: Moderate frost action (check lower layers)	0.50
Typic Cryaquepts, moraines-----	30	Poor: Depth to saturated zone	0.00	Poor: Depth to saturated zone High frost action (check lower layers)	0.00 0.00
Typic Histoturbels, moraines-----	25	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
687: Typic Dystrocryepts, ridges -----	45	Poor: Rock fragment content Slope Too sandy	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers)	0.00 0.50
Typic Haplocryands, ridges -----	40	Poor: Slope	0.00	Poor: High frost action(check lower layers) Slope	0.00 0.00
Typic Histoturbels, ridges -----	15	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid Slope	0.00 0.00 0.00 0.59 0.84	Poor: Depth to saturated zone High frost action(check lower layers) Depth to permafrost	0.00 0.00 0.00
688: Typic Dystrocryepts, moraines -----	40	Poor: Rock fragment content	0.00	Fair: Moderate frost action (check lower layers)	0.50
Typic Haploturbels, moraines -----	30	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone Depth to permafrost Moderate frost action (check lower layers)	0.00 0.00 0.50
Typic Aquiturbels, moraines -----	15	Poor: Depth to saturated zone Depth to permafrost	0.00 0.00	Poor: Depth to saturated zone High frost action(check lower layers) Depth to permafrost	0.00 0.00 0.00
689: Typic Dystrocryepts, moraines -----	45	Poor: Rock fragment content	0.00	Fair: Moderate frost action (check lower layers)	0.50
Typic Histoturbels, moraines -----	45	Poor: Depth to saturated zone Depth to saturated zone Depth to permafrost Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
690: Typic Dystricrypts, ridges -----	65	Poor: Slope Rock fragment content Too sandy	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers)	0.00 0.50
Typic Histoturbels, ridges -----	35	Poor: Depth to saturated zone Depth to saturated zone Depth to permafrost Slope Too acid	0.00 0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.00
691: Typic Dystricrypts, high moraines-----	35	Poor: Rock fragment content Hard to reclaim	0.00 0.95	Fair: Moderate frost action (check lower layers)	0.50
Typic Histoturbels, high moraines-----	35	Poor: Depth to saturated zone Depth to saturated zone Depth to permafrost Too acid Slope	0.00 0.00 0.00 0.59 0.84	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Folists, high moraines ----	15	Poor: Depth to saturated zone Slope	0.00 0.00	Poor: Depth to saturated zone Stone content	0.00 0.00
692: Typic Dystricrypts, ridges -----	60	Poor: Rock fragment content Too sandy Slope	0.00 0.00 0.37	Fair: Moderate frost action (check lower layers)	0.50
Typic Histoturbels, ridges -----	25	Poor: Depth to saturated zone Depth to saturated zone Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Aquiturbels, ridges -----	15	Poor: Depth to saturated zone Depth to saturated zone Depth to permafrost Slope Too acid	0.00 0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
693: Typic Dystrocryepts, ridges -----	65	Poor: Slope Rock fragment content Too sandy	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers)	0.00 0.50
Typic Histoturbels, ridges -----	20	Poor: Slope Depth to saturated zone Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone Slope High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00 0.00
Typic Cryofluvents, ridges -----	15	Poor: Slope	0.00	Poor: High frost action(check lower layers) Slope	0.00 0.00
694: Typic Dystrogelepts, mountains-----	55	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.00	Poor: Slope Stone content Moderate frost action (check lower layers) Cobble content	0.00 0.17 0.50 0.73
Aquic Dystrocryepts, mountains-----	20	Poor: Depth to saturated zone Rock fragment content Slope	0.00 0.00 0.00	Poor: Depth to saturated zone Slope Moderate frost action (check lower layers)	0.00 0.00 0.50
Orthels, mountains -----	15	Poor: Depth to saturated zone Depth to saturated zone Depth to permafrost Too acid	0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
695: Typic Dystrogelepts, mountains-----	30	Poor: Rock fragment content Hard to reclaim	0.00 0.00	Fair: Stone content Moderate frost action (check lower layers) Cobble content	0.17 0.50 0.73
Aquic Dystrocryepts, mountains-----	25	Poor: Depth to saturated zone Rock fragment content Slope	0.00 0.00 0.00	Poor: Depth to saturated zone Slope Moderate frost action (check lower layers)	0.00 0.00 0.50
Typic Haplothels, mountains-----	25	Poor: Slope Depth to permafrost Depth to saturated zone Rock fragment content	0.00 0.00 0.00 0.00	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers) Slope	0.00 0.00 0.00 0.00

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
695: Ruptic Histoturbels, mountains-----	20	Poor: Slope Depth to saturated zone Content of organic matter Depth to permafrost Too acid	 0.00 0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	 0.00 0.00 0.00 0.50
696: Typic Dystrogelepts, mountains-----	85	Poor: Rock fragment content Hard to reclaim Slope	 0.00 0.00 0.84	Fair: Stone content Moderate frost action (check lower layers) Cobble content	 0.17 0.50 0.73
Lithic Cryofolists, mountains-----	15	Poor: Depth to saturated zone Content of organic matter Depth to bedrock Slope Too acid	 0.00 0.00 0.00 0.00 0.76	Poor: Depth to bedrock Depth to saturated zone Slope Moderate frost action (check lower layers)	 0.00 0.00 0.00 0.50
697: Typic Dystrogelepts, mountains-----	40	Poor: Slope Rock fragment content Hard to reclaim	 0.00 0.00 0.00	Poor: Slope Stone content Moderate frost action (check lower layers) Cobble content	 0.00 0.17 0.50 0.73
Typic Cryaquepts, mountains-----	30	Poor: Depth to saturated zone Rock fragment content Slope Not hard to reclaim	 0.00 0.00 0.84 0.99	Poor: Depth to saturated zone High frost action (check lower layers)	 0.00 0.00
Humic Dystrocryepts, mountains-----	20	Poor: Rock fragment content Hard to reclaim Too acid	 0.00 0.50 0.99	Fair: Moderate frost action (check lower layers) Stone content	 0.50 0.84
698: Typic Haplorthels, high moraines-----	40	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid Slope	 0.00 0.00 0.00 0.59 0.84	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	 0.00 0.00 0.00
Typic Aquiturbels, high moraines-----	30	Poor: Depth to saturated zone Slope No permafrost depth limitation	 0.00 0.00 0.03	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation Slope	 0.00 0.00 0.03 0.50

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
698: Ruptic Histoturbels, high moraines-----	20	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Slope Too acid	0.00 0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
699: Typic Haploturbels, mountains-----	35	Poor: Slope Depth to saturated zone Depth to permafrost Rock fragment content	0.00 0.00 0.00 0.95	Poor: Depth to saturated zone High frost action(check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.00
Typic Cryaquepts, mountains-----	25	Poor: Slope Depth to saturated zone Rock fragment content Not hard to reclaim	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action(check lower layers) Slope	0.00 0.00 0.50
Typic Dystrogelepts, mountains-----	25	Poor: Rock fragment content Slope Hard to reclaim	0.00 0.00 0.00	Fair: Stone content Moderate frost action (check lower layers) Slope Cobble content	0.17 0.50 0.50 0.73
700: Typic Haploturbels, outwash plains-----	40	Poor: Depth to saturated zone No permafrost depth limitation Too acid Content of organic matter	0.00 0.00 0.88 0.92	Poor: Depth to saturated zone High frost action(check lower layers) No permafrost depth limitation	0.00 0.00 0.00
Typic Histoturbels, outwash plains-----	35	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Histels, outwash plains-----	25	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.12 0.76	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.12

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
701: Typic Historthels, outwash plains-----	40	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone Depth to permafrost High frost action(check lower layers)	0.00 0.00 0.00
Typic Histoturbels, outwash plains-----	35	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Terric Fibristels, outwash plains-----	15	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.12 0.76	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.12
702: Typic Histoturbels, river valleys-----	75	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
703: Typic Histoturbels, high moraines-----	65	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Glacic Aquiturbels, high moraines-----	20	Poor: Depth to permafrost Depth to saturated zone	0.00 0.00	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Histels, high moraines-----	15	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.02 0.99	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.02

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
704: Typic Histoturbels, mountains-----	50	Poor: Depth to saturated zone Depth to permafrost Content of organic matter Too acid	0.00 0.00 0.92 0.95	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Histels, mountains-----	25	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Slope Too acid	0.00 0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost Slope	0.00 0.00 0.00 0.50
Typic Dystrogelepts, mountains-----	25	Poor: Slope Rock fragment content Hard to reclaim	0.00 0.00 0.00	Poor: Slope Stone content Moderate frost action (check lower layers) Cobble content	0.00 0.17 0.50 0.73
705: Typic Histoturbels, ridges-----	50	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Aquiturbels, ridges-----	25	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Teric Fibristsels, ridges-----	20	Poor: Depth to saturated zone Content of organic matter Depth to permafrost	0.00 0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
706: Typic Histoturbels, river valleys-----	80	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
Typic Dystrocryepts, river valleys-----	20	Poor: Rock fragment content Too sandy Hard to reclaim	0.00 0.00 0.98	Fair: Moderate frost action (check lower layers)	0.50

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
707: Typic Histoturbels, hills -----	65	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystrocryepts, hills -----	25	Poor: Slope Depth to bedrock	0.00 0.30	Poor: Depth to bedrock Slope Moderate frost action (check lower layers)	0.00 0.00 0.50
708: Typic Histoturbels, ridges -----	80	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystrocryepts, ridges -----	20	Poor: Rock fragment content Too sandy	0.00 0.00	Fair: Moderate frost action (check lower layers)	0.50
709: Typic Histoturbels, ridges -----	60	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.59	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystrocryepts, ridges -----	25	Poor: Rock fragment content Slope Too sandy	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers)	0.00 0.50
Terric Fibristels, ridges -----	15	Poor: Depth to saturated zone Content of organic matter Depth to permafrost	0.00 0.00 0.00	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
710: Typic Histoturbels, ridges -----	50	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid Slope	0.00 0.00 0.00 0.59 0.84	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystrocryepts, ridges -----	20	Poor: Slope Rock fragment content Too sandy	0.00 0.00 0.00	Poor: Slope Moderate frost action (check lower layers)	0.00 0.50

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
710: Typic Historthels, ridges -----	20	Poor: Depth to permafrost Depth to saturated zone Content of organic matter Too acid	0.00 0.00 0.00 0.50	Poor: Depth to saturated zone Depth to permafrost High frost action (check lower layers)	0.00 0.00 0.00
711: Typic Histoturbels, mountains -----	60	Poor: Depth to saturated zone Depth to permafrost Content of organic matter Too acid	0.00 0.00 0.92 0.95	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystroglepts, mountains -----	20	Poor: Rock fragment content Hard to reclaim Slope	0.00 0.00 0.16	Fair: Stone content Moderate frost action (check lower layers) Cobble content	0.17 0.50 0.73
712: Typic Histoturbels, moraines -----	50	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystrocryepts, moraines -----	30	Poor: Rock fragment content	0.00	Fair: Moderate frost action (check lower layers)	0.50
Water -----	15	Not rated		Not rated	
713: Typic Histoturbels, outwash plains -----	40	Poor: Depth to saturated zone Content of organic matter Depth to permafrost Too acid	0.00 0.00 0.00 0.76	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Haplorthels, outwash plains -----	35	Poor: Depth to saturated zone No permafrost depth limitation Too acid	0.00 0.32 0.92	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.32
Terric Hemistels, outwash plains -----	25	Poor: Depth to saturated zone Content of organic matter No permafrost depth limitation Too acid	0.00 0.00 0.12 0.76	Poor: Depth to saturated zone High frost action (check lower layers) No permafrost depth limitation	0.00 0.00 0.12

Table 15. Construction Materials: Topsoil and Roadfill—Continued

Map symbol and soil name	Pct. of map unit	Potential source of topsoil (Alaska criteria)		Potential source of roadfill (Alaska criteria)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
714: Typic Histoturbels, mountains-----	40	Poor: Depth to saturated zone Depth to permafrost Content of organic matter Too acid	0.00 0.00 0.92 0.95	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Haploturbels, mountains-----	20	Poor: Depth to saturated zone Depth to permafrost Slope Rock fragment content	0.00 0.00 0.00 0.95	Poor: Depth to saturated zone High frost action (check lower layers) Depth to permafrost	0.00 0.00 0.00
Typic Dystroglepts, mountains-----	15	Poor: Rock fragment content Hard to reclaim	0.00 0.00	Fair: Stone content Moderate frost action (check lower layers) Cobble content	0.17 0.50 0.73
715: Volkmar -----	90	Poor: Depth to saturated zone Not hard to reclaim	0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers)	0.00 0.00
716: Volkmar -----	80	Poor: Depth to saturated zone Not hard to reclaim	0.00 0.99	Poor: Depth to saturated zone High frost action (check lower layers)	0.00 0.00
Nenana-----	15	Poor: Rock fragment content	0.00	Poor: High frost action (check lower layers)	0.00
717: Water -----	100	Not rated		Not rated	

Table 16. Hydric Soils List

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
601:						
Aquic Dystrocryepts, high moraines (40%)-----	No	depressions on moraines	---	---	---	---
Typic Dystrocryepts, high moraines (30%)-----	No	moraines	---	---	---	---
Histels, high moraines (20%)-----	Yes	depressions on moraines	1	Yes	No	No
Water (10%)-----	Unranked	lakes	---	---	---	---
602:						
Audrey (35%)-----	No	hills on moraines	---	---	---	---
Butchlake, gently sloping (30%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (30%)-----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
Butchlake, steep (5%)-----	No	hills on moraines	---	---	---	---
603:						
Audrey (80%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (15%)-----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Butchlake (5%)-----	No	hills on moraines	---	---	---	---
604:						
Babel (85%)-----	No	hills on moraines	---	---	---	---
Butchlake (10%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (5%)-----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
605:						
Babel (85%)-----	No	hills on moraines	---	---	---	---
Butchlake (15%)-----	No	hills on moraines	---	---	---	---
606:						
Babel (80%)-----	No	hills on moraines	---	---	---	---
Butchlake (15%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (5%)-----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
607:						
Butchlake (90%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (10%)-----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
608: Butchlake (90%) -----	No	hills on moraines	---	---	---	---
Typic Aquiturbels, gently sloping (5%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Typic Aquiturbels, moderately steep (5%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
609: Butchlake, moderately steep (50%) -----	No	hills on moraines	---	---	---	---
Nomercy Lake (35%) -----	No	hills on moraines	---	---	---	---
Butchlake, very steep (5%) -----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (5%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Typic Cryaquepts (5%) -----	Yes	depressions on moraines, depressions on pitted outwash plains	2B3,3	Yes	No	Yes
610: Butchlake, gently sloping (50%) -----	No	hills on moraines	---	---	---	---
Southpaw (40%) -----	No	hills on moraines	---	---	---	---
Butchlake, moderately steep (5%) -----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (5%) -----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
611: Butchlake (60%) -----	No	hills on moraines	---	---	---	---
Southpaw (35%) -----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (5%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
612: Butchlake, strongly sloping (80%) -----	No	hills on moraines	---	---	---	---
Southpaw (20%) -----	No	hills on moraines	---	---	---	---
Butchlake, steep (0%) -----	No	hills on moraines	---	---	---	---
613: Chena (95%) -----	No	stream terraces	---	---	---	---
Jarvis (5%) -----	No	flood plains	---	---	---	---
614: Chena (87%) -----	No	stream terraces	---	---	---	---
Jarvis (8%) -----	No	flood plains	---	---	---	---
Riverwash (5%) -----	Unranked	flood plains	---	---	---	---

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
615: Chetlake (80%)-----	No	hummocks on moraines	---	---	---	---
Typic Aquiturbels (10%) -----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
Babel (5%) -----	No	hills on moraines	---	---	---	---
Teric Hemistels (5%) -----	Yes	depressions on moraines	1,3	Yes	No	Yes
616: Donnelly (95%)-----	No	stream terraces	---	---	---	---
Nenana (5%)-----	No	stream terraces	---	---	---	---
617: Donnelly, very steep (85%) -----	No	escarpments on stream terraces	---	---	---	---
Donnelly, steep (15%)-----	No	drainageways on escarpments on stream terraces	---	---	---	---
618: Donnelly (65%)-----	No	stream terraces	---	---	---	---
Nenana (35%)-----	No	stream terraces	---	---	---	---
Volkmar (0%)-----	No	stream terraces	---	---	---	---
619: Gerstle (65%)-----	No	stream terraces	---	---	---	---
Moosehead (30%)-----	No	stream terraces	---	---	---	---
Tanana (5%)-----	Yes	terraces	2B3	Yes	No	No
Jarvis (0%) -----	No	flood plains	---	---	---	---
620: Gerstle (85%)-----	No	stream terraces	---	---	---	---
Tanana (15%) -----	Yes	terraces	2B3	Yes	No	No
621: Pits, gravel (100%)-----	Unranked	gravel pits	---	---	---	---
622: Histels, outwash plains (100%)-----	Yes	outwash plains	1	Yes	No	No
623: Histels, outwash plains (45%)-----	Yes	outwash plains	1	Yes	No	No
Orthels, outwash plains (25%) -----	No	outwash plains	---	---	---	---
Turbels, outwash plains (25%)-----	Yes	outwash plains	2B3	Yes	No	No
Typic Dystrocryepts, outwash plains (5%)-----	No	outwash plains	---	---	---	---

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
624:						
Histels, mountains (50%)-----	Yes	mountains	1	Yes	No	No
Orthels, mountains (20%)-----	No	mountains	---	---	---	---
Typic Dystrogelepts, mountains (20%)-----	No	mountains	---	---	---	---
Typic Histoturbels, mountains (10%)-----	Yes	mountains	2B3	Yes	No	No
625:						
Histels, high moraines (45%)-----	Yes	moraines, till plains	1	Yes	No	No
Turbels, high moraines (45%)-----	Yes	moraines	2B3	Yes	No	No
Orthels, high moraines (10%)-----	No	moraines	---	---	---	---
626:						
Histels, high moraines (60%)-----	Yes	moraines, till plains	1	Yes	No	No
Typic Cryaquepts, high moraines (15%)-----	Yes	moraines	2B3	Yes	No	No
Typic Dystrocryepts, high moraines (15%)-----	No	moraines	---	---	---	---
Typic Haplorthels, high moraines (10%)-----	No	moraines	---	---	---	---
627:						
Histels, river valleys (30%)-----	Yes	terraces	1	Yes	No	No
Typic Histoturbels, river valleys (30%)-----	Yes	terraces	2B3	Yes	No	No
Typic Historthels, river valleys (20%)-----	Yes	alluvial fans, stream terraces	2B3	Yes	No	No
Typic Aquiturbels, river valleys (10%)-----	Yes	outwash plains	2B3	Yes	No	No
Typic Cryofluvents, river valleys (5%)-----	No	terraces	---	---	---	---
Typic Dystrocryepts, river valleys (5%)-----	No	outwash plains	---	---	---	---
628:						
Humic Dystrocryepts, high moraines (50%)-----	No	moraines	---	---	---	---
Aquic Umbrorthels, high moraines (40%)-----	Yes	moraines	2B3	Yes	No	No
Typic Dystrocryepts, high moraines (10%)-----	No	moraines	---	---	---	---
629:						
Jarvis (85%)-----	No	flood plains	---	---	---	---
Salchaket (10%)-----	No	flood plains	---	---	---	---
Chena (5%)-----	No	stream terraces	---	---	---	---
Tanana (0%)-----	Yes	terraces	2B3	Yes	No	No
630:						
Jarvis (85%)-----	No	flood plains	---	---	---	---
Riverwash (10%)-----	Unranked	flood plains	---	---	---	---
Salchaket (5%)-----	No	flood plains	---	---	---	---

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
631: Jarvis (55%)-----	No	flood plains	---	---	---	---
Chena (40%)-----	No	stream terraces	---	---	---	---
Salchaket (5%)-----	No	flood plains	---	---	---	---
Tanana (0%)-----	Yes	terraces	2B3	Yes	No	No
632: Chena (50%)-----	No	stream terraces	---	---	---	---
Jarvis (45%)-----	No	flood plains	---	---	---	---
Riverwash (5%)-----	Unranked	flood plains	---	---	---	---
633: Jarvis (55%)-----	No	flood plains	---	---	---	---
Salchaket (35%)-----	No	flood plains	---	---	---	---
Chena (5%)-----	No	stream terraces	---	---	---	---
Tanana (5%)-----	Yes	terraces	2B3	Yes	No	No
634: Lithic Cryofolists, mountains (25%)-----	No	mountains	---	---	---	---
Typic Cryorthents, mountains (25%)-----	No	mountains	---	---	---	---
Typic Dystrogelepts, mountains (20%)-----	No	mountains	---	---	---	---
Typic Histoturbels, mountains (20%)-----	Yes	mountains	2B3	Yes	No	No
Rock outcrop and Rubble land (10%)-----	Unranked	mountains	---	---	---	---
635: McKinley, moderately steep (90%)-----	No	hills	---	---	---	---
McKinley, steep (10%)-----	No	hills	---	---	---	---
636: McKinley, very steep (85%)-----	No	hills	---	---	---	---
Typic Eutrocryepts (10%)-----	No	hills	---	---	---	---
McKinley, steep (5%)-----	No	hills	---	---	---	---
637: Moosehead (90%)-----	No	stream terraces	---	---	---	---
Gerstle (10%)-----	No	stream terraces	---	---	---	---
638: Mosquito (80%)-----	Yes	depressions on alluvial flats	2B3,3	Yes	No	Yes
Tanana (10%)-----	Yes	terraces	2B3	Yes	No	No
Terric Hemistels (10%)-----	Yes	depressions on moraines	1,3	Yes	No	Yes

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
639: Nenana (85%)-----	No	stream terraces	---	---	---	---
Donnelly (10%)-----	No	stream terraces	---	---	---	---
Volkmar (5%)-----	No	stream terraces	---	---	---	---
640: Nenana (65%)-----	No	stream terraces	---	---	---	---
Donnelly (15%)-----	No	stream terraces	---	---	---	---
Typic Aquiturbels (10%)-----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Volkmar (5%)-----	No	stream terraces	---	---	---	---
Water (5%)-----	Unranked	lakes	---	---	---	---
641: Nenana (75%)-----	No	stream terraces	---	---	---	---
Donnelly (15%)-----	No	stream terraces	---	---	---	---
Volkmar (10%)-----	No	stream terraces	---	---	---	---
642: Nenana (60%)-----	No	stream terraces	---	---	---	---
Urban land (30%)-----	Unranked	NO DATA	---	---	---	---
Typic Cryorthents (10%)-----	No	terraces, flood plains	---	---	---	---
643: Ninchuun (80%)-----	Yes	moraines	2B3	Yes	No	No
Audrey (10%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (10%)-----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
Ninchuun, steep (0%)-----	Yes	moraines	2B3	Yes	No	No
Typic Cryaquepts (0%)-----	Yes	depressions on moraines, depressions on pitted outwash plains	2B3,3	Yes	No	Yes
644: Ninchuun (50%)-----	Yes	moraines	2B3	Yes	No	No
Audrey (40%)-----	No	hills on moraines	---	---	---	---
Southpaw (5%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (5%)-----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
645: Ninchuun (75%)-----	Yes	moraines	2B3	Yes	No	No
Audrey (15%)-----	No	hills on moraines	---	---	---	---
Typic Aquiturbels (10%)-----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
646: Nomercy Lake (35%)-----	No	hills on moraines	---	---	---	---
Butchlake (25%)-----	No	hills on moraines	---	---	---	---
Water (20%)-----	Unranked	lakes	---	---	---	---
Typic Cryaquepts (10%)-----	Yes	depressions on moraines, depressions on pitted outwash plains	2B3,3	Yes	No	Yes
Typic Aquiturbels (5%)-----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Butchlake, very steep (3%)-----	No	hills on moraines	---	---	---	---
Terric Hemistels (2%)-----	Yes	depressions on moraines	1,3	Yes	No	Yes
647: Riverwash (100%)-----	Unranked	flood plains	---	---	---	---
648: Salchaket (90%)-----	No	flood plains	---	---	---	---
Jarvis (10%)-----	No	flood plains	---	---	---	---
Chena (0%)-----	No	stream terraces	---	---	---	---
Tanana (0%)-----	Yes	terraces	2B3	Yes	No	No
649: Salchaket (90%)-----	No	flood plains	---	---	---	---
Jarvis (5%)-----	No	flood plains	---	---	---	---
Riverwash (5%)-----	Unranked	flood plains	---	---	---	---
650: Tanacross (85%)-----	Yes	alluvial flats	2B3	Yes	No	No
Jarvis (10%)-----	No	flood plains	---	---	---	---
Tanana (5%)-----	Yes	terraces	2B3	Yes	No	No
651: Tanana (85%)-----	Yes	terraces	2B3	Yes	No	No
Jarvis (5%)-----	No	flood plains	---	---	---	---
Salchaket (5%)-----	No	flood plains	---	---	---	---
Tanacross (5%)-----	Yes	alluvial flats	2B3	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
652: Terric Fibristels, river valleys (43%) -----	Yes	terraces	1	Yes	No	No
Ruptic-Histic Aquiturbels, river valleys (42%) ----	Yes	outwash plains	2B3	Yes	No	No
Typic Aquiturbels, river valleys (15%)-----	Yes	outwash plains	2B3	Yes	No	No
Typic Histoturbels, river valleys (0%) -----	Yes	outwash plains	2B3	Yes	No	No
653: Terric Fibristels, moraines (65%)-----	Yes	moraines	1	Yes	No	No
Typic Histoturbels, moraines (25%) -----	Yes	moraines	2B3	Yes	No	No
Typic Aquiturbels, moraines (10%) -----	No	moraines	---	---	---	---
654: Terric Hemistels (95%)-----	Yes	depressions on moraines	1,3	Yes	No	Yes
Typic Aquiturbels (5%)-----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
655: Terric Hemistels (55%)-----	Yes	depressions on moraines	1,3	Yes	No	Yes
Typic Aquiturbels (20%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Water (20%) -----	Unranked	lakes	---	---	---	---
Audrey (5%)-----	No	hills on moraines	---	---	---	---
656: Tetlin, moderately steep (95%) -----	Yes	hills	2B3	Yes	No	No
Tetlin, steep (5%)-----	Yes	hills	2B3	Yes	No	No
657: Tetlin (100%) -----	Yes	hills	2B3	Yes	No	No
Richardson (0%)-----	No	escarpments on stream terraces	---	---	---	---
658: Tetlin (100%) -----	Yes	hills	2B3	Yes	No	No
Richardson (0%)-----	No	escarpments on stream terraces	---	---	---	---
659: Glacier (100%) -----	Unranked	mountains	---	---	---	---
660: Turbels (85%) -----	Yes	hills	2B3	Yes	No	No
Tetlin (15%)-----	Yes	hills	2B3	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
661:						
Turbels, moderately steep (80%) -----	Yes	hills	2B3	Yes	No	No
Turbels, steep (10%) -----	Yes	hills	2B3	Yes	No	No
Typic Eutrocryepts (10%) -----	No	hills	---	---	---	---
662:						
Turbels, steep (85%) -----	Yes	hills	2B3	Yes	No	No
Turbels, moderately steep (10%) -----	Yes	hills	2B3	Yes	No	No
Typic Eutrocryepts (5%) -----	No	hills	---	---	---	---
663:						
Turbels, very steep (85%)-----	Yes	hills	2B3	Yes	No	No
Turbels, steep (10%) -----	Yes	hills	2B3	Yes	No	No
Typic Eutrocryepts (5%) -----	No	hills	---	---	---	---
664:						
Turbels, mountains (70%)-----	Yes	moraines	2B3	Yes	No	No
Aquic Dystrocryepts, mountains (15%)-----	No	moraines	---	---	---	---
Water (10%) -----	Unranked	lakes	---	---	---	---
Humic Dystrocryepts, mountains (5%)-----	No	mountains	---	---	---	---
665:						
Turbels, mountains (55%)-----	Yes	moraines	2B3	Yes	No	No
Typic Dystrogelepts, mountains (20%) -----	No	mountains	---	---	---	---
Ruptic-Histic Aquiturbels, mountains (15%)-----	Yes	mountains	2B3	Yes	No	No
Lithic Cryofolists, mountains (10%)-----	No	mountains	---	---	---	---
666:						
Typic Aquiturbels (90%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Audrey (5%)-----	No	hills on moraines	---	---	---	---
Terric Hemistels (5%) -----	Yes	depressions on moraines	1,3	Yes	No	Yes
667:						
Typic Aquiturbels (90%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Butchlake (10%) -----	No	hills on moraines	---	---	---	---
668:						
Typic Aquiturbels, gently sloping (95%)-----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Terric Hemistels (5%) -----	Yes	depressions on moraines	1,3	Yes	No	Yes

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
668: Typic Aquiturbels, strongly sloping (0%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
669: Typic Aquiturbels (40%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
Butchlake (35%) -----	No	hills on moraines	---	---	---	---
Southpaw (20%) -----	No	hills on moraines	---	---	---	---
Water (5%) -----	Unranked	lakes	---	---	---	---
670: Typic Aquiturbels (80%) -----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
Teric Hemistels (20%) -----	Yes	depressions on moraines	1,3	Yes	No	Yes
671: Typic Aquiturbels (80%) -----	Yes	depressions on moraines, hills on moraines	2B3	Yes	No	No
Teric Hemistels (15%) -----	Yes	depressions on moraines	1,3	Yes	No	Yes
Water (5%) -----	Unranked	lakes	---	---	---	---
Southpaw (0%) -----	No	hills on moraines	---	---	---	---
Typic Cryaquepts (0%) -----	Yes	depressions on pitted outwash plains, depressions on moraines	2B3,3	Yes	No	Yes
672: Typic Aquiturbels, ridges (80%) -----	Yes	flood plains	2B3	Yes	No	No
Typic Dystrocryepts, ridges (15%) -----	No	outwash plains	---	---	---	---
Typic Histoturbels, ridges (5%) -----	Yes	hills	2B3	Yes	No	No
673: Typic Aquiturbels, moraines (45%) -----	No	moraines	---	---	---	---
Typic Dystrocryepts, moraines (30%) -----	No	moraines	---	---	---	---
Typic Haploturbels, moraines (15%) -----	No	moraines	---	---	---	---
Teric Fibristels, moraines (5%) -----	Yes	moraines	1	Yes	No	No
Typic Histoturbels, moraines (5%) -----	Yes	moraines	2B3	Yes	No	No
674: Typic Aquiturbels, river valleys (50%) -----	Yes	outwash plains	2B3	Yes	No	No
Typic Histoturbels, river valleys (40%) -----	Yes	outwash plains	2B3	Yes	No	No
Ruptic-Histic Aquiturbels, river valleys (10%) ----	Yes	outwash plains	2B3	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
675:						
Typic Aquorthels, mountains (35%) -----	Yes	mountains	2B3	Yes	No	No
Typic Histoturbels, mountains (35%) -----	Yes	outwash plains, till plains	2B3	Yes	No	No
Histels, mountains (10%) -----	Yes	mountains	1	Yes	No	No
Typic Cryofluvents, mountains (10%) -----	No	flood plains	---	---	---	---
Typic Haplothels, mountains (10%) -----	No	mountains	---	---	---	---
676:						
Typic Cryaquepts (75%) -----	Yes	depressions on pitted outwash plains, depressions on moraines	2B3,3	Yes	No	Yes
Water (15%) -----	Unranked	lakes	---	---	---	---
Typic Aquiturbels (10%) -----	Yes	hills on moraines, depressions on moraines	2B3	Yes	No	No
677:						
Typic Cryofluvents, river valleys (100%) -----	No	terraces	---	---	---	---
678:						
Typic Cryofluvents, river valleys (40%) -----	No	flood plains	---	---	---	---
Histels, river valleys (30%) -----	Yes	terraces	1	Yes	No	No
Typic Haploturbels, river valleys (30%) -----	No	hills	---	---	---	---
679:						
Typic Cryofluvents, river valleys (45%) -----	No	flood plains	---	---	---	---
Typic Dystrocryepts, river valleys (45%) -----	No	flood plains	---	---	---	---
Typic Historthels, river valleys (10%) -----	Yes	alluvial fans, stream terraces	2B3	Yes	No	No
Histels, river valleys (0%) -----	Yes	terraces	1	Yes	No	No
680:						
Typic Cryofluvents, river valleys (45%) -----	No	flood plains	---	---	---	---
Typic Dystrocryepts, river valleys (45%) -----	No	flood plains	---	---	---	---
Typic Histoturbels, river valleys (10%) -----	Yes	flood plains	2B3	Yes	No	No
681:						
Typic Dystrocryepts, ridges (55%) -----	No	ridges	---	---	---	---
Ruptic-Histic Aquiturbels, ridges (35%) -----	Yes	hills, ridges	2B3	Yes	No	No
Typic Historthels, ridges (8%) -----	Yes	ridges	2B3	Yes	No	No
Aquic Dystrocryepts, ridges (2%) -----	Yes	moraines	---	---	---	---

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
682:						
Typic Dystricrypts, high moraines (45%) -----	No	moraines	---	---	---	---
Turbels, high moraines (25%)-----	Yes	moraines	2B3	Yes	No	No
Water (20%) -----	Unranked	lakes	---	---	---	---
Histels, high moraines (5%) -----	Yes	moraines, till plains	1	Yes	No	No
Typic Cryaquepts, high moraines (5%)-----	Yes	drainageways on moraines, depressions on moraines	2B3	Yes	No	No
683:						
Typic Dystricrypts, moraines (55%)-----	No	moraines	---	---	---	---
Turbels, moraines (20%) -----	No	depressions on moraines	---	---	---	---
Water (15%) -----	Unranked	lakes	---	---	---	---
Histels, moraines (10%) -----	Yes	moraines	1	Yes	No	No
684:						
Typic Dystricrypts, outwash plains (70%) -----	No	hills on outwash plains	---	---	---	---
Typic Aquiturbels, outwash plains (15%) -----	Yes	outwash plains	2B3	Yes	No	No
Typic Haplothels, outwash plains (15%) -----	No	outwash plains	---	---	---	---
Histels, outwash plains (0%) -----	Yes	outwash plains	1	Yes	No	No
685:						
Typic Dystricrypts, high moraines (30%) -----	No	moraines	---	---	---	---
Typic Cryaquepts, high moraines (25%) -----	Yes	drainageways on moraines, depressions on moraines	2B3	Yes	No	No
Aquic Dystricrypts, high moraines (15%)-----	No	depressions on moraines	---	---	---	---
Ruptic Histoturbels, high moraines (15%) -----	Yes	moraines	2B3	Yes	No	No
Water (10%) -----	Unranked	lakes	---	---	---	---
Terric Hemistels, high moraines (5%)-----	Yes	depressions on moraines	1	Yes	No	No
686:						
Typic Dystricrypts, moraines (35%)-----	No	moraines	---	---	---	---
Typic Cryaquepts, moraines (30%)-----	Yes	depressions on moraines	2B3	Yes	No	No
Typic Histoturbels, moraines (25%) -----	Yes	moraines	2B3	Yes	No	No
Aquic Dystricrypts, moraines (10%) -----	No	hills on moraines	---	---	---	---
687:						
Typic Dystricrypts, ridges (45%)-----	No	ridges	---	---	---	---
Typic Haplocryands, ridges (40%) -----	No	mountains	---	---	---	---
Typic Histoturbels, ridges (15%) -----	Yes	mountains	2B3	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
688: Typic Dystrocryepts, moraines (40%)-----	No	moraines	---	---	---	---
Typic Haploturbels, moraines (30%) -----	No	moraines	---	---	---	---
Typic Aquiturbels, moraines (15%) -----	No	moraines	---	---	---	---
Typic Histoturbels, moraines (15%) -----	Yes	moraines	2B3	Yes	No	No
689: Typic Dystrocryepts, moraines (45%)-----	No	moraines	---	---	---	---
Typic Histoturbels, moraines (45%) -----	Yes	moraines	2B3	Yes	No	No
Typic Aquiturbels, moraines (10%) -----	No	moraines	---	---	---	---
690: Typic Dystrocryepts, ridges (65%)-----	No	ridges	---	---	---	---
Typic Histoturbels, ridges (35%) -----	Yes	mountains, ridges on hills	2B3	Yes	No	No
691: Typic Dystrocryepts, high moraines (35%) -----	No	moraines	---	---	---	---
Typic Histoturbels, high moraines (35%)-----	Yes	moraines	2B3	Yes	No	No
Folists, high moraines (15%) -----	No	moraines	---	---	---	---
Histels, high moraines (15%)-----	Yes	moraines, till plains	1	Yes	No	No
692: Typic Dystrocryepts, ridges (60%)-----	No	ridges	---	---	---	---
Typic Histoturbels, ridges (25%) -----	Yes	alluvial fans, ridges on hills	2B3	Yes	No	No
Typic Aquiturbels, ridges (15%) -----	Yes	hills	2B3	Yes	No	No
693: Typic Dystrocryepts, ridges (65%)-----	No	ridges	---	---	---	---
Typic Histoturbels, ridges (20%) -----	Yes	mountains, ridges on hills	2B3	Yes	No	No
Typic Cryofluvents, ridges (15%)-----	No	drainageways on mountains	---	---	---	---
694: Typic Dystrogelepts, mountains (55%) -----	No	moraines, hills	---	---	---	---
Aquic Dystrocryepts, mountains (20%)-----	No	moraines	---	---	---	---
Orthels, mountains (15%)-----	No	mountains	---	---	---	---
Histels, mountains (10%)-----	Yes	moraines	1	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
695:						
Typic Dystrogelepts, mountains (30%) -----	No	hills, moraines	---	---	---	---
Aquic Dystrocryepts, mountains (25%)-----	No	moraines	---	---	---	---
Typic Haplothels, mountains (25%) -----	No	mountains	---	---	---	---
Ruptic Histoturbels, mountains (20%) -----	Yes	hills	2B3	Yes	No	No
696:						
Typic Dystrogelepts, mountains (85%) -----	No	mountains	---	---	---	---
Lithic Cryofolists, mountains (15%)-----	No	mountains	---	---	---	---
Aquic Dystrocryepts, mountains (0%)-----	No	moraines	---	---	---	---
Lithic Dystrocryepts, mountains (0%) -----	No	mountains	---	---	---	---
697:						
Typic Dystrogelepts, mountains (40%) -----	No	mountains	---	---	---	---
Typic Cryaquepts, mountains (30%) -----	Yes	mountains	2B3	Yes	No	No
Humic Dystrocryepts, mountains (20%)-----	No	mountains	---	---	---	---
Typic Histoturbels, mountains (10%)-----	Yes	mountains	2B3	Yes	No	No
698:						
Typic Haplothels, high moraines (40%) -----	No	moraines	---	---	---	---
Typic Aquiturbels, high moraines (30%)-----	Yes	drainageways on moraines	2B3	Yes	No	No
Ruptic Histoturbels, high moraines (20%) -----	Yes	moraines	2B3	Yes	No	No
Histels, high moraines (5%) -----	Yes	moraines, till plains	1	Yes	No	No
Typic Dystrocryepts, high moraines (5%)-----	No	moraines	---	---	---	---
699:						
Typic Haploturbels, mountains (35%)-----	No	mountains	---	---	---	---
Typic Cryaquepts, mountains (25%) -----	Yes	mountains	2B3	Yes	No	No
Typic Dystrogelepts, mountains (25%) -----	No	mountains	---	---	---	---
Lithic Dystrocryepts, mountains (15%) -----	No	mountains	---	---	---	---
700:						
Typic Haploturbels, outwash plains (40%)-----	No	outwash plains	---	---	---	---
Typic Histoturbels, outwash plains (35%)-----	Yes	outwash plains	2B3	Yes	No	No
Histels, outwash plains (25%)-----	Yes	outwash plains	1	Yes	No	No
Typic Aquiturbels, outwash plains (0%) -----	Yes	outwash plains	2B3	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
701:						
Typic Historthels, outwash plains (40%) -----	Yes	outwash plains	2B3	Yes	No	No
Typic Histoturbels, outwash plains (35%)-----	Yes	outwash plains	2B3	Yes	No	No
Terric Fibristels, outwash plains (15%) -----	Yes	outwash plains	1	Yes	No	No
Typic Aquiturbels, outwash plains (10%) -----	Yes	outwash plains	2B3	Yes	No	No
702:						
Typic Histoturbels, river valleys (75%)-----	Yes	outwash plains	2B3	Yes	No	No
Aquic Dystrocryepts, river valleys (11%)-----	No	terraces	---	---	---	---
Histels, river valleys (11%)-----	Yes	terraces	1	Yes	No	No
Typic Dystrocryepts, river valleys (3%)-----	No	outwash plains	---	---	---	---
703:						
Typic Histoturbels, high moraines (65%)-----	Yes	moraines	2B3	Yes	No	No
Glacic Aquiturbels, high moraines (20%) -----	Yes	till plains	2B3	Yes	No	No
Histels, high moraines (15%)-----	Yes	moraines, till plains	1	Yes	No	No
704:						
Typic Histoturbels, mountains (50%)-----	Yes	V-shaped valleys, moraines	2B3	Yes	No	No
Histels, mountains (25%)-----	Yes	mountains	1	Yes	No	No
Typic Dystrogelepts, mountains (25%) -----	No	mountains	---	---	---	---
Typic Aquiturbels, mountains (0%) -----	Yes	hills	2B3	Yes	No	No
705:						
Typic Histoturbels, ridges (50%) -----	Yes	terraces, hills	2B3	Yes	No	No
Typic Aquiturbels, ridges (25%) -----	Yes	alluvial fans	2B3	Yes	No	No
Terric Fibristels, ridges (20%)-----	Yes	terraces	1	Yes	No	No
Typic Dystrocryepts, ridges (5%)-----	No	outwash plains	---	---	---	---
706:						
Typic Histoturbels, river valleys (80%)-----	Yes	alluvial fans	2B3	Yes	No	No
Typic Dystrocryepts, river valleys (20%) -----	No	drainageways on alluvial fans	---	---	---	---
707:						
Typic Histoturbels, hills (65%) -----	No	hills	---	---	---	---
Typic Dystrocryepts, hills (25%)-----	No	hills	---	---	---	---
Typic Haploturbels, hills (10%) -----	No	hills	---	---	---	---
708:						
Typic Histoturbels, ridges (80%) -----	Yes	terraces, ridges on hills, ridges on mountains	2B3	Yes	No	No
Typic Dystrocryepts, ridges (20%)-----	No	ridges	---	---	---	---

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
709:						
Typic Histoturbels, ridges (60%) -----	Yes	mountains	2B3	Yes	No	No
Typic Dystrocryepts, ridges (25%) -----	No	outwash plains	---	---	---	---
Terric Fibristels, ridges (15%) -----	Yes	terraces	1	Yes	No	No
710:						
Typic Histoturbels, ridges (50%) -----	Yes	mountains, ridges on hills	2B3	Yes	No	No
Typic Dystrocryepts, ridges (20%) -----	No	ridges	---	---	---	---
Typic Historthels, ridges (20%) -----	Yes	ridges	2B3	Yes	No	No
Histels, ridges (10%) -----	Yes	ridges	1	Yes	No	No
Typic Aquiturbels, ridges (0%) -----	Yes	ridges	2B3	Yes	No	No
711:						
Typic Histoturbels, mountains (60%) -----	Yes	U-shaped valleys	2B3	Yes	No	No
Typic Dystrogelepts, mountains (20%) -----	No	mountains	---	---	---	---
Aquic Dystrocryepts, mountains (10%) -----	No	mountain slopes	---	---	---	---
Ruptic Histoturbels, mountains (10%) -----	Yes	mountain valleys	2B3	Yes	No	No
712:						
Typic Histoturbels, moraines (50%) -----	Yes	moraines	2B3	Yes	No	No
Typic Dystrocryepts, moraines (30%) -----	No	moraines	---	---	---	---
Water (15%) -----	Unranked	lakes	---	---	---	---
Terric Fibristels, moraines (3%) -----	Yes	moraines	1	Yes	No	No
Typic Aquiturbels, moraines (2%) -----	No	moraines	---	---	---	---
713:						
Typic Histoturbels, outwash plains (40%) -----	Yes	outwash plains	2B3	Yes	No	No
Typic Haplorthels, outwash plains (35%) -----	No	outwash plains	---	---	---	---
Terric Hemistels, outwash plains (25%) -----	Yes	outwash plains	1	Yes	No	No
714:						
Typic Histoturbels, mountains (40%) -----	Yes	outwash plains, till plains	2B3	Yes	No	No
Typic Haploturbels, mountains (20%) -----	No	outwash plains, till plains, moraines	---	---	---	---
Typic Dystrogelepts, mountains (15%) -----	No	hills, moraines	---	---	---	---
Orthels, mountains (10%) -----	No	mountains	---	---	---	---
Ruptic Histoturbels, mountains (10%) -----	Yes	till plains, outwash plains	2B3	Yes	No	No
Histels, mountains (5%) -----	Yes	till plains	1	Yes	No	No

Table 16. Hydric Soils—Continued

Map symbol and soil name (percent composition)	Hydric soil	Local landform	Hydric soils criteria			
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
715: Volkmar (90%) -----	No	stream terraces	---	---	---	---
Richardson (5%)-----	No	stream terraces	---	---	---	---
Tanana (5%)-----	Yes	terraces	2B3	Yes	No	No
716: Volkmar (80%) -----	No	stream terraces	---	---	---	---
Nenana (15%)-----	No	stream terraces	---	---	---	---
Tanana (5%)-----	Yes	terraces	2B3	Yes	No	No
717: Water (100%)-----	Unranked	lakes	---	---	---	---

Table 17. Classification of the Soils

Soil name	Family or higher taxonomic class
Aquic Dystricryepts -----	Aquic Dystricryepts Coarse-loamy, mixed, superactive Aquic Dystricryepts Loamy-skeletal, mixed, superactive Aquic Dystricryepts
Aquic Umbrorthels -----	Aquic Umbrorthels
Audrey-----	Coarse-loamy, mixed, superactive Aquic Eutrocryepts
Babel-----	Loamy-skeletal, mixed, superactive, subgelic Typic Haploturbels
Butchlake -----	Loamy-skeletal, mixed, superactive Typic Eutrocryepts
Chena -----	Sandy-skeletal, mixed Typic Cryorthents
Chetlake -----	Coarse-loamy, mixed, superactive, subgelic Typic Aquiturbels
Donnelly-----	Sandy-skeletal, mixed Typic Eutrocryepts
Folists-----	Folists
Gerstle-----	Coarse-loamy, mixed, superactive Aquic Eutrocryepts
Glacic Aquiturbels-----	Glacic Aquiturbels
Histels -----	Histels
Humic Dystricryepts -----	Humic Dystricryepts Loamy-skeletal, mixed, superactive Humic Dystricryepts
Jarvis -----	Coarse-loamy over sandy or sandy-skeletal, mixed, superactive, nonacid Typic Cryofluvents
Lithic Cryofolists -----	Euic Lithic Cryofolists
Lithic Dystricryepts -----	Lithic Dystricryepts
McKinley -----	Loamy-skeletal, mixed, superactive, subgelic Typic Eutrogelepts
Moosehead -----	Coarse-loamy over sandy or sandy-skeletal, mixed, superactive Aquic Eutrocryepts
Mosquito -----	Coarse-loamy, mixed, subgelic superactive Ruptic Histoturbels
Nenana-----	Coarse-silty over sandy or sandy-skeletal, mixed, superactive Typic Eutrocryepts
Ninchuun-----	Coarse-loamy, mixed, superactive, pergelic Typic Aquiturbels
Nomercy Lake-----	Loamy-skeletal, mixed, superactive, subgelic Typic Eutrogelepts
Orthels-----	Orthels
Richardson -----	Coarse-silty, mixed, superactive Aquic Eutrocryepts
Ruptic Histoturbels-----	Ruptic Histoturbels
Ruptic-Histic Aquiturbels -----	Ruptic-Histic Aquiturbels
Salchaket -----	Coarse-loamy, mixed, superactive, nonacid Typic Cryofluvents
Southpaw-----	Coarse-loamy, mixed, superactive Typic Eutrocryepts
Tanacross -----	Coarse-loamy, mixed, superactive, subgelic Typic Histoturbels
Tanana -----	Coarse-loamy, mixed, superactive, subgelic Typic Aquiturbels
Terric Fibristsels-----	Terric Fibristsels
Terric Hemistels -----	Terric Hemistels
Tetlin -----	Coarse-loamy, mixed, superactive, subgelic Typic Aquiturbels
Turbels -----	Turbels
Typic Aquiturbels -----	Typic Aquiturbels
Typic Aquorthels-----	Typic Aquorthels
Typic Cryaquepts-----	Typic Cryaquepts
Typic Cryofluvents -----	Coarse-loamy over sandy or sandy-skeletal, mixed, superactive, nonacid Typic Cryofluvents Typic Cryofluvents
Typic Cryorthents-----	Typic Cryorthents
Typic Dystricryepts-----	Typic Dystricryepts
Typic Dystrogelepts-----	Loamy-skeletal, mixed, superactive Typic Dystrogelepts
Typic Eutrocryepts -----	Loamy-skeletal, mixed, superactive Typic Eutrocryepts
Typic Haplocryands-----	Typic Haplocryands
Typic Haploorthels-----	Coarse-loamy, mixed, superactive, subgelic Typic Haploorthels Typic Haploorthels
Typic Haploturbels -----	Typic Haploturbels
Typic Historthels -----	Typic Historthels
Typic Histoturbels -----	Typic Histoturbels
Volkmar -----	Coarse-silty over sandy or sandy-skeletal, mixed, superactive Aquic Eutrocryepts

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